MITSUBISHI ELECTRIC ENGINEERING

**Programmable Controller Upgrade Tool** 

**October 2017 Edition** 

**Programmable Controller Upgrade Tool General Catalog** 

# Upgrade Tool



MELSEC-A Series **→ MELSEC-Q** Series

MELSEC-AnS Series ⇒ MELSEC-L Series

MELSEC-AnS Series ⇒ MELSEC-Q Series

SYSMAC C Series ⇒ MELSEC-Q Series

New Satellite JW Series ⇒ MELSEC-Q Series

MEMOCON-SC GL Series ⇒ MELSEC-Q Series

Non-Mitsubishi Programmable Controller Series  $\Rightarrow$  MELSEC-Q Series

Upgrade Tool

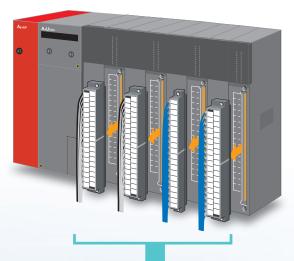
New Release! Conversion adapters for replacing OMRON or YASKAWA Electric programmable controllers with the MELSEC-Q series programmable controllers!

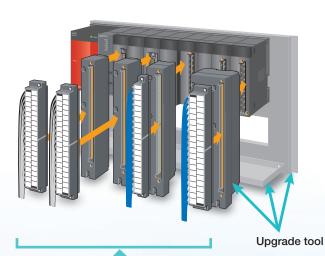
Section 5 Section 6

- Upgrade Tool (Renewal Tool) Compatible Series
   MELSEC-A Series ⇒ MELSEC-Q Series
   MELSEC-AnS Series ⇒ MELSEC-L Series
   MELSEC-AnS Series ⇒ MELSEC-Q Series
   SYSMAC C Series ⇒ MELSEC-Q Series
  - ☐ New Satellite JW Series ⇒ MELSEC-Q Series
  - MEMOCON-SC GL Series ⇒ MELSEC-Q Series
  - ☐ Non-Mitsubishi Programmable Controller ⇒ MELSEC-Q "Universal Conversion Adapter"
- The upgrade tool allows you to use your existing wiring (including terminal blocks/connectors) as is, achieving a significant reduction in transition work time as well as a signification decrease in wiring errors. (some connection changes required)

## **Existing programmable controller**

## **New programmable controller**





Reuse

**Existing wiring** 

(including terminal blocks and connectors)

■ The MELSEC-A/AnS series sequence program can be simply replaced using GX Developer and the A/QnA→Q conversion support tool, and the SYSMAC C series sequence program can be simply replaced using a program converter.

Product name: MELSEC-A series ⇒ MELSEC-Q series Upgrade Tool

Section 

# Upgrading from the MELSEC-A series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series
- Significantly shortens the time required for input, output, analog, and high-speed counter module wiring, and significantly reduces wiring errors
- Permits reuse of sequence programs



Product name: MELSEC-AnS series ⇒ MELSEC-L series Upgrade Tool

Section 2

# Upgrading from the MELSEC-AnS series to the MELSEC-L Series

- Simplifies replacement with the MELSEC-L series
- Significantly shortens the time required for input, output, analog and high-speed counter module wiring, and significantly reduces wiring
- Permits reuse of sequence programs



Product name: MELSEC-Ans series ⇒ MELSEC-Q series Upgrade Tool

Section 3

# Upgrading from the MELSEC-AnS series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series
- Significantly shortens the time required for input, output, analog, high-speed counter, temperature input, and temperature control module wiring, and significantly reduces wiring errors
- Permits reuse of sequence programs



Product name: SYSMAC C series → MELSEC-Q series Upgrade Tool

Section 4

# Upgrading from the SYSMAC C series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series
- Significantly shortens the time required for input and output module wiring, and significantly reduces wiring errors

Product name: New Satellite JW series ⇒ MELSEC-Q series Upgrade Tool

Section 5

# Upgrading from the New Satellite JW series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series
- Significantly shortens the time required for input and output module wiring, and significantly reduces wiring errors

Product name: MEMOCON-SC GL series → MELSEC-Q series Upgrade Tool

Section (a)

# Upgrading from the MEMOCON-SC GL Series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series
- Significantly shortens the time required for input and output module wiring, and significantly reduces wiring errors

Product name: Non-Mitsubishi Programmable Controller⇒MELSEC-Q series Upgrade Tool "Universal Conversion Adapter"

# Upgrading from a non-Mitsubishi programmable controller to the MELSEC-Q series

Universal conversion adapter

Section

Contents-1

1

SYSMAC

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# **Contents**





# MELSEC-A Series ⇒ MELSEC-Q Series Upgrade Tool

Product Overview	1-1
Model List	1-3
Conversion Adapter	1-6
Specifications	1-6
For Input/Output Modules [1-slot type]	1-6
For Input/Output Modules [2-slot type]	1-12
For Analog Modules [1-slot type]	1-15
For Analog Modules [2-slot type]	1-20
For High-Speed Counter Modules [1-slot type]	1-25
Base Adapter	1-27
Specifications	1-27
Mounting Dimensions	1-27
When Not Using a Base Adapter	1-28
Conversion Adapter Support Flange	1-29
Specifications	1-29
Usage Precautions	1-30
Module Width	1-30
Depth	1-31
Conversion Adapter Support Flange / Base Adapter	1-31
Slot Positions	1-32
External Dimensions	1-34
Conversion Adapter	1-34
Base Adapter	1-37
Conversion Adapter Support Flange	1-37





# MELSEC-AnS Series ⇒ MELSEC-L Series Upgrade Tool

Product Overview	2-1
Selecting the Installation Method During Replacement	2-3
Model List	2-5
Conversion Adapter	2-7
Specifications	2-7
For Input/Output Modules [1-module type]	2-7
For Analog Modules [1-module type]	2-12
For High-Speed Counter Modules [1-module type]	2-14
Base Adapter	2-18
Specifications	2-18
Mounting Dimensions	2-18
Usage Precautions	2-19
Module Width	2-19
Depth / Height	2-20
Terminal Block Cover	2-21
External Dimensions	2-22
Conversion Adapter	2-22
Dana Adamtan	0.04





# MELSEC-Ans Series ⇒ MELSEC-Q Series Upgrade Tool

Product Overview	3-1
Model List	3-5
Conversion Adapter	
Specifications	
For Input/Output Modules [1-slot type]	3-8
For Input/Output Modules [2-slot type]	3-12
For Analog Modules [1-slot type]	3-15
For High-Speed Counter Modules [1-slot type]	3-21

For Temperature Input Modules [1-slot type]
For Temperature Control Modules [1-slot type]
For Temperature Control Modules with Disconnection Detection Function [1-slot type + Disconnection detection connector conversion cable] 3-39
Base Adapter 3-47
Specifications
Mounting Dimensions
Conversion Adapter DIN Rail Mounting Bracket
Specifications
Mounting Dimensions
Usage Precautions
Module Width
Depth / Height
Terminal Block Cover
Base Adapter / Conversion Adapter DIN Rail Mounting Bracket
Slot Positions
External Dimensions
Conversion Adapter
Base Adapter
Conversion Adapter DIN Rail Mounting Bracket





# SYSMAC C Series > MELSEC-Q Series Upgrade Tool

Product Overview	4-1
Model List	4-2
Conversion Adapter	4-3
Specifications	4-3
[1-slot type]	4-3
[2-slot type]	4-11
Base Adapter	4-13
Specifications	4-13
Mounting Dimensions	4-13
When Not Using a Base Adapter	4-14
Conversion Adapter Support Flange	4-15
Specifications	4-15
Usage Precautions	4-16
Module Width	4-16
Depth	4-16
Conversion Adapter Support Flange / Base Adapter	4-17
Slot Positions	4-18
External Dimensions	4-20
Conversion Adapter	4-20
Base Adapter	4-24
Conversion Adapter Support Flange	4-25

# **Contents**







# New Satellite JW Series ⇒ MELSEC-Q Series Upgrade Tool

<jw (jw50h="" 100h)="" 70h="" large="" series="" type=""></jw>	
Product Overview	5-
Model List	5-3
Conversion Adapter	5-5
Specifications	5-5
For Input/Output Modules <1-slot type>	5-5
For Input/Output Modules <2-slot type>	5-10
Conversion Adapter Support Flange	5-12
Specifications	5-12
Upgrading Using the Base Adapter or the Q Series Large Type Base Unit	5-13
Base Adapter	5-1
Specifications	5-1
Mounting Dimensions	5-16
Comparison of External Dimensions and Mounting Hole Dimensions for Replacements .	5-17
<when a="" base="" main="" unit="" using=""></when>	5-17
<when an="" base="" extension="" unit="" using=""></when>	5-18
Slot Positions	5-19
<when a="" base="" main="" unit="" using=""></when>	5-19
<when an="" base="" extension="" unit="" using=""></when>	5-2
Usage Precautions	5-24
Module Width	5-24
Depth	5-25
Check for Interference with Adjacent Modules	5-26
Conversion Adapter Support Flange / Base Adapter	5-26
External Dimensions	5-27
Conversion Adapter	5-27
<jw (jw300="" 20h)="" 30h="" series="" small="" type=""></jw>	
Product Overview	
Mitsubishi Electric AnS-size Q Series Large Type Base Unit (Recommended)	
Model List	
Conversion Adapter	
Specifications	
For Input/Output Modules <1-slot type>	
MITSUBISHI ELECTRIC CORPORATION Base Unit	
Mounting Dimensions	
Comparison of External Dimensions and Mounting Hole Dimensions for Replacements .	
Slot Positions	
<when a="" base="" main="" unit="" using=""></when>	
<when an="" base="" extension="" unit="" using=""></when>	
Usage Precautions	
Module Width	
Depth	
Check for Interference with Adjacent Modules	
External Dimensions	5-47





# $\begin{array}{l} \textbf{MEMOCON-SC GL Series} \Rightarrow \textbf{MELSEC-Q Series} \\ \textbf{Upgrade Tool} \end{array}$

P	roduct Overview	6-
٧	lodel List	6-3
С	onversion Adapter	6-5
	Specifications	6-5
	For Input/Output Modules <1-slot type>	6-5
	For Input/Output Modules <2-slot type>	6-1
С	onversion Adapter Support Flange	6-13
	Specifications	6-13
U	pgrading Using the Base Adapter or the Q Series Large Type Base Unit	6-15
В	ase Adapter	6-17
	Specifications	6-17
	Mounting Dimensions	6-18
	Comparison of External Dimensions and Mounting Hole Dimensions for Replacements .	6-19
	<when a="" base="" main="" unit="" using=""></when>	6-19
	<when an="" base="" extension="" unit="" using=""></when>	6-20
	Slot Positions	6-2
	<when a="" base="" main="" unit="" using=""></when>	6-2
	<when an="" base="" extension="" unit="" using=""></when>	6-25
U	sage Precautions	6-28
	Module Width	6-28
	Depth	6-29
	Check for Interference with Adjacent Modules	6-30
	Conversion Adapter Support Flange / Base Adapter	6-30
E	xternal Dimensions	6-3 <sup>-</sup>
	Conversion Adapter	6-3





# Non-Mitsubishi Programmable Controller > MELSEC-Q Series Upgrade Tool "Universal Conversion Adapter"

Floddet Overview	/ - 1
(Replacing a Non-Mitsubishi Programmable Controller (Large Type) with the MEL	SEC-Q Series)
Model List	7-13
Universal Conversion Adapter	7-15
Specifications	7-15
Conversion Adapter Support Flange	7-29
Specifications	7-29
When the base adapter is not used	7-29
Base Adapter	7-31
Specifications	7-31
Mounting Dimensions	7-32
Usage Precautions	7-33
Module Width	7-33
Depth	7-34
Conversion Adapter Support Flange / Base Adapter	7-34
Slot Positions	7-35
External Dimensions	7-37
Universal Conversion Adapter	7-37
Base Adapter	7-39
Conversion Adapter Support Flange	7-39
(Replacing a Non-Mitsubishi Programmable Controller (Small Type) with the MEL	SEC-Q Series)
Model List	7-40
Universal Conversion Adapter	7-41
Specifications	7-41
Usage Precautions	7-48
Module Width	7-48
Depth / Height	7-49
External Dimensions	7-50
Universal Conversion Adapter	7-50

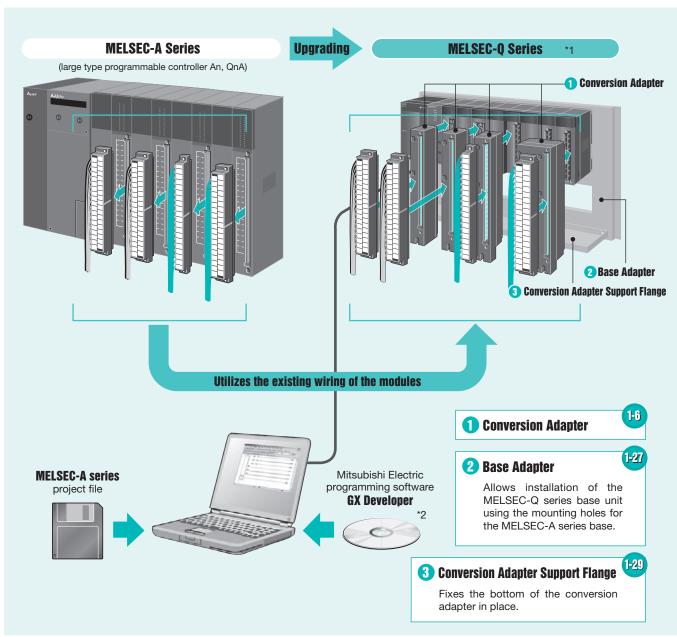
# MELSEC-A Series → MELSEC-Q Series Upgrade Tool

# Upgrading from the MELSEC-A series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series
- The upgrade tool makes it easy to replace the Mitsubishi Electric programmable controller MELSEC-A series with the MELSEC-Q series.
- Significantly shortens the time required for input, output, analog, and high-speed counter module wiring, and significantly reduces wiring errors
- The upgrade tool allows you to connect the wiring connected to the MELSEC-A series input, output, analog, and high-speed counter modules as is to the MELSEC-Q series using a conversion adapter. (Partial changes to power supply and common terminal connections required.)
- By using a base adapter, the MELSEC-Q series can be installed using the MELSEC-A series mounting holes. (Additional drilling of holes is not required.)
- Permits reuse of sequence programs
  - The upgrade tool allows you to change from the MELSEC-A series to the MELSEC-Q series and reuse programs by changing the PLC type in the Mitsubishi Electric programming software GX Developer.

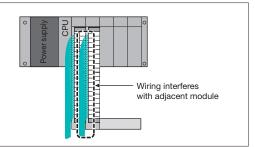
## **Product Overview**

This upgrade tool comprises a "conversion adapter" that changes the existing wiring connected to Mitsubishi Electric programmable controller MELSEC-A series modules to wiring applicable to the modules of the MELSEC-Q series, a "conversion adapter support flange" that fixes the bottom of the conversion adapter in place, and a "base adapter" that makes it possible to install the MELSEC-Q series using the mounting holes of the MELSEC-A series base unit.



- \*1: When replacing the MELSEC-A series with the MELSEC-Q series, verification of the mounting is required due to the change in module width and depth dimensions. For details, refer to the "Usage Precautions" (1-30) in this catalog.
- \*2: Programs can be reused when changing from the MELSEC-A series (existing program) to the MELSEC-Q series by changing the PLC type in the Mitsubishi Electric programming software GX Developer. For details, refer to the GX Developer Operating Manual. Tools that support program replacement with the Q series are also provided by Mitsubishi Electric.

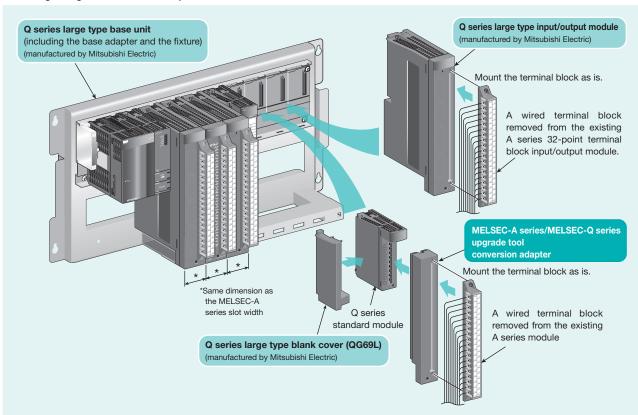
If the wiring interferes with an adjacent module, wiring space can be secured by utilizing the Q series large type base unit.



#### MITSUBISHI ELECTRIC CORPORATION For MELSEC-A Series (large type) ⇒MELSEC-O Series

# **Upgrading using the Q series large type base unit**

The slot width of the Q series large type base unit is the same as the slot width of the MELSEC-A series (large type) base unit, alleviating wiring interference with adjacent modules.



- •The installation dimensions of the Q series large type base unit are the same as those of the MELSEC-A large type series. There is no need to drill holes for mounting.
- •Can be used together with the Q series large type input/output module.
- •The 2-slot type conversion adapter is not applicable.

**Point** 

The Q series large type base unit allows both the Q series standard module that uses the upgrade tool conversion adapter and the Q series large type input/output module to be mounted together, enabling upgrades that utilize the advantages of both modules.

#### **Q Series Large Type Base Unit List**

A series model	Q series large type base model
A35B (-E, -UL)	Q35BL
A38B (-E, -UL)	Q38BL
A65B (-UL)	Q65BL
A68B (-UL)	Q68BL
A55B (-UL)	Q55BL

#### Q Series Large Type Input/Output Module List

a conco Large Typ	o mpat output modulo List		
A series model	Q series large type module model		
AX11	QX11L		
AX21	QX21L		
AY10A	0.74141		
AY11A (EU)	QY11AL		
AY13 (E, EU)	QY13L		
AY23	QY23L		
AY41 (P)	QY51PL		
AY51 (-S1)	QTSIFL		

#### Q Series Large Type Blank Cover

A series model	Q series large type blank cover model
_	QG69L

# **Model List**

# **1** Conversion Adapter

When selecting a conversion adapter, be sure to refer to the module specification comparison charts and notes on pages 1-6 to 1-26. These pages indicate precautions such as differences in the number of points per common. For detailed specifications and general specifications not stated in the module specification comparison charts, refer to the user's manual of the corresponding module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### For Input/Output Modules

[1-slot type] (Applicable to Mitsubishi Electric Q series large type base units as well)

lana est /	MELSEC-A series	MELSEC-Q series	Conversion adapter				
Input/ Output	module model	module model	Model	Shape		No. of input/	Page
Output	before replacement	after replacement	iviodei	MELSEC-A series	MELSEC-Q series	output points	
	AX10, AX10-UL	QX10	ERNT-AQTX10				1-6
	AX40, AX40-UL	QX40, QX70	ERNT-AQTX40	Terminal block			
	AA40, AA40-UL	QX40-S1			Terminal block (18 points)		
	AX70, AX70-UL	QX70		(20 points)		16 points	1-6
	AX50	QX50		(20 points)			
	AX50-S1	QA50					
Input	AX80, AX80-UL	QX80	ERNT-AQTX80				1-7
IIIput	AX41, AX41-UL	QX41, QX41-S2 (*3),					
	AX41, AX41-UL	QX71		Terminal block	FCN connector	32 points	
	AX31-S1	QX41, QX41-S2 (*3)	ERNT-AQTX41	(38 points)	(40P jack)		1-7
	AX41-S1	QX41-S1		(36 points)	(40F Jack)		
	AX71	QX71					
	AX81	QX81, QX81-S2 (*3)	ERNT-AQTX81	Terminal block	D-sub connector (37P)		1-8
	AX81-S1	QA61, QA61-32 (3)	EMNI-AQIX81	(38 points)			1-0
	AY10						
	AY11, AY11-UL	QY10	ERNT-AQTY10				1-9
	AY11E	QTIO					1-9
	AY11EEU						
	AY22	QY22	ERNT-AQTY22	Terminal block	Terminal block	16 points	1-9
	AY40, AY40-UL	QY40P		(20 points)	(18 points)	To points	
	AY40P	Q140F	ERNT-AQTY40				1-10
Output	AY70, AY70-UL	QY70					
	AY50, AY50-UL	QY50	ERNT-AQTY50				1-10
	AY80	QY80	ERNT-AQTY80				1-11
	AY41, AY41-UL	QY41P	ERNT-AQTY41	Terminal block	FCN connector		
	AY41P	Q I T I F		ERNT-AQTY41 (38 points) (40P jack)		1-11	
	AY71	QY71		(36 points)	(40F Jack)	32 points	
	AY81	QY81P	ERNT-AQTY81	Terminal block	D-sub connector		1-12
	AY81EP	_ QTOIP		(38 points)	(37P)		1-12

<sup>3:</sup> The input specifications (such as input derating) may differ from those of the existing product. Be sure to verify the specifications prior to use.

#### [2-slot type] (Not applicable to Mitsubishi Electric Q series large type base units)

L- 0.01	typol (not applicable to mi	=	jo tjipo baoo ariitoj				
Input/	MELSEC-A series	MELSEC-Q series		Conversion ada	pter		
	module model	module model	Model	Sha	No. of input/	Page	
Output	before replacement	after replacement	Model	MELSEC-A series	MELSEC-Q series	output points	
lanat	, , AX11	0)/40 0	EDNIT ACTIVAL			32 points	4.40
Input	AX11EU	QX10 × 2 modules	ERNT-AQTX11		Terminal block (18 points) × 2		1-12
	AY10A, AY10A-UL						
	AY11A	QY18A × 2 modules	ERNT-AQTY10A	Terminal block		16 points	1-13
	AY11AEU						
	AY13		ERNT-AQTY13				
	AY13E	QY10 × 2 modules					1-13
Output	AY13EU			(38 points)			
	AY23	QY22 × 2 modules	ERNT-AQTY23		 	00 ! !	1-14
	AY51, AY51-UL	0)/50			-  -	32 points	
1	AY51-S1	QY50 × 2 modules	EDNIT ACTIVE (*4)		 		
	AY81	0)/00	ERNT-AQTY51 (*4)				1-14
	AY81EP	QY80 × 2 modules					

<sup>\*4:</sup> The Mitsubishi Electric replacement model for AY81/AY81EP is QY81P. However, due to the difference in rated load current, this conversion adapter can be used if you replace AY81/AY81EP with two QY80 modules.

Note: 1. The input/output modules shown in the table below are not conversion adapter compatible and require rewiring. Be sure to verify that the MELSEC-Q series module specifications satisfy the specifications of connected devices and equipment.

	MELSEC	C-A series input/output module	model	MELSEC-Q series input/output module model				Universal
Input/Output	Model	Specifications	No. of points	Model	Specifications	No. of points	No. of required modules	conversion adapter
	AX20 (-UL)	200 to 240VAC	16 points	QX28	100 to 240VAC	8 points	2 modules	(*5)
	AX21 (EU)	200 to 240VAC	32 points	QX28	100 to 240 VAC	o points	4 modules	(*5)
	AX80	12/24VDC source type	16 points	QX70	5/12VDC sink/source type	16 points		
	AX80E	12/24VDC source type	16 points	QX70 QX80H	24VDC source type	16 points	1 module	(*5)
Input	AX81	12/24VDC source type	00 11	0)/74	5/40/700 : 1/			(*5)
-	AX81-S1	12/24VDC sink/source type	32 points	QX71	5/12VDC sink/source type	32 points		
	AX81-S3		32 points	QX82-S1	24VDC source type		1 module	_
	AX82	12/24VDC source type	64 points	QX72	5/12VDC sink/source type	64 points		
				QX82	24VDC source type			
	AX31 12	12/24VDC 12/24VAC	32 points	QX41	24VDC	20 mainta	1 module	(*5)
				QX71	12VDC	32 points	i module	(*5)
	AY20EU	100 to 240VAC		QY22	100-240VAC	16 points	1 module	(*5)
	AY40A	12/24VDC 0.3A independent						
	AY60	24VDC/(12/48V) 2A	16 points					
Output	AY60E	24VDG/(12/48V) 2A	16 points	QY68A	5-24VDC 2A independent	8 points	2 modules	(*E)
Output	AY60EP	12/24VDC 2A					2 modules	(*5)
	AY60S (-UL)	24/48VDC/(12V) 2A						
	AY15EU	240VAC 2A	24 points	QY10	240VAC 2A	16 points		
	AY82EP	12/24VDC source type	64 points	QY82P	12-24VDC source type	64 points	1 module	
	AX60 (-S1)							
Input	AX81-S2			s no applicable MELSEC-Q series module.				_
	AX81B		There is no					
Combined	A42XY							
input/output		l l / 7 5) l l f						

<sup>\*5:</sup> The universal conversion adapter (see 7-5) can be used for replacement.

2. The input/output modules shown in the table below can use the existing wiring as is. Be sure to verify that the MELSEC-Q series module specifications satisfy the specifications of connected devices and equipment.

Input/Output	MELSEC-A series input/output module model	MELSEC-Q series input/output module model	Input/Output	MELSEC-A series input/output module model	MELSEC-Q series input/output module model	
		QX42 (24VDC)		AY42(-S1/S3/S4) (*6)	QY42P	
	AX42	QX72 (12VDC)	Output	AY72	QY71 (*7)	
Input		QX41-S2 (24VDC) (*7)		AY82EP	QY81P (*7)	
-	AX42-S1	QX42-S1 (24VDC)	Combined	AH42	QH42P (24VDC input)	
	AX82	QX81-S2 (24VDC) (*7)	input/output		QX41Y41P (24VDC input)	

#### **For Analog Modules**

[1-slot type] (Applicable to Mitsubishi Electric Q series large type base units as well)

[1-310t type] (Applicable to Mitsubish Electric & Series large type base units as well)							
Input/	MELSEC-A series	MELSEC-Q series		Conversion ada	apter		
Output	module model	module model	Model	Shape		No. of	Page
Output	before replacement	after replacement	iviodei	MELSEC-A series	MELSEC-Q series	channels	
	A68AD (Voltage input)	Q68ADV			Terminal block	8 channels	
	A68AD (Current input)	Q68ADI	ERNT-AQT68AD	Terminal block (38 points)			1-15
Input	A68AD-S2 (Voltage input)	Q68ADV					
	A68AD-S2 (Current input)	Q68ADI					
	A68ADN (Voltage input)	Q68ADV	ERNT-AQT68ADN			8 channels	4.40
	A68ADN (Current input)	Q68ADI	ENNI-AQ100ADIN				1-16
	A62DA	Q62DAN	ERNT-AQT62DA	Terminal block	(18 points)	2 channels	4 47
	A62DA-S1	QOZDAN	ENNI-AQ102DA	(20 points)		2 Charmers	1-17
Output	A68DAV	Q68DAVN		Townsin at blook	1		
	A68DAI	COODAIN	ERNT-AQT68DA	RNT-AQT68DA Terminal block		8 channels	1-18
	A68DAI-S1	Q68DAIN		(38 points)			

#### [2-slot type] (Not applicable to Mitsubishi Electric Q series large type base units)

Input/	MELSEC-A series	MELSEC-Q series	Conversion adapter				
Output	module model	module model	Model	Sha	No. of	Page	
	before replacement	after replacement	IVIOGEI	MELSEC-A series	MELSEC-Q series	channels	
	A68AD (Voltage/Current mixed input)	Q64AD-GH × 2 modules	ERNT-AQT68AD-GH		 	8 channels	1-20
	A68AD-S2 (Voltage/Current mixed input)				i I		to
Input	A68ADN (Voltage/Current mixed input)	(*8)		Terminal block	Terminal block		1-21
	A616AD (Voltage input)	Q68ADV × 2 modules	ERNT-AQT616AD	(38 points)	(18 points) × 2	16 obonnolo	1-22
	A616AD (Current input)	Q68ADI × 2 modules	ENNI-AQIOIDAD			16 channels	1-22
Output	A616DAV	Q68DAVN × 2 modules	ERNT-AQT616DA			16 obonnolo	1 00
	A616DAI	Q68DAIN × 2 modules	ENNI-AGIOIODA			16 channels	1-23

<sup>\*8:</sup> In a case where A68AD, A68AD-S2 or A68ADN are connected to both voltage input and current input, replace the module with two Q64AD-GH modules capable of switching the voltage input and current input of each channel.

<sup>\*6:</sup> AY42-S4 requires a partial wiring change.
\*7: At the time of replacement, two modules are required.

## For High-Speed Counter Modules

[1-slot type] (Applicable to Mitsubishi Electric Q series large type base units as well)

Input/	MELSEC-A series	MELSEC-Q series		Conversion ada	apter		
Output	module model	module model Model	Shape		No. of	Page	
Output	before replacement	after replacement	iviodei	MELSEC-A series	MELSEC-Q series	channels	
loout	AD61	QD62-H01	EDNT ACTOR	Terminal block	Connector (40D)	O abannala	1-25
Input	AD61-S1	QD62-H02	ERNT-AQTD61	(38 points)	Connector (40P)	2 channels	1-26

# Base Adapter

MELSEC-A series module model before replacement	MELSEC-Q series module model after replacement	Base adapter model	Mountable conversion adapter support flange	Page	
A38B、A38HB、A38HBEU	Q312B	ERNT-AQB38	Conversion adapter support flanges ERNT-AQF12 and ERNT-AQF8		
A38B-UL、A38B-E	Q38B	ERNT-AQB38	Conversion adapter support flange ERNT-AQF8		
ACOD ACOD III	Q612B	ERNT-AQB68	Conversion adapter support flanges ERNT-AQF12 and ERNT-AQF8		
A68B, A68B-UL	Q68B	ERNT-AQB68	Conversion adapter support flange ERNT-AQF8		
A58B, A58B-UL	Q68B(*9)	ERNT-AQB58	Conversion adapter support flange ERNT-AQF8		
AGED AGED III AGED E	Q38B	ERNT-AQB35	Conversion adapter support flanges ERNT-AQF8 and ERNT-AQF5	1-27	
A35B、A35B-UL、A35B-E	Q35B	ERNT-AQB35	Conversion adapter support flange ERNT-AQF5	to	
ACED ACED III	Q68B	ERNT-AQB65	Conversion adapter support flanges ERNT-AQF8 and ERNT-AQF5	1-28	
A65B, A65B-UL	Q65B, Q55B	ERNT-AQB65	Conversion adapter support flange ERNT-AQF5		
A55B, A55B-UL	Q65B, Q55B	ERNT-AQB55	Conversion adapter support flange ERNT-AQF5		
A32B、A32B-UL、A32B-E	Q33B	ERNT-AQB32	Conversion adapter support flange ERNT-AQF3		
A62B	Q63B, Q52B	ERNT-AQB62	Conversion adapter support flange ERNT-AQF3		
A52B	Q52B	ERNT-AQB52	Conversion adapter support flange ERNT-AQF3		

<sup>\*9:</sup>The base unit after replacement requires a power supply module.

# **3** Conversion Adapter Support Flange

Conversion adapter support flange model	Description	Remarks	Page
ERNT-AQF12	12-slot conversion adapter support flange		
ERNT-AQF8	8-slot conversion adapter support flange	A conversion adapter support flange is always required	1-29
ERNT-AQF5	5-slot conversion adapter support flange	with conversion adapter use.	1-23
ERNT-AQF3	3-slot conversion adapter support flange		

# **Conversion Adapter**

#### **Specifications**

## For Input/Output Modules

1-slot type (Applicable to Mitsubishi Electric Q series large type base units as well)

#### 1) ERNT-AQTX10 Terminal block (20P)—Terminal block (18P)

.,		(,	
Conversion adapter model	MELSEC-A series module model	No. of input points	MELSEC-Q series module model
ERNT-AQTX10	AX10 AX10-UL	16 points	QX10
TB1	TB19 Empty	Terminal Signumber has   National Signumber has	TB1

[input module specification comparison chart]								
Model		MELSEC	-A series	MELSEC-Q series				
Specificatio	n	AX10	AX10-UL	QX10				
No. of inpu	ut points	16 points		16 points				
Isolation m	nethod	Photocoup	ler isolation	Photocoupler isolation				
Rated inpu	ıt voltogo	100 to 120VAC	110 to 120VAC	100 to 120VAC (+10/-15%)				
nateu Inpu	it voltage	50/60Hz	50/60Hz	50/60Hz (±3Hz)				
Rated inpu	ıt oluron	10mA	11mA (110VAC)	Approx. 8mA (100VAC, 60Hz)				
nateu IIIpt	it curren	(100VAC, 60Hz)	12mA (120VAC)	Approx. 7mA (100VAC, 50Hz)				
Rush curre	ent	300mA, maximum, within 0.3ms (132VAC)		200mA, maximum, within 1ms (at 132VAC)				
ON voltage	ON current	80VAC or more / 6mA or more		80VAC or more / 5mA or more (50Hz, 60Hz)				
OFF voltage	/ OFF current	40VAC or less	/ 4mA or less	30VAC or less / 1.7mA or less (50Hz, 60Hz)				
Input impe	dance	Approx. 10kΩ (60Hz),	Approx. 12kΩ (50Hz)	Approx. 12kΩ (60Hz), Approx. 15kΩ (50Hz)				
Response	$OFF {\rightarrow} ON$	15ms	or less	15ms or less (100VAC, 50Hz, 60Hz)				
time ON→OFF		25ms	or less	20ms or less (100VAC, 50Hz, 60Hz)				
Internal current consumption		55mA (TYP. all points ON)		50mA (TYP. all points ON)				
Wiring metho	d for common	16 points/common		16 points/common				
External in	nterface	20-point ter	minal block	18-point terminal block				

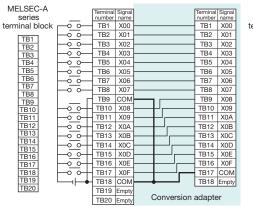
- 1. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- 2. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 2) ERNT-AQTX40 Terminal block (20P)-Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of input points	MELSEC-Q series module model
	AX40 AX40-UL		QX40 QX70 QX40-S1
ERNT-AQTX40	AX70 AX70-UL	16 points	QX70
	AX50 AX50-S1		QX50

#### [Input module specification comparison chart]

	Model	MELSEC	C-A series		MELSEC-Q series		
		AX40, AX40-UL		QX40	QX40-S1	QX70 (Positi	ve/Negative
Specifica	tion	(Sink/So	urce type)	(Positive common type)	(Positive common type)	common shared type	
No. of inp	ut points	16 p	oints	16 points	16 points	16 p	oints
Isolation n	nethod	Photocoup	ler isolation	Photocoupler isolation	Photocoupler isolation	Photocoup	ler isolation
Detection.		12VDC	24VDC	24VDC (+20/-15%, within	24VDC (+20/-15%, within	EV/DO	40)/00
Rated inpo	it voitage	12000	24VDC	a ripple rate of 5%)	a ripple rate of 5%)	5VDC	12VDC
Rated inpu	ut current	4mA	10mA	Approx. 4mA	Approx. 6mA	Approx. 1.2mA	Approx. 3.3mA
ON voltage	/ ON current	9.5VDC or mor	e / 3mA or more	19V or more / 3mA or more	19V or more / 4.0mA or more	3.5V or more	1mA or more
OFF voltage	/ OFF current	6VDC or less	/ 1.5mA or less	11V or less / 1.7mA or less	11V or less / 1.7mA or less	1V or less / 0	).1mA or less
Input resis	tance	Approx	k. 2.4kΩ	Approx. 5.6kΩ	Approx. 3.9kΩ	Approx	. 3.3kΩ
Response	OFF→ON	10ms	or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms	1/5/10/20/7	Oms or less
time ON→OFF		10ms	or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms	1/5/10/20/7	Oms or less
Internal current consumption		55mA (TYP.	all points ON)	50mA (TYP. all points ON)	60mA (TYP. all points ON)	55mA (TYP. all points ON	
Wiring method for common		8 points	/common	16 points/common	16 points/common	16 points/common	
External i	nterface	20-point te	rminal block	18-point terminal block	18-point terminal block	18-point ter	minal block



MELS se termina	ries
TB2	TB1
TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17

N	n	te	20

- 1. In a case where the number of points per common changes from eight (two circuits)
- to 16 and the terminal numbers TB9 and TB18 on the MELSEC-A series side are used separately, a wiring change is required.

  2. When replacing AX40/AX40-UL with QX40 or QX40-S1 and a rated input voltage of 12VDC is used, the voltage needs to be changed to 24VDC.
- When replacing AX40/AX40-UL with QX70 and a rated input voltage of 24VDC is used, the voltage needs to be changed to 5VDC or 12VDC.
- 4. When replacing AX70/AX70-UL with QX70 and a rated input voltage of 24VDC is used, the voltage needs to be changed to 5VDC or 12VDC.

  5. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement.
- Verify the specifications of the connected devices.

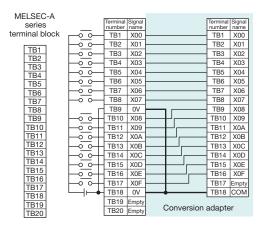
  6. For \_\_\_\_\_ areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

	Model	N	MELSEC-A series			-Q series
			AX70, AX70-UL	_	QX70 (Positive/Negative	
Specifica	tion	(;	Sink/Source typ	e)	common sl	hared type)
No. of inp	ut points		16 points		16 p	oints
Isolation n	nethod	Pho	tocoupler isola	tion	Photocoup	ler isolation
Rated inpo	ut voltage	5VDC	12VDC	24VDC	5VDC	12VDC
Date of Same		3.5mA (TYP)	2mA (TYP)	4.5mA (TYP)	A 4 O A	A 0 0 A
Rated inpo	ut current	5.5mA (MAX)	3mA (MAX)	6mA (MAX)	Approx. 1.2mA	Approx. 3.3mA
ONLyaltana	/ ON accomment	(SW ON) 3.5VDC or more / 1.0mA or more			3.5V or more / 1mA or more	
ON voitage	/ ON current	(SW OFF) 5VDC or more / 1.0mA or more				
055	/OFF	(SW ON) 1.1VDC or less / 0.2mA or less			1V or less / 0.1mA or less	
OFF voltage	/ OFF current	(SW OFF) 2VDC or less / 0.2mA or less				
Input resis	stance	(SW ON) Approx. 1.4kΩ, (SW OFF) Approx. 5.5kΩ			Approx. 3.3kΩ	
Response	OFF→ON		1.5ms or less		1/5/10/20/7	0ms or less
time	ON→OFF		3ms or less			0ms or less
Internal current consumption 55mA (TYP. all points ON)		s ON)	55mA (TYP. a	all points ON)		
Wiring metho	d for common	8	points/commo	n	16 points	/common
External i	nterface	20-	point terminal b	lock	18-point te	rminal block

Model		MELSEC	MELSEC-A series		
Specification		AX50 (Sink type)	AX50-S1 (Sink/Source type)	QX (DC Positiv common sl	e/Negative
No. of inpu	ut points	16 points	16 points	16 p	oints
Isolation m	nethod	Photocoupler isolation	Photocoupler isolation	Photocoup	ler isolation
Rated inpu	ut voltage	48VDC	48VDC	48VDC	48VAC
Rated inpu	ut current	4mA	4mA	4mA	
ON voltage	/ ON current	34VDC or more / 3mA or more	34VDC or more / 3mA or more	28V or more / 2.5mA or more	
OFF voltage	/ OFF current	10VDC or less / 1mA or less	10VDC or less / 1mA or less	10V or less / 1.0mA or less	
Input resis	tance	Approx. 11kΩ	Approx. 11kΩ	Approx. 11.2kΩ	
Response	OFF→ON	10ms or less	10ms or less	5ms or less	15ms or less
time	ON→OFF	10ms or less	10ms or less	20ms or less	20ms or less
Internal current consumption		55mA (TYP. all points ON)	55mA (TYP. all points ON)	50mA (TYP. all points ON)	
Wiring method for common		8 points/common	8 points/common	16 points/common	
External in	nterface	20-point terminal block	20-point terminal block	18-point ter	minal block

#### 3) ERNT-AQTX80 Terminal block (20P)→Terminal block (18P)

Conversion adapter MELSEC-A series model model		No. of input points	MELSEC-Q series module model
ERNT-AQTX80	AX80 AX80-UI	16 points	QX80



MELSEC-Q

#### [Input module specification comparison chart]

	Model	MELSEC-A series		MELSEC-Q series	
		AX80, AX80-UL		QX80	
Specificat	tion	(Source	e type)	(Negative common type)	
No. of inpu	t points	16 p	oints	16 points	
Isolation m	ethod	Photocoupl	ler isolation	Photocoupler isolation	
Rated inpu	t voltage	12VDC	24VDC	24VDC	
Rated inpu	t current	4mA	10mA	Approx. 4mA	
ON voltage	/ ON current	9.5VDC or more / 3mA or more		19V or more / 3mA or more	
OFF voltage	OFF current	6VDC or less / 1.5mA or less		11V or less / 1.7mA or less	
Input resist	tance	Approx. 2.4kΩ		Approx. 5.6kΩ	
Response	OFF→ON	10ms	or less	1/5/10/20/70ms or less	
time	ON→OFF	10ms	or less	1/5/10/20/70ms or less	
Internal cu	al current 55mA		50mA		
consumpti	consumption (TYP. all points ON)		(TYP. all points ON)		
Wiring method for common 8 points/common		common	16 points/common		
External in	nterface	20-point ter	minal block	18-point terminal block	

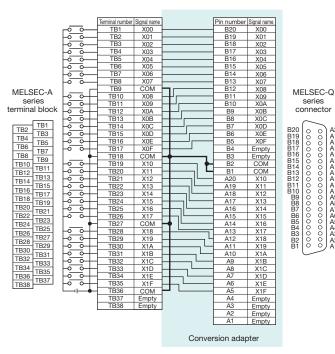
#### Notes

- 1. In a case where the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB18 on the MELSEC-A series side are used
- separately, a wiring change is required.

  2. When a rated input voltage of 12VDC is used, the voltage needs to be changed to 24VDC.
- For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the
- 4. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 4) ERNT-AQTX41 Terminal block (38P)→Connector (40P)

Conversion adapter model			MELSEC-Q series module model
	AX41		QX41
	AX41-UL		QX41-S2
	ANTI-OL		QX71
ERNT-AQTX41	AX31-S1	32 points	QX41
	AA31-31		QX41-S2
	AX41-S1		QX41-S1
	AX71		QX71



A19 A16 A17 A16 A17 A11 A10 A9 A7 A6 A6 A4 A3 A11

#### [Input module specification comparison chart]

	Model	MELSEC-A series MELSEC-Q series			MELSEC-Q series		
Specificat	tion	AX41, AX41-UL (Sink type)		QX41 (Positive common type)	QX41-S2 QX71 (Positive common type) QX71 (Positive common share		
No. of inp	ut points	32 p	oints	32 points	32 points	32 p	oints
Isolation r	nethod	Photocoup	ler isolation	Photocoupler isolation	Photocoupler isolation	Photocoup	ler isolation
Rated inpu	ut voltage	12VDC	24VDC	24VDC	24VDC	5VDC	12VDC
Rated inpu	ut current	4mA	10mA	Approx. 4mA	Approx. 6mA	Approx. 1.2mA	Approx. 3.3mA
ON voltag	е	9.5VDC or more		19VDC or more	15VDC or more 3.5V or more		or more
/ ON curre	ent	/ 3mA	or more	/ 3mA or more	/ 3mA or more	/ 1mA or more	
OFF volta	ge	6VDC	or less	11VDC or less	5VDC or less	1V or less	
/ OFF curi	rent	/ 1.5mA	or less	/ 1.7mA or less	/ 1.7mA or less / 0.1mA or less		A or less
Input resis	stance	Approx	. 2.4kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ	Approx	. 3.3kΩ
Response	OFF→ON	10ms	or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less	/5/10/20/70ms or less 1/5/10/20/70ms or le	
time	ON→OFF	10ms	or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less	1/5/10/20/	70ms or less
Internal cu	urrent	110	)mA	75mA	75mA 70r		mA
consumpt	consumption (T		oints ON)	(TYP. all points ON)	(TYP. all points ON) (TYP. all points		ooints ON)
Wiring method		8 points/	common/	32 points/common	32 points/common 32 points/cor		common/
External in	terface	38-point ter	minal block	40-pin connector	40-pin connector	40-pin connector	

	Model	MELSEC-A series	MELSEC	-Q series	
		AX31-S1	QX41	QX41-S2	
Specificat	ion	(Sink type)	(Positive common type)	(Positive common type)	
No. of inp	ut points	32 points	32 points	32 points	
Isolation r	nethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated inpu	ut voltage	24VDC	24VDC	24VDC	
Rated inpu	ut current	8.5mA	Approx. 4mA	Approx. 6mA	
ON voltag	е	16VDC or more	19VDC or more	15VDC or more	
/ ON curre	ent	/ 5mA or more	/ 3mA or more	/ 3mA or more	
OFF volta	ge	8VDC or less	11VDC or less	5VDC or less	
/ OFF curr	rent	/ 2mA or less	/ 1.7mA or less	/ 1.7mA or less	
Input resis	stance	Approx. 2.7kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ	
Response	OFF→ON	10ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less	
time	ON→OFF	10ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less	
Internal cu	urrent	110mA	75mA	75mA	
consumpt	ion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	
Wiring me	thod	22 points/samman	22 points/samman	20 nointe/common	
for comm	on	32 points/common	32 points/common	32 points/common	
External in	terface	38-point terminal block	40-pin connector	40-pin connector	

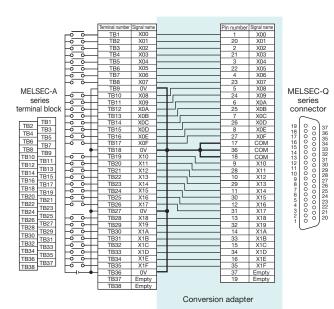
	Model	MELSEC	-A series	MELSEC-Q series			
		AX4	1-S1	QX41-S1			
Specificati	ion	(Sink	type)	(Positive common type)			
No. of inpo	ut points	32 p	oints	32 points			
Isolation n	nethod	Photocoup	er isolation	Photocoupler isolation			
Rated inpu	ut voltage	12VDC	24VDC	24VDC			
Rated inpu	ut current	4mA	10mA	Approx. 4mA			
ON voltage /	ON current	9.5VDC or more / 3mA or more		19V or more / 3mA or more			
OFF voltage /	OFF current	6VDC or less / 1.5mA or less		9.5V or less / 1.5mA or less			
Input resis	stance	Approx. 2.4kΩ		Approx. 5.6kΩ			
Response	OFF→ON	0.1ms or less		0.1/0.2/0.4/0.6/1ms			
time	ON→OFF	0.2ms	or less	0.1/0.2/0.4/0.6/1ms			
Internal cu	ırrent	110mA		75mA			
consumpt	ion	(TYP. all points ON)		(TYP. all points ON)			
Wiring method		0		20 into /			
for commo	on	8 points/	COMMON	32 points/common			
External in	nterface	38-point ter	minal block	40-pin connector			

	Model	M	ELSEC-A seri	es	MELSEC	-Q series	
			AX71		QX71 (Positi	ive/Negative	
Specificati	ion	(S	ink/Source typ	oe)	common sl	hared type)	
No. of inpu	ut points		32 points		32 p	oints	
Isolation n	nethod	Phot	ocoupler isola	ition	Photocoup	ler isolation	
Rated inpu	ut voltage	5VDC	12VDC	24VDC	5VDC	12VDC	
Data diam		3.5mA (TYP)	2mA (TYP)	4.5mA (TYP)	Approx.	Approx.	
Rated inpu	ut current	5.5mA (MAX)	3mA (MAX)	6mA (MAX)	1.2mA	3.3mA	
ON voltag	е	(SW ON) 3.5VDC or more / 1.0mA or more			3.5V or more / 1mAor more		
/ ON curre	ent	(SW OFF) 5VDC or more / 1.0mA or more					
OFF voltag	ge	(SW ON) 1.1VDC or less / 0.2mA or less			1V or less / 0.1mA or less		
/ OFF curr	ent	(SW OFF) 2VDC or less / 0.2mA or less			TV OF less / U. ITHA OF less		
Input resis	tance	(SW ON) Approx. 1.4kΩ, (SW OFF) Approx. 5.5kΩ			Approx. 3.3kΩ		
Response	OFF→ON	1.5ms or less			1/5/10/20/70ms or less		
time	ON→OFF		3ms or less		1/5/10/20/70ms or less		
Internal cu	Internal current		110mA			70mA	
consumption		(TYP. all points ON)			(TYP. all points ON)		
Wiring me	Wiring method		0 /		20 mainta	/	
for commo	on	8	points/commo	DT1	32 points/common		
External in	nterface	38-p	oint terminal b	lock	40-pin connector		

- 1. When replacing AX41/AX41-UL with QX41/QX41-S2/QX71, AX41-S1 with QX41-S1, or AX71 with QX71 in a case where the number of points per common changes from eight (four circuits) to 32 and the terminal numbers TB9, TB18, TB27, and TB36 on the MELSEC-A series side are used separately, a wiring change is required.
- 2. When replacing AX41/AX41-UL with QX41 or AX41-S1 with QX41-S1 and a rated input voltage of 12VDC is used, the voltage needs to be changed to 24VDC. 3. When replacing AX41/AX41-UL with QX71 and a rated input voltage of 24VDC is used, the voltage needs to be changed to 5VDC or 12VDC.
- 4. When replacing AX71 with QX71 and a rated input voltage of 24VDC is used, the voltage needs to be changed to 5VDC or 12VDC.
- 5. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices. 6. For Imareas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 5) ERNT-AQTX81 Terminal block (38P)→Connector (37P)

Conversion adapter model	MELSEC-A series module model	No. of input points	MELSEC-Q series module model
	AX81	00 ! t	QX81
ERNT-AQTX81	AX81-S1	32 points	QX81-S2



#### [Input module specification comparison chart]

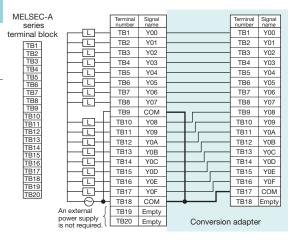
	Model		MELSEC	-A series		MELSEC	-Q series
Specificat	tion	AX (Source		AX81-S1 (Sink/Source type)		QX81 (Negative common type)	QX81-S2 (Negative common type)
No. of inp	ut points	32 p	oints	32 p	oints	32 points	32 points
Isolation r	nethod	Photocoupl	ler isolation	Photocoup	ler isolation	Photocoupler isolation	Photocoupler isolation
Rated inp	ut voltage	12VDC	24VDC	12VDC	24VDC	24VDC	24VDC
Rated inp	ut current	4mA	10mA	2.5mA	5mA	Approx. 4mA	Approx. 6mA
ON voltag	je	9.5VDC	or more	5.6VDC	or more	19VDC or more	15VDC or more
/ ON curre	ent	/ 3mA c	or more	/ 1.1mA or more / 3mA or more		/ 3mA or more	
OFF volta	ge	6VDC	or less	2.4VDC	or less	11VDC or less	5VDC or less
/ OFF cur	rent	/ 1.5mA	or less	/ 0.39m	A or less	/ 1.7mA or less	/ 1.7mA or less
Input resis	stance	Approx	. 2.4kΩ	Approx	. 4.8kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ
Response	OFF→ON	10ms	or less	10ms	or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less
time	ON→OFF	10ms	or less	10ms	or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less
Internal co	urrent	110	mA	105mA		75mA	75mA
consumpt	tion	(TYP. all p	oints ON)	(TYP. all points ON)		(TYP. all points ON)	(TYP. all points ON)
Wiring method	d for common	8 points/	common	8 points/	common/	32 points/common	32 points/common
External in	atorfooo	38-p	oint	38-p	ooint	37-pin	37-pin
External II	iteriace	termina	al block	termina	al block	D-sub connector	D-sub connector

#### Notes

- 1. When the number of points per common changes from eight (four circuits) to 32 and the terminal numbers TB9, TB18, TB27, and TB36 on the MELSEC-A series side are used
- separately, a wiring change is required. 2. When replacing AX81-S1 with QX81, only the source type is compatible.
- When a rated input voltage of 12VDC is used, the voltage needs to be changed to 24VDC.
   For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- 5. For \_\_\_\_areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 6) ERNT-AQTY10 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model
	AY10		
	AY11		
ERNT-AQTY10	AY11-UL	16 points	QY10
	AY11E		
	ΔV11EELL		



#### [Output module specification comparison chart]

[Output III	Couput module specification comparison chart						
	Model		MELSEC-Q series				
Specification		AY10	AY11, AY11-UL	AY11E	AY11EEU	QY10	
No. of outpu	ut points	16 points	16 points	16 points	16 points	16 points	
Isolation me	ethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Relay isolation	
Data d avvita	la i a a	24VDC, 2A/point (Resistance load)					
Rated switch	0	240VAC, 2A/point (COSΦ=1)	240VAC, 2A/point (COSΦ=1)	240VAC, 2A/point (COSΦ=1)	24VAC, 2A/point (COSΦ=1)	240VAC, 2A/point (COSΦ=1)	
voltage/curr	ent	8A/common	8A/common	8A/common	8A/common	8A/common	
Minimum swit	tching load	5VDC, 1mA					
Maximum swi	tching voltage	264VAC, 125VDC	264VAC, 125VDC	250VAC, 125VDC	49.9VAC, 74.9VDC	264VAC, 125VDC	
OFF leakage	e current	_	0.1mA (200VAC, 60Hz)	0.1mA (200VAC, 60Hz)	0.1mA (49.9VAC, 60Hz)	_	
Response	OFF→ON	10ms or less					
time	ON→OFF	12ms or less					
Surge suppr	ressor	No	Varistor (387 to 473V)	Varistor (387 to 473V)	Varistor (387 to 473V)	No	
Fuse		No	No	Yes	Yes	No	
Internal curren	t consumption	115mA (TYP. all points ON)	430mA (TYP. all points ON)				
Wiring method	d for common	8 points/common	8 points/common	8 points/common	8 points/common	16 points/common	
External inte	erface	20-point terminal block	20-point terminal block	20-point terminal block	20-point terminal block	18-point terminal block	

#### Notes

- 1. When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB18 on the MELSEC-A series side are used separately, a wiring change is required.
- is required.

  2. The external power supply connected to terminal numbers TB19 and TB20 on the MELSEC-A series side is not required.
- 3. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- 4. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 7) ERNT-AQTY22 Terminal block (20P)→Terminal block (18P)

,		DIOCK (ZUP)	· romma	01) 210010	<i>,</i> ,
Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC- module	-,	
ERNT-AQTY22	AY22	16 points	QY2	22	
TB3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16	Terminal   Signal   name   n	Conversion	Terminal Signal number name 1	TB2 TE TB4 TE TB6 TE TB10 TB TB12 TB	s block B1 B3 B5 B7 B9 B11 B13

#### Notes

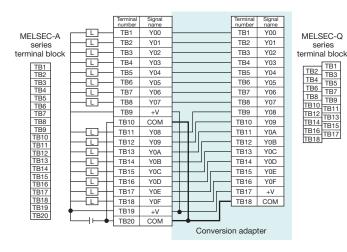
- When the number of points per common changes from eight (two circuits) to 16 (one circuit) and the terminal numbers TB9 and TB18 on the MELSEC-A series side are used separately, a wiring change is required.
- 2. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### [Output module specification comparison chart]

	Model	MELSEC-A series	MELSEC-Q series	
Specification		AY22	QY22	
No. of ou	tput points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Rated lo	ad voltage	100 to 240VAC, 50/60Hz±5%	100 to 240VAC (+10 / -15%)	
Maximum	load current	2A/point, 3.3A/common	0.6A/point, 4.8A/common	
Minimum voltage/o		24VAC 100mA, 100VAC 10mA, 240VAC 20mA	24VAC 100mA, 100VAC 25mA, 240VAC 25mA	
Maximum	rush current	40A 10ms or less, 15A 100ms or less	20A, one cycle or less	
OFF leaka	age current	1.5mA (120VAC, 60Hz) 3mA (240VAC, 60Hz)	1.5mA or less (at 120V, 60Hz) 3mA or less (at 240V, 60Hz)	
ON maxi		1.5VAC or less 1.8VAC or less 5VAC or less (0.2A or less)	1.5V or less	
Response	OFF→ON	1ms or less	1ms + 0.5Hz or less	
time	ON→OFF	0.5 cycles + 1ms or less	1ms + 0.5Hz or less (Rated load, resistance load)	
Surge su	ppressor	CR absorber (0.022μF + 47Ω) Varistor (387 to 473V)	CR absorber	
Fuse		Yes	No (Fuse installation recommended with external wiring)	
Internal current consumption		305mA (TYP. all points ON)	250mA (MAX. all points ON)	
Wiring m		8 points/common	16 points/common	
External	interface	20-point terminal block	18-point terminal block	

# 8) ERNT-AQTY40 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model
ERNT-AQTY40	AY40 AY40-UL		QY40P
	AY40P	16 points	
	AY70		OV70
	AY70-UL		QY70



#### [Output module specification comparison chart]

	Model	MELSEC-Q series		
	Model		MELSEC-A series	
0		AY40, AY40-UL	AY40P	QY40P
Specification	_	(Sink type)	(Sink type)	(Sink type)
No. of out	put points	16 points	16 points	16 points
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Rated loa	ıd voltage	12/24VDC	12/24VDC	12 to 24VDC
Maximum I	oad current	0.1A/point, 0.8A/common	0.1A/point, 0.8A/common	0.1A/point, 1.6A/common
Maximum r	ush current	0.4A	0.38A, 5ms or less	0.7A, 10ms or less
OFF leaka	ge current	0.1mA or less	0.1mA or less	0.1mA or less
ON maxir	201122	2.5VDC (0.1A),	2.5VDC (0.1A),	0.1VDC (TYP) 0.1A,
	1.75VDC (5mA). 1.75VDC (5mA).		0.1VDC (11F) 0.1A, 0.2VDC (MAX) 0.1A	
voltage d	rop	1.7VDC (1mA)	1.7VDC (1mA)	0.2VDC (IVIAX) 0.1A
Response	OFF→ON	2ms or less	2ms or less	1ms or less
time	ON→OFF	2ms or less	2ms or less	1ms or less
unie	UN→UFF	(Resistance load)	(Resistance load)	(Rated load, resistance load)
Internal c	urrent	115mA	115mA	65mA
consump	tion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Surge sup	opressor	Clamp diode	Clamp diode	Zener diode
Fuse		No	No	No
			Yes	Yes
Protection function		No	(thermal protection,	(thermal protection,
			short-circuit protection)	short-circuit protection)
Wiring me	ethod	9 points/sommon	9 nointe/common	16 nainta/aamman
for comm	ion	8 points/common	8 points/common	16 points/common
External i	nterface	20-point terminal block	20-point terminal block	18-point terminal block

_				
Model		MELSEC-A series	MELSEC-Q series	
		AY70, AY70-UL	QY70	
Specification	on _	(Sink type)	(Sink type)	
No. of out	put points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Rated loa	ad voltage	5/12VDC	5 to 12VDC	
Maximum I	oad current	16mA/point, 128mA/common	16mA/point, 256mA/common	
Maximum i	rush current	50mA, 10ms	40mA, 10ms or less	
OFF leaka	ge current	Voh: 3.5VDC (Vcc=DC5V, Ioh=0.4mA)	Voh: 3.5VDC (Vcc=5VDC, loh=0.4mA)	
ON maxii		Vol: 0.2VDC (IoL=16mA)	Vol: 0.3VDC	
Response	OFF→ON	1ms or less	0.5ms or less	
time	ON→OFF	1ms or less	0.5ms or less (Resistance load)	
Internal c		100mA (TYP. all points ON)	95mA (TYP. all points ON)	
Surge su	ppressor	No	No	
Fuse		No	Yes	
Wiring m		8 points/common	16 points/common	
External	interface	20-point terminal block	18-point terminal block	

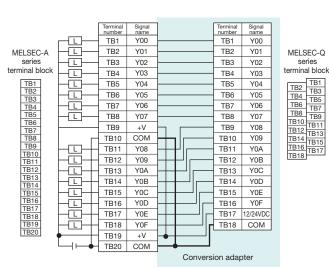
#### Notes

- When the number of points per common changes from eight (two circuits) to 16 (one circuit) and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-A series side are used separately, a wiring change is required.

  2. For detailed and general specifications not described in the output module specification
- comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 9) ERNT-AQTY50 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model
ERNT-AQTY50	AY50 AY50-UL	16 points	QY50



#### [Output module specification comparison chart]

Louthar	[Output module specimenton companison than ]				
Model		MELSEC-A series	MELSEC-Q series		
		AY50, AY50-UL	QY50		
Specificat	tion	(Sink type)	(Sink type)		
No. of out	put points	16 points	16 points		
Isolation r	nethod	Photocoupler isolation	Photocoupler isolation		
Rated loa	d voltage	12/24VDC	12 to 24VDC		
Maximum lo	oad current	0.5A/point, 2A/common	0.5A/point, 4A/common		
Maximum r	ush current	7A 10ms or less, 3.5A 100ms or less	4A, 10ms or less		
OFF leakag	ge current	0.1mA or less	0.1mA or less		
ON maxin	num	0.9VDC (TYP) 0.5A,	0.2VDC (TYP) 0.5A,		
voltage dr	ор	1.5VDC (MAX) 0.5A	0.3VDC (MAX) 0.5A		
Response	OFF→ON	2ms or less	1ms or less		
time	ON→OFF	2ms or less	1ms or less		
unie	UN→UFF	(resistance load)	(Rated load, resistance load)		
Internal consumpt		115mA (TYP. all points ON)	80mA (TYP. all points ON)		
Surge sup	pressor	Varistor (52 to 62V)	Zener diode		
Fuse		Yes	Yes		
Wiring method		8 points/common	16 points/common		
for comm	on	o points/common	16 points/common		
External in	nterface	20-point terminal block	18-point terminal block		
Notes					

#### Notes

TB4

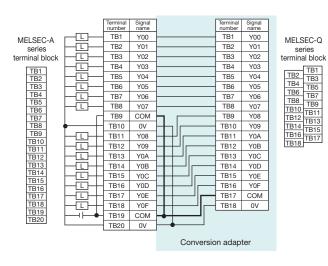
TB6 TB7

TB3

- 1. When the number of points per common changes from eight (two circuits) to 16 (one circuit) and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-A series side are used separately, a wiring change is required.
- For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices
- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

# 10) ERNT-AQTY80 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model
ERNT-AQTY80	AY80	16 points	QY80



#### [Output module specification comparison chart]

	Model	MELSEC-A series	MELSEC-Q series	
Specification		AY80 (Source type)	QY80 (Source type)	
No. of out	out points	16 points	16 points	
Isolation n	nethod	Photocoupler isolation	Photocoupler isolation	
Rated load	d voltage	12/24VDC	12 to 24VDC	
Maximum Io	ad current	0.5A/point, 2A/common	0.5A/point, 4A/common	
Maximum ru	ush current	7A 10ms or less, 3.5A 100ms or less	4A, 10ms or less	
OFF leakag	ge current	0.1mA or less	0.1mA or less	
ON maximum voltage drop		1.5VDC (MAX) 0.5A	0.2 VDC (TYP) 0.5A, 0.3 VDC (MAX) 0.5A	
Response	OFF→ON	2ms or less	1ms or less	
time	ON→OFF	2ms or less (Resistance load)	1ms or less (rated load, resistance load)	
Internal current consumption		115mA (TYP. all points ON)	80mA (TYP. all points ON)	
Surge suppressor		Varistor (52 to 62V)	Zener diode	
Fuse		Yes	Yes	
Wiring method for common		8 points/common	16 points/common	
External in	nterface	20-point terminal block	18-point terminal block	

#### Notes

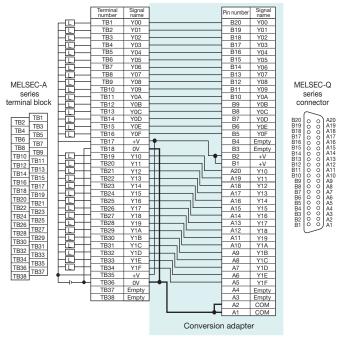
- 1. When the number of points per common changes from eight (two circuits) to 16 (one circuit) and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-A se
- side are used separately, a wiring change is required.

  2. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

  3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 11) ERNT-AQTY41 Terminal block (38P)→Connector (40P)

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model
ERNT-AQTY41	AY41 AY41-UL AY41P	32 points	QY41P
	AY71		QY71



#### Notes

- 1. When the number of points per common changes from 16 (two circuits) to 32 (one circuit) and the terminal numbers TB17 and TB35 as well as TB18 and TB36 on the MELSEC-A series side are used separately, a wiring change is required.
- 2. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices
- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

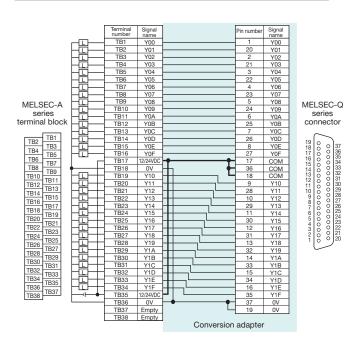
#### [Output module specification comparison chart]

Model		MELSEC	-A series	MELSEC-Q series	
		AY41, AY41-UL	AY41P	QY41P	
Specificati	on	(Sink type)	(Sink type)	(Sink type)	
No. of out	out points	32 points	32 points	32 points	
Isolation r	nethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated loa	d voltage	12/24VDC	12/24VDC	12 to 24VDC	
Maximum lo	oad current	0.1A/point, 1.6A/common	0.1A/point, 1.0A/common	0.1A/point, 2A/common	
Maximum r	ush current	0.4A	0.38A, 5ms or less	0.7A, 10ms or less	
OFF leakag	ge current	0.1mA or less	0.1mA or less	0.1mA or less	
ON maxin		2.5VDC (0.1A),	2.5VDC (0.1A),	0.1VDC (TYP) 0.1A,	
voltage di		1.75VDC (5mA),	1.75VDC (5mA), 1.75VDC (5mA),		
voitage di	ОР	1.7VDC (1mA)	1.7VDC (1mA)	0.2VDC (MAX) 0.1A	
D	OFF→ON	2ms or less	2ms or less	1ms or less	
Response time	ON OFF	2ms or less	2ms or less	1ms or less	
ume	ON→OFF	(Resistance load)	(Resistance load)	(Rated load, resistance load)	
Internal c	urrent	230mA	230mA	105mA	
consump	tion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	
Surge sup	pressor	Clamp diode	Clamp diode	Zener diode	
			No; With protection function	No; With protection function	
Fuse		No	(thermal protection,	(thermal protection,	
			short-circuit protection)	short-circuit protection)	
Wiring me	ethod	16 points/common	16 points/common	32 points/common	
for comm	on	TO POINTS/COMMINION	10 points/common	32 points/common	
External in	nterface	38-point terminal block	38-point terminal block	40-pin connector	

Model		MELSEC-A series	MELSEC-Q series	
Specification		AY71 (Sink type)	QY71 (Sink type)	
No. of out	put points	32 points	32 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Rated loa	d voltage	5/12VDC	5 to 12VDC	
Maximum I	oad current	16mA/point, 256mA/common (sink load)	16mA/point, 512A/common	
Maximum r	ush current	50mA 10ms	40mA, 10ms or less	
OFF lealing		Vон: 3.5VDC	Vон: 3.5VDC	
OFF leaka	ge current	(Vcc=5VDC, IoH=0.4mA)	(Vcc=5VDC, IoH=0.4mA)	
ON maximum voltage drop		Vol: 0.2VDC (lot=16mA)	Vol.: 0.3VDC	
Response	OFF→ON	1ms or less	0.5ms or less	
time	ON→OFF	1ms or less	0.5ms or less (Resistance load)	
Internal c		200mA (TYP. all points ON)	150mA (TYP. all points ON)	
Surge sup	opressor	No	No	
Fuse		No	Yes	
Wiring me	ethod	16 mainta/aamman	20 nainte/aannan	
for comm	non	16 points/common	32 points/common	
External i	nterface	38-point terminal block	40-pin connector	

# 12) ERNT-AQTY81 Terminal block (38P)→Connector (37P)

	Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model
	EDNT ACTVO	AY81	32 points	QY81P
ERNT-AQTY81	AV01ED	oz ponits	QTOIL	



#### [Output module specification comparison chart]

[Output module specification comparison chart]					
Model		MELSEC	-A series	MELSEC-Q series	
		AY81	AY81EP	QY81P	
Specifica	tion	(Source type)	(Source type)	(Source type)	
No. of out	put points	32 points	32 points	32 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated loa	ad voltage	12/24VDC	12/24VDC	12 to 24VDC	
Maximum I	oad current	0.5A/point, 4A/common	0.8A/point, 0.4A/point (60% ON, 55°C)	0.1A/point, 2A/common	
Maximum r	rush current	4A, 10ms or less	No restrictions (Short-circuit protection)	0.7A, 10ms or less	
OFF leaka	ge current	0.1mA or less	1mA or less	0.1mA or less	
ON maxii	mum	1.5VDC (MAX) 0.5A	1.1 V (TYP) 0.8A,	0.1VDC (TYP) 0.1A,	
voltage d	rop	1.5VDC (IVIAX) 0.5A	1.5V (MAX) 0.8A	0.2VDC (MAX) 0.1A	
Response	OFF→ON	2ms or less	0.5ms or less	1ms or less	
time	ON→OFF	2ms or less	1.5ms or less	1ms or less	
une	UN→UFF	(Resistance load)	1.01115 01 1655	(Rated load, resistance load)	
Internal c	urrent	230mA	230mA	95mA	
consump	tion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	
Surge su	ppressor	Varistor (52 to 62V)	Surge absorbing diode	Zener diode	
			No; With protection function	No; With protection function	
Fuse		No	(thermal protection,	(thermal protection,	
			short-circuit protection)	short-circuit protection)	
Wiring me		16 points/common	16 points/common	32 points/common	
External i	nterface	38-point terminal block	38-point terminal block	37-pin D-sub connector	

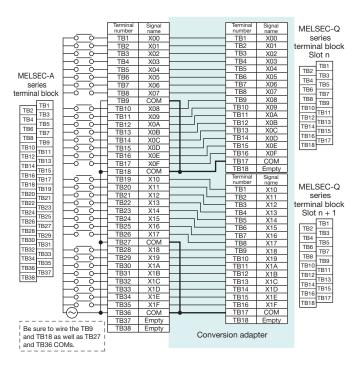
#### Notes

- 1. When the number of points per common changes from 16 (two circuits) to 32 (one circuit) and the terminal numbers TB17 and TB35 as well as TB18 and TB36 on the MELSEC-Á series side are used separately, a wiring change is required.
- When replacing with QY80 (two modules) using the ERNT-AQTY51 (page 1-14. Not applicable to Mitsubishi Electric Q series large type base units), a wiring change is not
- For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment

#### 2-slot type (Not applicable to Mitsubishi Electric Q series large type base units)

#### 1) ERNT-AQTX11 Terminal block (38P)→Terminal block (18P) × 2

Conversion adapter model	MELSEC-A series module model	No. of input points	MELSEC-Q series module model	No. of required modules	
	AX11	32 points	OX10	2 modules	
ERNT-AQTX11	AX11EU	32 points	QXIU	2 modules	



#### [Input module specification comparison chart]

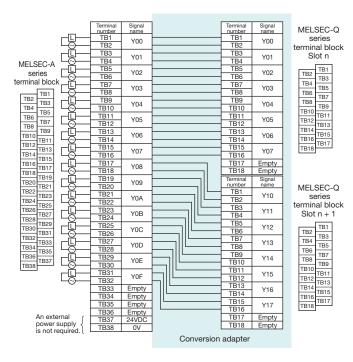
	Model	MELSEC-A series		MELSEC-Q series
Specification		AX11	AX11EU	QX10
No. of in	out points	32 p	oints	16 points
Isolation	method	Photocoup	ler isolation	Photocoupler isolation
Rated inp	ut voltage		120VAC 60Hz	100 to 120VDC (+10/-15%) 50/60Hz (±3Hz)
D		10mA	12mA	Approx. 8mA (100VAC, 60Hz)
Rated inp	ut current	(100VAC, 60Hz)	(120VAC, 60Hz)	Approx. 7mA (100VAC, 50Hz)
D l		300mA, maximum,	300mA, maximum,	200mA, maximum,
Rush cur	rent	within 0.3ms (at 132VAC)	within 1ms (at 132VAC)	within 1ms (at 132VAC)
ON volta	ge	80VAC or more	79VAC or more	80VAC or more / 5mA or more
/ ON curr	ent	/ 6mA or more	/ 6mA or more	(50Hz, 60Hz)
OFF volta	age	40VAC or less	30VAC or less / 1.7mA or less	
/ OFF cui	rrent	40VAC OI less	(50Hz, 60Hz)	
Input imp	edance	Approx. 10kΩ (60Hz), Approx. 12kΩ (50Hz)		Approx. 12kΩ (60Hz), Approx. 15kΩ (50Hz)
	OFF→ON	15ms or less	15ms or less	15ms or less
Response	OFF→ON	15ms or less	(100VAC, 60Hz)	(100VAC 50Hz, 60Hz)
time	ON→OFF	25ms or less	25ms or less	20ms or less
	ON→OII	231115 01 1655	(100VAC, 60Hz)	(100VAC 50Hz, 60Hz)
Internal c	urrent	110mA	150mA	50mA
consump	tion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Wiring m		32 points	16 points/common	
External	interface	38-point ter	minal block	18-point terminal block

#### Notes

- 1. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- 2. Be sure to wire the COMs of terminal numbers TB9and TB18 as well as TB27 and TB36 of the MELSEC-A series side.
- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

# 2) ERNT-AQTY10A Terminal block (38P) $\rightarrow$ Terminal block (18P) × 2

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model	No. of required modules
	AY10A AY10A-UL	40	0)/404	2 modules
ERNT-AQTY10A	AY11A	16 points	QY18A	2 modules
	AY11AFII			



#### [Output module specification comparison chart]

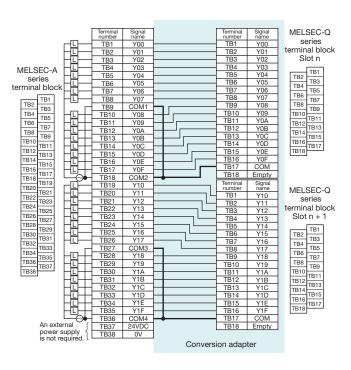
[Output module specification comparison chart]						
	Model	N	MELSEC-A series			
Specifica	ation	AY10A AY10A-UL	AY11A	AY11AEU	QY18A	
No. of our	tput points		16 points		8 points	
Isolation	method	Ph	otocoupler isolat	tion	Relay isolation	
				24VDC 2A/point	24VDC, 2A/point	
Rated sw	/itching	24VDC, 2A/point	(Resistance load)	(Resistance load)	(Resistance load)	
voltage/c	urrent	240VAC, 2A/p	oint (COSΦ=1)	24VAC 2A/point	240VAC, 2A/point	
				(COSΦ=1)	(COSΦ=1)	
Minimum load	switching	5VDC, 1mA			5VDC, 1mA	
Maximum	switching	264VAC, 125VDC		49.9VAC, 74.9VDC	264VAC, 125VDC	
OFF leak	age	-	0.1mA (200VAC, 60Hz)	0.1mA (49.9VAC, 60Hz)	-	
Response	OFF→ON		10ms or less		10ms or less	
time	ON→OFF		12ms or less		12ms or less	
Surge su	ppressor	No	Varistor (38	37 to 473V)	No	
Fuse		No			No	
Internal o	current	115mA (TYP. all points ON)			240mA	
consumption		11311	IA (TTF. all politi	5 (14)	(TYP. all points ON)	
Wiring m	ethod	No (All po	ints independent	t contacte)	No (All points	
for comn	non	140 (All po	into independen	i contacts)	independent contacts)	
External	interface	38-	point terminal bl	ock	18-point terminal block	

#### Notes

- An external power supply connected to terminal numbers TB37 and TB38 on the MELSEC-A series side is not required.
- 2. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- 3. QY18A is a 16-point occupied module. Thus, Y08-Y0F require a program change to Y10-Y17.
- 4. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

## 3) ERNT-AQTY13 Terminal block (38P) $\rightarrow$ Terminal block (18P) $\times$ 2

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model	No. of required modules
	AY13			
ERNT-AQTY13	AY13E	32 points	QY10	2 modules
	AY13EU			



#### [Output module specification comparison chart]

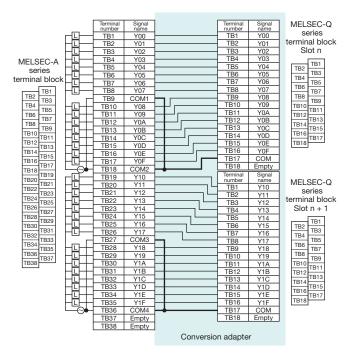
	Model	MELSEC-A series			MELSEC-Q series
Specifica	ition	AY13	AY13E	AY13EU	QY10
No. of out	put points		32 points		16 points
Isolation	method	Pho	otocoupler isolat	ion	Relay isolation
Rated switching voltage/current		24VDC, 2A/point (Resistance load) (Resistance load) (420VAC, 2A/point (COSФ=1) 5A/common (COSФ=1) 5A/common		24VDC, 2A/point (Resistance load) 240VAC, 2A/point (COSΦ=1) 8A/common	
Minimum switching load		5VDC, 1mA			5VDC, 1mA
Maximum switching load		264VAC, 125VDC	250VAC, 125VDC	49.9VAC, 74.9VDC	264VAC, 125VDC
OFF leaka	ge current	-			-
Response	OFF→ON	10ms or less			10ms or less
time	ON→OFF		12ms or less		12ms or less
Surge sup	opressor		No		No
Fuse		No	Yes	No	No
Internal current			230mA		430mA
consumption		Π)	YP. all points Of	N)	(TYP. all points ON)
Wiring me		8	8 points/common		
External i	nterface	38-	point terminal bl	ock	18-point terminal block

#### Notes

- In a case where the number of points per common changes from eight (four circuits) to 16 (one circuit) using two modules and the terminal numbers TB9 and TB18 as well as TB27 and TB36 on the MELSEC-A series side are used separately, a wiring change is required.
- 2. An external power supply connected to terminal numbers TB37 and TB38 on the MELSEC-A series side is not required.
- 3. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications diffre between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 4) ERNT-AQTY23 Terminal block (38P)→Terminal block (18P) × 2

Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-AQTY23	AY23	32 points	QY22	2 modules



#### [Output module specification comparison chart]

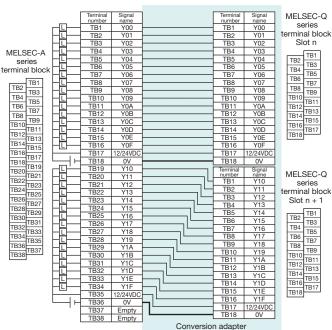
			-			
Model		MELSEC-A series	MELSEC-Q series			
Specification	on	AY23	QY22			
No. of outp	ut points	32 points	16 points			
Isolation me	ethod	Photocoupler isolation	Photocoupler isolation			
Rated load	voltage	100 to 240VAC 40 to 70Hz	100 to 240VAC (+10 / -15%)			
Maximum le	oad	0.6A/point, 2.4A/common	0.6A/point, 4.8A/common			
Minimum Ic	ad	24VAC 100mA, 100VAC 10mA,	24VAC 100mA, 100VAC 25mA,			
voltage/cur	rent	240VAC 10mA	240VAC 25mA			
Maximum r	ush	20A 10ms or less,	004			
current		8A 100ms or less	20A, one cycle or less			
05511		1.5mA (120VAC, 60Hz)	1.5mA or less (at 120V, 60Hz)			
OFF leakag	e current	3mA (240VAC, 60Hz)	3mA or less (at 240V, 60Hz)			
ON maximu		1.5VAC or less (100 to 600mA),				
		1.8VAC or less (50 to 100mA),	1.5V or less			
voltage dro	р	2VAC or less (10 to 50mA)				
D	OFF→ON	1ms	1ms + 0.5Hz or less			
Response	ON OFF	0.5	1ms + 0.5Hz or less			
time	ON→OFF	0.5 cycles + 1ms or less	(Rated load, resistance load)			
Surge supp	ressor	CR absorber	CR absorber			
F		V	No (Fuse installation recommended			
Fuse		Yes	with external wiring)			
Internal current	consumption	590mA (TYP. all points ON)	250mA (MAX all points ON)			
Wiring method	for common	8 points/common	16 points/common			
External in	terface	38-point terminal block	18-point terminal block			
			· · · · · · · · · · · · · · · · · · ·			

#### Notes

- In a case where the number of points per common changes from eight (four circuits) to 16 (one circuit) using two modules and the terminal numbers TB9 and TB18 as well as TB27 and TB36 on the MELSEC-A series side are used separately, a wiring change is required.
- 2. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

# 5) ERNT-AQTY51 Terminal block (38P)→Terminal block (18P) × 2

•		•	•	, ,
Conversion adapter model	MELSEC-A series module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-AQTY51	AY51 AY51-UL AY51-S1	32 points	QY50	2 modules
	AY81 AY81EP		QY80	



#### Notes

- 1. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the input module used. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. When the terminal number TB17/TB35 and TB18/TB36 on the MELSEC-A series side are not separated (are the shared common), it also can be replaced with the QY81P (one module) using the ERNT-AQTY81 (page 1-12). (A wiring change is not required.)

#### [Output module specification comparison chart]

	Model	MELSEC	MELSEC-Q series	
Specification	on	AY51, AY51-UL	AY51-S1	QY50
No. of outp	ut points	32 p	oints	16 points
Isolation m	ethod	Photocoup	ler isolation	Photocoupler isolation
Rated load	voltage	12/24	4VDC	12 to 24VDC
Maximum I current	oad	0.5A/point, 4A/common	0.3A/point, 2A/common (1A / fuse common)	0.5A/point, 4A/common
Maximum r	rush	4A, 10ms or less	3A, 10ms or less	4A, 10ms or less
OFF leakag	e current	0.1mA	0.1mA or less	
ON maximu	ım	0.9VDC (TYP) 0.5A,	1VDC (TYP) 0.3 A,	0.2VDC (TYP) 0.5A,
voltage dro	р	1.5VDC (MAX) 0.5A	1.5VDC (MAX) 0.3A	0.3VDC (MAX) 0.5A
Response	OFF→ON	2ms c	or less	1ms or less
time	ON→OFF	2ms c	or less	1ms or less
uiiie	011-011	(Resistar	nce load)	(Rated load, resistance load)
Surge supp	ressor	Varistor (52 to 62V)	Transistor built-in zener diode	Zener diode
Fuse		No	Yes	Yes
Internal current	concumption	230mA	310mA	80mA
internal current	CONSUMPLION	(TYP. all points ON)	(TYP. all points ON)	(TYP all points ON)
Wiring method	d for common	16 points	/common	16 points/common
External in	terface	38-point ter	18-point terminal block	

Model		MELSEC	-A series	MELSEC-Q series
		AY81	AY81EP	QY80
Specification	on 🔪	(Source type)	(Source type)	(Source type)
No. of outp	ut points	32 p	oints	16 points
Isolation m	ethod	Photocoup	ler isolation	Photocoupler isolation
Rated load	voltage	12/24	4VDC	12 to 24VDC
Maximum I current	oad	0.5A/point, 4A/common	0.8A/point, 0.4A/common (60%ON, 55°C)	0.5A/point, 4A/common
Maximum r	ush	4A, 10mA or less	No restriction (Short-circuit protection)	4A, 10ms or less
OFF leakag	e current	0.1mA or less	1mA or less	0.1mA or less
ON maximu	um	4 5 1/00 (144) 10 0 5 4	1.1V (TYP) 0.8A	0.2VDC (TYP) 0.5A
voltage dro	р	1.5VDC (MAX) 0.5A	1.5V (MAX) 0.8A	0.3VDC (MAX) 0.5A
Response	OFF→ON	2ms or less	0.5ms or less	1ms or less
time	ON→OFF	2ms or less	1.5ms or less	1ms or less
_		(Resistance Load)		(Rated load, resistance load)
Surge supp	ressor	Varistor (52 to 62V)	Surge absorbing diode	Zener diode
			No; With protection circuit	Yes
Fuse		No	(thermal protection,	[6.7A (not replaceable),
			short-circuit protection)	fuse breaking capacity 50A]
Internal current	t consumption	230mA (TYP.	all points ON)	80mA (TYP all points ON)
Wiring method	d for common	16 points	/common	16 points/common
External interface		38-point ter	18-point terminal block	

# For Analog Modules

1-slot type (Applicable to Mitsubishi Electric Q series large type base units as well)

#### 1) ERNT-AQT68AD Terminal block (38P)—Terminal block (18P)

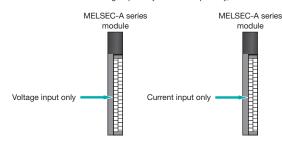
Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model
	A68AD (Voltage input)		Q68ADV
EDNIT ACTOOAD	A68AD (Current input)	0 - 1 1-	Q68ADI
ERNT-AQT68AD	A68AD-S2 (Voltage input)	8 channels	Q68ADV
	A68AD-S2 (Current input)		Q68ADI

#### CH1 V+/I+ V-/I-CH2 V+/I+ V-/I-CH3 V+/I+ V-/I-V-/I-V-/I-V-/I-V-/I-TEST Empty TEST Empty MELSEC-A V+ I+ COM FG TB6 TB7 TB8 TB9 series terminal block TB1 V+ TB2 TB3 TB10 TB11 CH6 V+/I+ TB12 TB13 CH7 V+/I+ TB14 TB15 CH8 V+/I+ TB16 CH8 V+/ITB17 A.G. TB4 TB5 TB6 TB9 TB10 TB11 TB12 FG TB13 TB14 TB15 V+ TB16 TB18 TB19 TB17 TB18 COM FG TB20 TB20 TB21 TB22 TB23 TB24 TB25 V+ I+ COM TB21 TR22 TB24 TB25 TB26 TB27 FG V+ TB28 TB29 TB30 I+ COM TB31 TB32 TB33 FG TB34 V+ I+ COM FG TB36 TB37 TB31 TB32 Voltage input and TB33 TB34 V+ current input cannot be used together. If a mixed voltage and current input is used, use сом FG Empty ERNT-AQT68AD-GH A.G Conversion adapter

# MELSEC-Q terminal block

TB1 TB3 TB4 TR5 TB6 TB7 TB8 TB9 TB10 TB13 TB14 TB16 TB17

1. If the module is used with voltage input only or current input only, use ERNT-AQT68AD.



For Q68ADV/Q68ADI analog input, voltage input and current input cannot be used together in a single module. If the module is used with both voltage and current inputs together, use **ERNT-AQT68AD-GH**.

- 2. Q68ADV/Q68ADI does not have an offset/gain setting terminal. For offset/gain setting, refer to the Q68ADV/Q68ADI user's manual
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [Specification comparison chart]

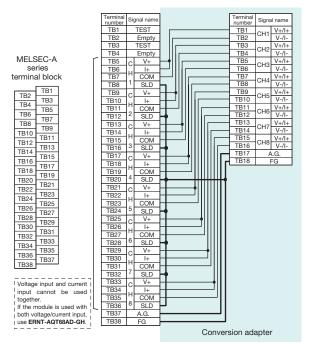
Specificati	on comparison c	_											
	Model				MELSEC-Q series								
Specification		A68AD, A68AD-S2			Q68ADI Q68ADI								
		-10 to 0											
Analog input	Voltage		re version K or later: $1M\Omega$ ,		-10 to 0 to 10VDC (Input resistance: 1MΩ)								
7 tridiog iripat			J or before: 30kΩ)										
	Current	· · ·	resistance 250 Ω)			-				20mA DC (In	out resi	stance	: 250Ω)
Digital output		ACPU: 16-bit signed b	oinary (-2048 to +2047)						ned binary				
Digital output	•	K2ACPU: 16-bit siç	gned binary (±2047)	1)	Normal resolution r								
		Analog input	Digital output	Δ,	nalog input range			olution m			n resolu		
		+10V	+2000	A	nalog input range	Digital outpu	t value	Maximu	m resolution	Digital output	t value	Maxim	um resolutior
I/O characteri	ietice	+5V or +20mA	+1000		0 to 10V			2	.5mV	0 to 1600	00	0	.625mV
i/O characteri	131103	0V or +4mA	±0	Voltage	0 to 5V	0 to 400	00	1.3	25mV	0 to 1200	าก	0	.416mV
		-5V or -12mA	-1000	洁	1 to 5V			1.	.0mV			0	.333mV
		-10V	-2000	J>		-4000 to 4	000		.5mV	-16000 to 1			.625mV
					User range setting	4000 10 4			375mV	-12000 to 1	2000		.333mV
Maximum res	solution	_	nV (1/2000)	Current	0 to 20mA	0 to 400	00		5μΑ	0 to 12000		1.66µA	
Waxiiriairi 100	oldtioli	Current: 20	μΑ (1/1000)	l E	4 to 20mA				4μA				1.33µA
				0	User range setting	-4000 to 4			37μΑ	-12000 to 1			1.33µA
								olution m		Ū		lution mode	
				A	nalog input range		100000000000000000000000000000000000000		Ambient	Ambient tempe			Ambient
				,	naiog inparrango	With temperature	1 '			With temperature			temperature
					T	drift correction	drift co	rrection	25±5°C	drift correction	drift co		25±5°C
					0 to 10V					±0.3%	±0.		±0.1%
Overall accura	acv	±1.	1.0%		-10 to 10V					(±48 digits)	(±64 c	digits)	(±16 digits)
	,			Voltage	0 to 5V								
				>		±0.3%		4%	±0.1%				
					User range setting	(±12 digits)	(±16	digits)	(±4 digits)	±0.3%	±0.		±0.1%
				ent	0 to 20mA					(±36 digits)	(±48 d	digits)	(±12 digits
				Current	4 to 20mA								
				-	Tooci range setting	us regardless of the number of channels used when temperature of						<u></u>	
	nversion speed		channel	80	uµs/channel (Add 160	uus regardiess	or the nu			a wnen temper	ature dri	π corre	ction is used.)
Absolute max	1 111191		5V )mA	-					15V 0mA				
input	Current		*****	-					UMA els/module				
No. of analog		8 channe	ls/module	+				o charine	els/IIIOuule				
	n input terminal and nmable controller power supply	Photocoup	ler isolation	Photocoupler isolation									
Betwe	een channels		solated						solated				
No. of occupi			oints						ooints				
Connected te	erminal block		rminal block	18-point terminal block									
Current consu	umption		n K or later: 0.39A	0.64A									
Current consumption		Hardware version	U.04A										

#### Program precautions

- 1) With A68AD/A68AD-S2 and Q68ADV/Q68ADI, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) Q68ADV/Q68ADI has a faster conversion speed than A68AD/A68AD-S2. As a result, the possibility exists that noise not introduced in A68AD/A68AD-S2 will be introduced as analog signals in Q68ADV/Q68ADI. In such a case, use an averaging processing function to remove the impact of the noise.

#### 2) ERNT-AQT68ADN Terminal block (38P)→Terminal block (18P)

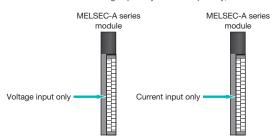
Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model		
	A68ADN (Voltage input)	O abannala	Q68ADV		
ERNT-AQT68ADN	A68ADN (Current input)	8 channels	Q68ADI		



MELSEC-Q series terminal block

	TB1
TB2	TB3
TB4	TB5
TB6	TB7
TB8	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17
1010	

1. If the module is used with voltage input only or current input only, use ERNT-AQT68ADN.



For Q68ADV/Q68ADI analog input, voltage input and current input cannot be used together in a single module. If the module uses both voltage and current inputs together, use ERNT-AQT68AD-GH.

- 2. Q68ADV/A68ADI does not have an offset/gain setting terminal. For offset/gain setting, refer to the Q68ADV/A68ADI user's manual.
- For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (LargeType) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected

#### [Specification comparison chart]

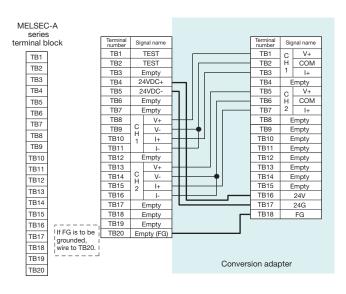
Lobounio	Jatioi	i comparison c		1050 4 -							MEL 050					
Model			MELSEC-A series				MELSEC-Q series									
Specificat		Valtaria	40 +- 0 +- 40\/	A68ADN		4140)		Q68ADI Q68ADI								
Analog in	nut ⊢	Voltage	-10 to 0 to 10VDC (Input resistance: 1MΩ) -20 to 0 to 20mA (Input resistance: 250MΩ)				-10 to 10VDC (Input resistance: 1MΩ) –  0 to 20mA DC (Input resistance: 250Ω)						0500)			
		Current		· ·		50MΩ)			_			0 to	20mA DC (Inp	out resis	tance:	250Ω)
Digital out	tput		16-b When set to When set to When set to	1/8000, -8	1096 to 409 3192 to 819	91	1)	16-bit signed binary (Normal resolution mode: -4096 to 4095, High resolution mode: -12288 to 12287, -16384 to 1638						4 to 16383)		
			WHICH GOT TO		tal output v				Norm	nal resol	ution mo	nde	High	resoluti	ion mo	nde
					mA gain and 0		Aı	nalog input range					Digital output			
			Analog input		When set			0 to 10V				5mV	0 to 1600			625mV
				to 1/4000	to 1/8000	to 1/12000	ge	0 to 5V	0 to 400	00	1.2	:5mV	0 to 1200	n	0.	416mV
I/O charac	cterist	ics	10V	4000	8000	12000	Voltage	1 to 5V			1.0	0mV	0 10 1200	,,	0.	333mV
			5V or 20mA	2000	4000	6000	>	-10 to 10V	-4000 to 4	000	2.	5mV	-16000 to 1	6000	0.	625mV
			0V or 20mA	0	0	0		User range setting	-4000 10 4	,000	0.37	75mV	-12000 to 1	2000	0.	333mV
			-5V or -20mA	-2000	-4000	-6000	Ħ	0 to 20mA	0 to 400	no	5	μA	0 to 1200	n	1	.66μΑ
			-10V	-4000	-8000	-12000	Current	4 to 20mA	0 10 400	,0	4	μA	0 10 1200	,,,	1	.33μΑ
				When set	When set	When set	O	User range setting	-4000 to 4	000	1.3	37μΑ	-12000 to 1	2000	1	.33μΑ
Maximum	resol	ution			to 1/8000	to 1/12000										
Maximani	110001	ation	Voltage input	2.5mV	1.25mV	0.83mV										
			Current input	10µA	5µA	3.33µA										
							Normal resolution mode High resolution mo									
						Aı	nalog input range	Ambient tempe			Ambient	Ambient tempe			Ambient	
								With temperature					perature No temperature			
								drift correction	drift corr	rection	25±5°C		drift corre		25±5°C	
							0 to 10V					±0.3%	±0.4		±0.1%	
Overall ac	ccurac	y		±1.0%			age	-10 to 10V	-				(±48 digits)	(±64 di	gits)	(±16 digits)
		•					Voltage	0 to 5V				0.40/				
							>	1 to 5V	±0.3%	±0.4		±0.1%	0.00/	. 0. 4	,	±0.1%
							_	User range setting	(±12 digits)	(±16 d	ligits) (	±4 digits)	±0.3%	±0.4		
							Current	0 to 20mA 4 to 20mA	-				(±36 digits)	(±48 di	gits)	(±12 digits)
							Sur	User range setting	-							
Mavimum	conv	ersion speed	2	0ms/chan	nel			us/channel (Add 160	lus renardless (	of the nur	mher of c	hannels use	d when temner	ature drift	t corre	rtion is used )
Absolute i				±15V			00	po, c. idillioi y idd 100	po . ogai ai ooo (	o. uno mui		5V	aion tomper	ataro alli	. 501160	J
input		Current		±30mA								)mA				
	alog in	put points	8 ch	nannels/m	odule					8		ls/module				
		n input terminal														
Isolation and programmable controller method power supply		grammable controller	Photo	ocoupler is	olation					Ph	otocoup	ler isolation	า			
			•							·						
E	Betwe	en channels	1	Non-isolate	ed						Non-is	solated				
No. of occ	cupiec	points		32 points	S		16 points									
Connecte	d term	ninal block	38-pc	int termina	al block					18-	-point ter	rminal bloc	k			
Current consumption 0.4A				0.4A			0.64A									

#### Program precautions

- 1) With A68ADN and Q68ADV/Q68ADI, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) Q68ADV/Q68ADI has a faster conversion speed than A68ADN, resulting in the possibility that noise not introduced in A68ADN will be introduced as analog signals in Q68ADV/Q68ADI. In such a case, use an averaging processing function to remove the impact of the noise.

#### 3) ERNT-AQT62DA Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model
ERNT-AQT62DA	A62DA	2 channels	Q62DAN
	A62DA-S1		



MELSEC-Q

e	emina bioc					
		TB1				
	TB2	TB3				
	TB4	163				
	TB6	TB5				
		TB7				
	TB8	TB9				
	TB10					
	TB12	TB11				
	TB14	TB13				
		TB15				
	TB16					
	TB18	TB17				
1		l				

All If you want to ground the FG terminal (terminal number TB18) on the Q62DAN side, perform grounding using terminal number TB20 on the MELSEC-A series side.

2	×	$\sim$
	TB17	Empty
	TB18	Empty
Use if you want to ground	TB19	Empty
the FG terminal.	TB20	Empty (FG)

- 2. Q62DAN does not have an offset/gain setting terminal. For offset/gain
- setting, refer to the Q62DAN user's manual.

  3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (Large -Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

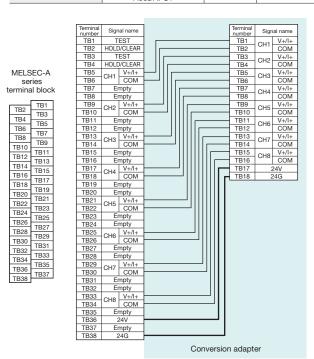
#### [Specification comparison chart]

	Model			MEL	SEC-A series	i					MELSEC-Q series					
Specification		A	62DA			A	62DA-S	1				Q62DAN				
Digital input		(Voltage:	igned binar -2000 to 20 -1000 to 10	00,	16-bit signed binary (0 to 4000)				16-bit signed binary (Normal resolution mode: -4096 to 4095, High resolution mode: -12288 to 12287, -16384 to 16383)							
	\/alkana	-10 to	0 to 10VDC	;		0 t	o 10VD	С						-10 to 10VDC		
Analog output	Voltage	(External load resist	ance value: 50	00Ω to 1MΩ)	(External lo	oad resist	ance va	lue: 500	0Ω to 1	ΙΜΩ)		(E	xternal load re	esistance value	: 1KΩ to 1MΩ	2)
Arialog output	Current	4 to	20mA DC			4 to	20mA	DC					(	0 to 20mA DC		
	Current	(External load resis	tance value:	0Ω to 600Ω)	(External le	oad resis	stance v	alue: 0	Ω to 6	00Ω)		(E	xternal load r	esistance value	e: 0Ω to 600Ω)	)
		Digital input	Analog	output	Output range	Digita	l input	An	alog o	utput		Analog		solution mode		lution mode
		Digital input	Voltage	Current	0 to 10V	40	00		10V	′	OL	utput range	Digital input value	Maximum resolution	Digital input value	Maximum resolution
		2000	10V	-	0 10 100	(	)		0V			0 to 5V	0 to 4000	1.25mV	0 to 12000	0.416mV
I/O characteristi	ics	1000	5V	20mA	0 to 5V		00	5\	V or 20	0mA	اہا	1 to 5V	0 10 4000	1.0mV		0.333mV
		0	0V	4mA	0 to 20mA	(	)	0	)V or 0	lmA	Voltage	-10 to 10V		2.5mV	-16000 to	0.625mV
		-1000	-5V	-12mA	1 to 5V	40	00	5\	V or 20	0mA	탏	-10 10 100	-4000 to	2.5111	16000	0.023111
		-2000	-10V	_	4 to 20mA		)	1	V or 4	mA		User range	4000	0.75mV	-12000 to	0.333mV
					Voltage	e 1 to 5	V :1	mV (1/	4000)			setting		0.751117	12000	0.0001117
		Voltage:	5m\/ (1/200	10)	0 to 5V : 1.25mV (1/4000)			اپا	0 to 20mA	0 to 4000	5µA	0 to 12000	1.66µA			
Maximum resolu	ution	Voltage: 5mV (1/2000) Current: 20µA (1/1000)		0 to 10V : 2.5mV (1/4000)			Surrent	4 to 20mA	0 10 4000	4µA	0 10 12000	1.33µA				
	Current. 20µA (1/1000) Curre		Curren	t 4 to 2	0mA: 4	μΑ (1/4	4000)		l in				0.83µA			
						0 to 20mA: 5μA (1/4000)				setting	4000	1.0μ/τ	12000	0.000		
Overall accuracy	y	±	:1.0%		Output 1 to 0 to 0 to 4 to 0 to 1 to 10 to 20mA 20mA 20mA 25°C ±25 ±25 ±50 ±0.1 ±0.1 ±0.1 to 10 to 5°C ±50 ±100 ±0.2 ±0.2 ±0.2				At an ambient temperature of 25±5°C, within ±0.1% (Voltage: ±10mV, Current: ±20µA)  At an ambient temperature of 0 to 55°C, within ±0.3%							
					(within ±1%)				mA	mA			(Voltage: :	±30mV, Current	: ±60µA)	
Maximum conve	ersion	Within 15r	ns / 2 chan	nels		Vithin 15				1110						
speed			or 1 channe			(Same	for 1 ch	annel)						80µs/channel		
Absolute	Voltage		±12V	,			to 12V		-					±12V		
maximum outpu	ut Current	2	28mA			0	to 28m	A						21mA		
No. of analog or	utput points	2 chan	nels/module	Э		2 char	nels/m	odule					2 c	hannels/modul	le	
Between output and programm power supply Between chann Between extern	ut terminal nable controller	Photocol	upler isolati	on	Photocoupler isolation		elation Photocoupler isolation									
Between chann	iels	Non	-isolated		Non-isolated					Non-isolated						
Between extern and analog outp	nal power supply put		-		-				Trar	nsformer isolati	on					
No. of occupied	points	32	points		32 points					16 points						
Connected term	ninal block	20-point	terminal blo	ock	:	20-point	termin	al bloc	k				18-р	oint terminal bl	ock	
Current consum	nption	(	0.60A				0.60A							0.33A		
External	Voltage	21.6 t	o 26.4VDC			21.6	to 26.4	VDC					24V	DC +20%, -15	%	
power supply	Current		0.35A				0.35A				0.15A					

• Program precautions
With A62DA/A62DA-S1 and Q62DAN, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

#### 4) ERNT-AQT68DA Terminal block (38P)→Terminal block (18P)

Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model	
	A68DAV		Q68DAVN	
ERNT-AQT68DA	A68DAI	8 channels	OCODAIN	
	A68DAI-S1	1	Q68DAIN	



MELSEC-Q series erminal block

termina	al bloc
TDO	TB1
TB2 TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17
1818	

#### Notes

- 1. If you want to ground FG to Q68DAVN/Q68DAIN, perform grounding from the FG terminal of Q68DAVN/Q68DAIN.
- 2. Q68DAVN/Q68DAIN does not have an offset/gain setting terminal or analog output hold/clear setting terminal. Analog output hold/clear setting needs to be performed using Q68DAVN/Q68DAIN intelligent function module switch settings. For offset/gain analog output hold/clear setting, refer to the Q68DAVN/A68DAIN user's manual.
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [Specification comparison chart]

Maximum conversion speed         Within 40ms / 8 channels (Same for 1 channel)         (Voltage: ±30mV)	MΩ) on mode Maximum resolution 0.416mV 0.333mV 0.625mV					
Digital input   16-bit signed binary	MΩ) on mode Maximum resolution 0.416mV 0.333mV 0.625mV					
Digital input   C-4000 to 4000, -8000 to 8000, -12000 to 12000)   C-4000 to 4000, -8000 to 8000, -12000 to 12000)   C-4000 to 4000, -8000 to 8000, -12000 to 12000   C-10 to 10VDC (External load resistance value: 1KΩ to 10	MΩ) on mode Maximum resolution 0.416mV 0.333mV 0.625mV					
Digital value resolution	on mode Maximum resolution 0.416mV 0.333mV 0.625mV					
Vo characteristics	Maximum resolution 0.416mV 0.333mV 0.625mV					
1/4000	resolution 0.416mV 0.333mV 0.625mV					
Maximum conversion speed   Maximum conversio	0.416mV 0.333mV 0.625mV					
Digrial input value	0.333mV 0.625mV					
input value   0	0.625mV					
When the offset value is set to 0V and the gain value is set to 10V         setting         0.75mV         -12000 to 1200           Maximum resolution         2.5mV (1/4000)         1.25mV (1/8000)         4.25mV (1/8000)         4.25mV (1/2000)         At an ambient temperature of 25±5°C, within ±0.1 (Voltage: ±10mV)         4.25mV (1/2000)         4.2						
When the offset value is set to 0V and the gain value is set to 10V         setting         0.75mV         -12000 to 1200           Maximum resolution         2.5mV (1/4000)         1.25mV (1/8000)         4.25mV (1/8000)         4.25mV (1/2000)         At an ambient temperature of 25±5°C, within ±0.1 (Voltage: ±10mV)         4.25mV (1/2000)         4.2						
When the offset value is set to 0V and the gain value is set to 10V         setting         Maximum           Maximum resolution         2.5mV (1/4000)         1.25mV (1/8000)           0.83mV (1/12000)         At an ambient temperature of 25±5°C, within ±0.1 (Voltage: ±10mV)           Overall accuracy         ±1.0%         At an ambient temperature of 0 to 55°C, within ±0.1 (Voltage: ±30mV)           Maximum conversion speed         Within 40ms / 8 channels (Same for 1 channel)         80µs/channel	0.333mV					
Maximum resolution         1.25mV (1/8000) 0.83mV (1/12000)         At an ambient temperature of 25±5°C, within ±0.1 (Voltage: ±10mV) At an ambient temperature of 0 to 55°C, within ±0.1 (Voltage: ±30mV)           Maximum conversion speed         Within 40ms / 8 channels (Same for 1 channel)         80μs/channel	0.0001111					
Overall accuracy         ±1.0%         At an ambient temperature of 25±5°C, within ±0.1 (Voltage: ±10mV)           Maximum conversion speed         Within 40ms / 8 channels (Same for 1 channel)         80μs/channel						
Overall accuracy     ±1.0%     At an ambient temperature of 25±5°C, within ±0.1 (Voltage: ±10mV)       At an ambient temperature of 0 to 55°C, within ±0.1 (Voltage: ±30mV)       Maximum conversion speed     Within 40ms / 8 channels (Same for 1 channel)     80µs/channel						
Overall accuracy ±1.0% (Voltage: ±10mV) At an ambient temperature of 0 to 55°C, within ±0. (Voltage: ±30mV)  Maximum conversion speed (Same for 1 channel)  80μs/channel						
Maximum conversion speed (Same for 1 channel) 80μs/channel	(Voltage: ±10mV) At an ambient temperature of 0 to 55°C, within ±0.3%					
Absolute maximum output Vellege 10 to 10V	80μs/channel					
Absolute maximum output   voltage   -12 to 12 v ±12 v	±12V					
No. of analog output points 8 channels/module 8 channels/module	8 channels/module					
Between output terminal and programmable controller power supply  Between channels  Non-isolated  Transformer isolation	Photocoupler isolation					
5 Between channels Non-isolated Non-isolated	Non-isolated					
Between external power supply and analog output — Transformer isolation	Transformer isolation					
No. of occupied points 32 points 16 points						
Connected terminal block 38-point terminal block 18-point terminal block						
Current consumption 0.15A 0.38A						
External Voltage 21.6 to 26.4 VDC 24VDC +20%, -15%						
power supply Current 0.2A 0.2A						

	Model		MELSEC-A series						MELSEC-Q series				
Specificat	tion			A68DAI (-S1)			Q68DAIN						
Digital inp	out	16-bit signed binary (0 to 4000, 0 to 8000, 0 to 12000)					16-bit signed binary (Normal resolution mode: -4096 to 4095, High resolution mode: -12288 to 12287, -16384 to 16383)						
Analog ou	ıtput	0 t	o 20mA DC (Ex	ternal load resis	stance: 0Ω to 60	00Ω)		0 to 20m	A DC (Externa	l load resistanc	e value: 0Ω to	600Ω)	
			Dig	ital value resolu	ıtion	Analog		Analog	Normal reso	olution mode	High resolu	ution mode	
			1/4000	1/8000	1/12000	output value	ا	utput range	Digital	Maximum	Digital	Maximum	
		Disital	4000	8000	12000	20mA		utput range	input value	resolution	input value	resolution	
I/O charac	cteristics	Digital	2000	4000	6000	12mA		0 to 20mA	0 to 4000	5μA	0 to 12000	1.66µA	
		input value	0	0	0	4mA	re	4 to 20mA	0 10 4000	4μA	] [	1.33μΑ	
		When the offse	et value is set to	4mA and the gair	value is set to 2	0mA	Current	User range setting	-4000 to 4000	1.5µA	-12000 to 12000	0.83μΑ	
Maximum	resolution	5.0μA (1/4000) 2.5μA (1/8000) 1.6μA (1/12000)											
Overall ac	ccuracy	±1.0%			At an ambient temperature of 25±5°C, within ±0.1% (Current: ±20μA)  At an ambient temperature of 0 to 55°C, within ±0.3% (Current: ±60μA)								
Maximum	conversion speed			iin 40ms / 8 cha ame for 1 chan			80μs/channel						
Absolute m	naximum output Voltage			0 to 28mA			21mA						
No. of ana	alog output points		8	channels/mod	ule		8 channels/module						
e and	veen output terminal programmable controller er supply	Photocoupler isolation					Photocoupler isolation						
.E Betw	veen channels			Non-isolated			Non-isolated						
Betwand a	reen external power supply analog output	-			Transformer isolation								
No. of occ	cupied points	32 points			16 points								
Connected	d terminal block		38-	point terminal b	olock				18-pc	oint terminal blo	ock		
Current co	onsumption			0.15A			0.38A						
External	Voltage			21.6 to 26.4VD	C				24V	DC +20%, -159	%		
power sup	oply Current			0.4A			0.27A						

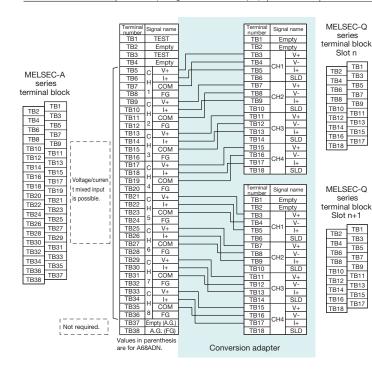
•Program precautions
With A68DAV/A68DAI/A68DAI-S1 and Q68DAVN/Q68DAIN, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

C

#### **2-slot type** (Not applicable to Mitsubishi Electric Q series large type base units)

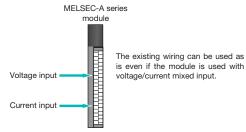
#### 1) ERNT-AQT68AD-GH Terminal block (38P)→Terminal block (18P)×2

Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model	No. of required modules
	A68AD (Voltage/Current mixed input)			
ERNT-AQT68AD-GH	A68AD-S2 (Voltage/Current mixed input)	8 channels	Q64AD-GH	2
	A68ADN (Voltage/Current mixed input)			



#### Notes

1. For analog input, voltage/current mixed input is possible.



2. When replacing A68AD, A68AD-S2 with Q64AD-GH (two modules), the AG connected to terminal number TB38 on the MELSEC-A series side is not required.



3. When replacing A68ADN with Q64AD-GH (two modules), the AG connected to terminal number TB37 and the FG connected to terminal number TB38 on the MELSEC-A series side are not required.

- Q64AD-GH does not have an offset/gain setting terminal. For offset/gain setting, refer to the Q64AD-GH user's manual.
- 5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [Specification comparison chart]

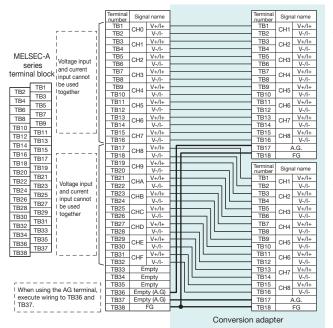
	_	Model	MELSEC	-A series		MELSEC-Q series						
Specifica	ation		A68AD, A	68AD-S2		Q64AD-GH						
Analog in	nput	Voltage	-10 to 0 to 10VDC (Input resistance hardware version K or later: $1M\Omega$ , Hardware version J or before: $30k\Omega$ )			-10 to 10 VDC (Input resistance: 1MΩ)						
Ü	.	Current	4 to 20mA (Input	4 to 20mA (Input resistance: 250Ω)		0 to	20mA DC	(Input resi	istance: 250Ω)			
Digital ou	utput		ACPU: 16-bit signed binary (-2048 to +2047) K2ACPU: 16-bit signed binary (±2047)				bit signed	binary (-65	768 to 32767) 536 to 65535)			
			Analog input	Digital output	An	alog input range			Digital output value			
			+10V	+2000	7 11 1		32 bits	16 bits	(32 bits)	(16 bits)		
I/O chara	ctorietic	ne	+5V or +20mA	+1000		0 to 10V	156.3µV	<u> </u>				
i/O criara	icienstic	33	0V or +4mA	±0		0 to 5V	78.2µV	156.4µV				
			-5V or -12mA	-1000		1 to 5V	62.5µV	125.0µV	0 to 64000	0 to 32000		
			-10V	-2000	Voltage	User range setting (Unipolar)	47.4µV	94.8µV	1			
								312.6µV	-64000 to	-32000 to		
	Voltage: 5mV (1/2000)		nV (1/2000)		User range setting (Bipolar)	47.4µV	94.8µV	64000	32000 to			
Maximum resolution		tion	Current: 20μA (1/1000)			0 to 20mA	312.5nA 625.0nA					
						4 to 20mA	250.0nA	500.0nA	1			
				Current	User range setting (Unipolar)	151.6nA		0 to 64000	0 to 32000			
Overall ad	ccuracy	,	±1.0%		Reference accuracy: ±0.05% Digital output value (32bits): ±32digits Digital output value (16bits): ±16digits Temperature coefficient: ±71.4ppm/°C (0.00714%/°C)							
Maximum	n conve	rsion speed	2.5ms/c	channel	10ms/4 channels							
		. Voltage	±1	5V	±15V							
Absolute	maximu	Current	±30	mA				±30mA				
No. of an	alog inp	out points	8 channel	s/module			4 ch	annels/mo	dule			
Isolation		input terminal and mable controller upply	Photocoupler isolation		Photocoupler isolation							
E	Between	n channels	Non-isolated				Trans	former iso	lation			
No. of oc	cupied	points	32 p	oints				16 points				
Connecte	ed termi	inal block	38-point ter	minal block			18-poi	nt terminal	l block			
Current consumption  Hardware version I or before: 0.9A  Hardware version J or before: 0.9A		ption			0.89A							

	_	Model		MELSEC-A	series		MELSEC-Q series					
Specifica	ation			A68AD	DN		Q64AD-GH					
		Voltage	-10 to	o 0 to 10VDC (Inpu	ut resistance: 1MC	0)	-10 to 10VDC (Input resistance: 1MΩ)					
Analog in	nput	Current		o 0 to 20mA (Input		,	0 to 20mA DC (Input resistance: 11032)					
				16-bit signe		/				(		
			W	hen set to 1/4000	, -4096 to 4095			16-	bit signed	binary (-32	2768 to 32767)	
Digital ou	utput		V	/hen set to 1/8000	, -8192 to 8191				-		5536 to 65535)	
			Wh	nen set to 1/12000	, -12288 to 12287							
					Digital output valu	е	۸		Maximum	resolution	Digital output value	Digital output value
			Analog input	(With a 5V/	20mA gain and 0\	//0mA offset)	Ar	nalog input range	32 bits	16 bits	(32 bits)	(16 bits)
				When set to 1/4000	When set to 1/8000	When set to 1/12000		0 to 10V	156.3µV	312.6µV		
			10V	4000	8000	12000		0 to 5V	78.2µV	156.4µV		
I/O chara	acteristi	cs	5V or 20mA	2000	4000	6000		1 to 5V	62.5µV	125.0µV	0 to 64000	0 to 32000
			0V or 0mA	0	0	0	Voltage	User range setting	47.4µV	94.8µV		
			-5V or -20mA	-2000	-4000	-6000	<u>Ş</u>	(Unipolar)				
			-10V	-4000	-8000	-12000		-10 to 10V	156.3µV	312.6µV	-64000 to	-32000 to
				I			User range setting 47.4µV		94.8µV	64000	32000	
		-		When set to 1/4000	When set to 1/8000	When set to 1/12000		(Bipolar)	0105.4	625.0nA		
Maximun			Voltage input Current input	2.5mV	1.25mV	0.83mV	Ħ	0 to 20mA 4 to 20mA	312.5nA			
iviaximun	n resoil	ition	Current input 10μA 5μA 3.33μA				Current	User range setting	250.0nA	250.0nA 500.0nA	0 to 64000	0 to 32000
								(Unipolar)	151.6nA	303.2nA		
Overall a	ccuracy	,		Within ±1	1.0%		Reference accuracy: ±0.05% Digital output value (32bits): ±32digits Digital output value (16bits): ±16digits					
							Temperature coefficient: ±71.4ppm/°C (0.00714%/°C)					
Maximun	n conve	ersion speed		20ms/cha	annel				10r	ns/4 chanr	nels	
Absolute	maximu	m output Voltage		±15\						±15V		
		' Current		±30m						±30mA		
		out points		8 channels/	module				4 ch	annels/mo	dule	
Isolation		n input terminal and imable controller upply	Photocoupler isolation					Photo	coupler is	olation		
	Betwee	n channels	Non-isolated						Trans	former iso	lation	
No. of oc	cupied	points		32 poir	nts					16 points		
Connecte	ed term	inal block		38-point term	inal block				18-poi	nt termina	l block	
Current c	consum	ption		0.4A						0.89A		

•Program precautions
With A68AD/A68AD-S2/A68ADN and Q64AD-GH, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

#### 2) ERNT-AQT616AD Terminal block (38P)→Terminal block (18P) × 2

Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model	No. of required modules
	A616AD (Voltage input)	1C abannala	Q68ADV	2 modules
ERNT-AQT616AD	A616AD (Current input)	16 channels	Q68ADI	2 modules



MELSEC-Q series terminal block

Slot n				
TDO	TB1			
TB2	TB3			
TB4	TB5			
TB6	TB7			
TB8	TB9			
TB10	TB11			
TB12	TB13			
TB14	TB15			
TB16	TB17			
TB18	-			

MELSEC-Q series terminal block

Slot n+1					
TDO	TB1				
TB2	TB3				
TB6	TB5				
	TB7				
TB8	TB9				
TB10	TB11				
TB12	TB13				
TB14	TB15				
TB16	TB17				
TB18	_				

#### Notes

1. If you want to ground the AG terminal (terminal number TB17) on the MELSEC-Q series side, perform grounding using terminal numbers TB36 and TB37 on the MELSEC-A series side.



- 2. With Q68ADV/Q68ADI analog input, voltage and current mixed input cannot be used in a single module. If CH0-7 and CH8-F on the MELSEC-A series side are used with both voltage and current inputs mixed together, this product cannot be used.
- For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [Input module specification comparison chart]

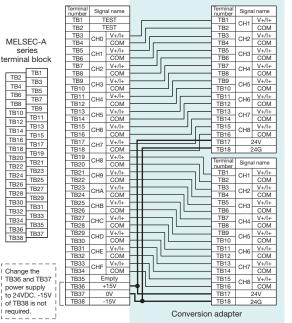
Model MELSEC-A series					MELSEC-Q series								
Specification			A616AD		Q68ADV Q68ADI								
Voltago	-1	0 to 0 to 10\	/DC (Input resist	ance: 1MΩ)		-10 to 10VDC		nce: 1Mg	Ω)			-	
Analog input Current			nA (Input resistar		- 0 to 20mA DC (Input resistance: 250Ω)								
,	16-bit signed binary (data part: 12 bits)							0.1.1.				, , , , , , , , , , , , , , , , , , , ,	
Digital output		(-48 to 4047, -2048 to 2047) Configurable for each channel							_	ned binary		10007 1	
					(1)	lormal resolution r	noae: -4096 t	0 4095,	High res	solution mo	de: -12288 to	12287, -1	0384 (0 16383)
	la a a d	Analog	Maximum	Digital			Norm	nal resol	ution mo	ode	High	h resolution	mode
	Input	input range	resolution	output value		nalog input range	Digital output value Maximum resolution		n resolution	Digital output value   Maximum resolution		imum resolution	
		0 to 10	2.5mV (1/4000)		0 to 10V			2.	5mV	0 to 1600	00	0.625mV	
	>	0 to 5	1.25mV (1/4000)	0 to 4000	ge	0 to 5V	0 to 400	00	1.2	25mV	0 to 1200	no L	0.416mV
	Voltage (V)	1 to 5	1.0mV (1/4000)	-2000 to 2000	Voltage	1 to 5V			1.	0mV	0 10 1200	50	0.333mV
	\ \frac{1}{2}	-10 to 10	5.0mV (1/4000)	]-2000 to 2000   §	Š	-10 to 10V	-4000 to 4	000	2.	5mV	-16000 to 1	6000	0.625mV
I/O characteristics	Ĺ	-5 to 5	2.5mV (1/4000)			User range setting	-4000 10 4	000	0.3	75mV	-12000 to 1	2000	0.333mV
Maximum resolution		0 to 20	10μA (1/2000)	0 to 2000	art	0 to 20mA	0 to 400	nn		5μA	0 to 1200	nn 📙	1.66µA
Waximum rosolution		0 10 20	10μΑ (1/2000)	0 to 2000	4 to 20mA				4μA			1.33µA	
	Æ.	0 to 20	5μA (1/4000)	0 to 4000	0	User range setting	-4000 to 4	000	1.3	37μΑ	-12000 to 1	2000	1.33μΑ
	Voltage (mA)	4 to 20	4μA (1/4000)	-2000 to 2000									
	olta	-20 to 20	20µA (1/2000)	1000 to 3000									
	>		,	-1000 to 1000	-								
		-20 to 20	10μA (1/4000)	0 to 4000									
				-2000 to 2000			Norm	nal resol	ution m	odo	Llial	h resolutior	mode
							Ambient tempe			Ambient	Ambient tempe		
		0 to 10V -10 to 10V -5V to 5V				nalog input range	<u> </u>			· · ·		_	
							drift correction			25±5°C	drift correction	drift correct	
				alue ±12)		0 to 10V	unit concouon	dilit oon	TOURION	2010 0	±0.3%	±0.4%	±0.1%
		-20mA to 20i	mA /		Φ	-10 to 10V	-			(±48 digits)	(±64 digit		
Overall accuracy					Voltage	0 to 5V					(= re engine)	(== : =::5::	-, (= : = ::g::=)
		0 to 5V	\		8	1 to 5V	±0.3%	±0.4	1%	±0.1%			
		1 to 5V	±0.6%			User range setting	(±12 digits)	(±16 d	ligits)	(±4 digits)	±0.3%	±0.4%	±0.1%
		0 to 20mA	(Digital va	alue ±24)	Ħ	0 to 20mA	1				(±36 digits)	(±48 digit	s) (±12 digits)
		4mA to 20mA	4 /		Current	4 to 20mA							
					Q	User range setting							
Maximum conversion speed			1ms/channel						80µs/d	channel			
waxiiiuiii conversion speed			iiiis/Channel		(/	Add 160µs regardl	ess of the nur	mber of			n temperature	e drift corre	ction is used.)
Absolute maximum Voltage			±15V						±1	15V			
input Current ±30mA				±30mA									
No. of analog input points		60	channels/module	9				8	channe	els/module			
Between input terminal and programmable controller power supply  Between channels		Phot	tocoupler isolatio	on				Ph	otocour	oler isolation	า		
			<u> </u>		· · · · · · · · · · · · · · · · · · ·								
			Non-isolated							solated			
No. of occupied points			32 points		16 points								
Connected terminal block	-	38-р	oint terminal bloc	ck	18-point terminal block								
Current consumption 1A								0.6	64A				

#### Program precautions

- 1) With A616AD and Q68ADV/Q68ADI, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
- 2) Q68ADV/Q68ADI has a faster conversion speed than A616AD. As a result, the possibility exists that noise not introduced in A616AD will be introduced as analog signals in Q68ADV/Q68ADI. In such a case, use an averaging processing function to remove the impact of the noise.

#### 3) ERNT-AQT616DA Terminal block (38P)→Terminal block (18P) × 2

	Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model	No. of required modules	
		A616DAV	1C abannala	Q68DAVN	2 modules	
ERNT-AQT616DA	A616DAI	16 channels	Q68DAIN	2 modules		



MELSEC-Q series terminal block Slot n

TDO	TB1
TB2	TB3
TB4	TB5
TB6	TB7
TB8	TB9
TB10	TB11
TB12	
TB14	TB13
TB16	TB15
TB18	TB17

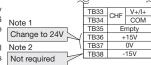
MELSEC-Q series erminal block Slot n+1

terminal block Slot n+1								
		TB1	1					
	TB2	TB3						
	TB4							
	TB6	TB5						
		TB7						
	TB8	TB9						
	TB10	TB11						
	TB12							
	TB14	TB13						
		TB15						
	TB16	TB17						
	TB18	1017	1					

Notes

 Change the external power supply connected to terminal numbers TB36 and TB37 on the MELSEC-A series side to 24VDC.

2. The -15 V connected to terminal number TB38 on the MELSEC-A series side is not required.



- side is not required.

  3. G68DAVN/Q68DAIN does not have an offset/gain setting terminal. For offset/gain
- setting, refer to the Q68DAVN/Q68DAIN user's manual.

  4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/OnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [Specification comparison chart]

[Specification comp	arison c	hartj									
	Model	I	MELSEC-A series			MELSEC-Q series					
Specification			A616DAV				(	Q68DAVN			
		10		16-bit signed binary							
Digital input			6-bit signed binary (-4096 to 4095)				(Normal resolution		,		
						High res	olution mode: -1	2288 to 1228	37, -16384 to 163	183)	
		When the o	output voltage setting is	10V							
Analog output		-10 to 0 to 10VDC (Exte		-10 to 10	VDC (External lo	ad resistance	e value: 1KΩ to 1	MO)			
r maiog output			output voltage setting is			10 10 10	VDO (Externario	aa rooiotario	value. Trest to 1	14132)	
		-5 to 0 to 5V (Extern	al load resistance value	: 2kΩ to 1MΩ)							
		Digital input	Analog	output		Analog	Normal resol	ution mode	High resolution	on mode	
		Digital Input	When set to 5V	When set to 10V	ار	utput range	Digital	Maximum	Digital	Maximum	
		4000	5V	10V	00	atput range	input value	resolution	input value	resolution	
I/O characteristics		2000	2.5V	5V		0 to 5V	0 to 4000	1.25mV	0 to 12000	0.416mV	
		0	0V	0V	ge	1 to 5V	3 10 4000	1.0mV	0 10 12000	0.333mV	
		-2000	-2.5V	-5V	Voltage	-10 to 10V		2.5mV	-16000 to 16000	0.625mV	
		-4000	-5V	-10V	×	User range	-4000 to 4000	0.75mV	-12000 to 12000	0.333mV	
Maximum resolution			1/4000		setting		0.75111	-12000 to 12000	0.000111		
		Output voltage range setting	10V	5V	At an ambient temperature of 25±5°C, within ±0.1% (Voltage: ±10mV)  At an ambient temperature of 0 to 55°C, within ±0.3% (Voltage: ±30mV)						
Overall accuracy		Ambient temperature (0 to 55°C)	±0.6% (±60mV)	±0.6% (±30mV)							
		Ambient temperature (25°C)	±0.3% (±30mV)	±0.3% (±15mV)	At an ambient temperature of 0 to 55 C, within ±0.5% (voltage. ±50m)						
Maximum conversion sp	ood		0.5ms		80µs/channel						
<u> </u>		(-10V → 10V	/ 10V → -10V conversion	n time)	ουμε/charinei						
Absolute maximum output	Voltage		15V					±12V			
No. of analog output poi	ints	16	6 channels/module				8 cha	nnels/module	е		
Between output terminal a		Ph	otocoupler isolation				Photoc	oupler isolati	on		
Between output terminal a programmable controller prog	power supply		Non-isolated			Non-isolated					
Between external pov	wer supply										
and analog output			_				Transf	ormer isolatio	on		
No. of occupied points			32 points					16 points			
Connected terminal bloc	k	38-	point terminal block		18-point terminal block						
Current consumption			0.38A			0.39A					
	Voltage		15VDC / -15VDC		24VDC +20%, -15%						
External power supply	Current	15VD0	C: 0. 2A, -15VDC: 0.17A		0.2A						

#### Program precautions

With A616DAV/A616DAI and Q68DAVN/Q68DAIN, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

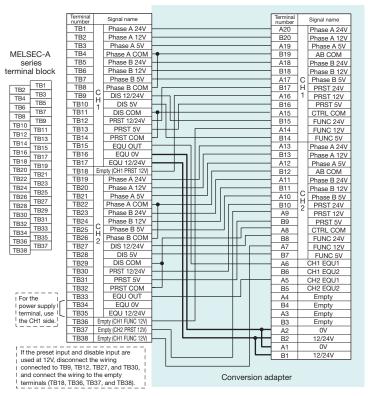
		Model	MELSEC-	A corios		MELSEC-Q series							
	_	Model	WIELGEG	A Selies		MEEGEO & GONGO							
Specification			A616	DAI		Q68DAIN							
			16-bit sign	ed binary				signed binar	-				
Digital input			(0 to 4	*			(Normal resolution		,				
			`			High resolution mode: -12288 to 12287, -16384 to 16383)							
Analog output			0 to 20mA DC (External load r	,		0 to 20m	A DC (External le			,			
			Digital input	Analog output		Analog	Normal resol		High resolution				
I/O characteristic	s		4000	20mA	OL	utput range	Digital	Maximum	Digital	Maximum			
			2000	12mA			input value	resolution	input value	resolution			
			0	4mA	J 😓	0 to 20mA	0 to 4000	5μA	0 to 12000	1.66µA			
					Te.	4 to 20mA	0.10.1000	4µA		1.33µA			
Maximum resolut	tion		1/4000		Current	User range setting	-4000 to 4000	1.5μΑ	-12000 to 12000	0.83μΑ			
						At an ambient temperature of 25±5°C, within ±0.1%							
0			$\pm 0.6\%$ When the ambient temperature is 25°C: $\pm 0.3\%$			(Current: ±20μA)							
Overall accuracy						At an ambient temperature of 0 to 55°C, within ±0.3%							
						(Current: ±60μA)							
Massinas na agressa	!		0.5ms			80 µs/channel							
Maximum conver	rsion sp	eea	(0mA → 20mA, 20mA →	(0mA → 20mA, 20mA → 0mA conversion time)				ου μs/charinei					
Absolute maximur	m outpu	t Current	_	_			21mA						
No. of analog out	tput poi	ints	16 channel	s/module			8 cha	nnels/module	9				
Between output	terminal a	and	Photocouple	er isolation	Photocoupler isolation								
Between output programmable of Between cha	controller p	oower supply	·										
Between cha			Non-iso	olated			No	n-isolated					
Between exte	rnal pov	ver supply	_				Transf	ormor isolatic	ın.				
💆 and analog ou	utput				Transformer isolation								
No. of occupied p			32 pc		16 points								
Connected termin	nal bloc	k	38-point terr		18-point terminal block								
Current consump	otion		0.3		0.38A								
External nower si	unnly	Voltage	15VDC /	-15VDC	24VDC +20%, -15%								
External power supply —		Current	15VDC: 0. 53A, -	15VDC: 0. 53A, -15VDC: 0.125A					0.27A				

## For High-Speed Counter Modules

1-slot type (Applicable to Mitsubishi Electric Q series large type base units as well)

#### 1) ERNT-AQTD61 Terminal block (38P)→Connector (40P)

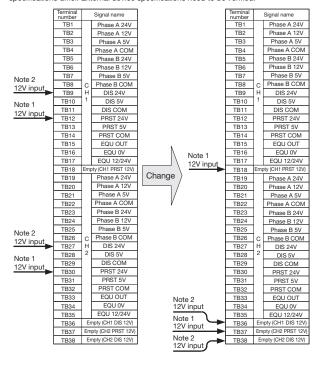
Conversion adapter model	MELSEC-A series module model	No. of channels	MELSEC-Q series module model	No. of required modules	
ERNT-AQTD61	AD61	O abannala	QD62-H01	1 module	
	AD61-S1	2 channels	QD62-H02		



# 

#### Notes

- 1. PRST 12/24V (terminal numbers TB12 and TB30) on the MELSEC-A series side are connected to PRST 24V of QD62-H01/-H02. In a case where the preset input is used at 12V, usage is possible by connecting the wiring of PRST 12/24V (terminal numbers TB12 and TB30) to terminal numbers TB18 and TB37. (Refer to the figure below.) Further, the external input specifications differ. External device specifications need to be verified.
- 2. DIS 12/24V (terminal numbers TB9 and TB27) on the MELSEC-A series side are connected to FUNC 24V of QD62-H01/-H02. In a case where the disable input is used at 12V, usage is possible by connecting the wiring of DIS 12/24V (terminal numbers TB9 and TB27) to terminal numbers TB36 and TB38. (Refer to the figure below.) Further, the external input specifications differ. External device specifications need to be verified.



3. Use the CH1-side (terminal numbers TB17 and TB16) only for the external power supply for AD61 coincidence output. When the CH2-side external power supply (terminal numbers TB35 and TB34) is used, the wiring needs to be changed. (Refer to the below). Further, in a case where the CH1-side external power supply (terminal numbers TB17 and TB16) and the CH2-side external power supply (terminal numbers TB35 and TB34) are used as separate power supplies, the power supplies need to be changed to the

same powers									
	Terminal number		Signal name		Terminal number		Signal name		
	TB1		Phase A 24V		TB1	П	Phase A 24V		
	TB2	]	Phase A 12V		TB2	]	Phase A 12V		
	TB3	]	Phase A 5V		TB3		Phase A 5V		
	TB4		Phase A COM		TB4		Phase A COM		
	TB5		Phase B 24V		TB5		Phase B 24V		
	TB6	1	Phase B 12V		TB6	1	Phase B 12V		
	TB7	]	Phase B 5V		TB7		Phase B 5V		
	TB8	С	Phase B COM		TB8	С	Phase B COM		
	TB9	Н	DIS 24V		TB9	Н	DIS 24V		
	TB10	1	DIS 5V		TB10	1	DIS 5V		
	TB11		DIS COM		TB11		DIS COM		
	TB12	]	PRST 24V		TB12	1	PRST 24V		
	TB13		PRST 5V	External	TB13		PRST 5V		
External power supply	TB14		PRST COM		TB14		PRST COM		
	TB15		EQU OUT	supply	TB15		EQU OUT		
	TB16		EQU 0V	- \\	TB16	]	EQU 0V		
	TB17		EQU 12/24V		TB17		EQU 12/24V		
,	TB18	Emp	ty (CH1 PRST 12V)	Change Spower	TB18	Em	pty (CH1 PRST 12V)		
	TB19		Phase A 24V	supply	TB19		Phase A 24V		
	TB20		Phase A 12V		TB20		Phase A 12V		
	TB21		Phase A 5V	V	TB21		Phase A 5V		
	TB22		Phase A COM		TB22		Phase A COM		
	TB23		Phase B 24V		TB23		Phase B 24V		
	TB24		Phase B 12V		TB24		Phase B 12V		
	TB25		Phase B 5V		TB25		Phase B 5V		
	TB26	С	Phase B COM		TB26	С	Phase B COM		
	TB27	Н	DIS 24V		TB27	Н	DIS 24V		
	TB28	2	DIS 5V		TB28	2	DIS 5V		
	TB29		DIS COM		TB29		DIS COM		
	TB30		PRST 24V		TB30		PRST 24V		
Entremel	TB31		PRST 5V		TB31		PRST 5V		
External	TB32		PRST COM		TB32		PRST COM		
power	TB33		EQU OUT		TB33		EQU OUT		
supply	TB34		EQU 0V	1	TB34		EQU 0V		
	TB35		EQU 12/24V		TB35		EQU 12/24V		
·	TB36		pty (CH1 DIS 12V)		TB36	En	npty (CH1 DIS 12V)		
	TB37	Emp	oty (CH2 PRST 12V)		TB37		pty (CH2 PRST 12V)		
	TB38	Em	pty (CH2 DIS 12V)		TB38	En	npty (CH2 DIS 12V)		

4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Reference to "L (NA) 08046ENG Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric is recommended. Note that the areas where the specifications differ between the MELSEC-A series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [Input module specification comparison chart]

	Model		MELSEC-A series	MELSEC-Q series		
Spec	ification		AD61	QD62-H01		
No. c	f channels		2 channels	2 channels		
Coun	Counting speed setting		-	-		
	Count	Phase	1-phase input, 2-phase input	1-phase input, 2-phase input		
	input signal	Signal level (ΦA, ΦB)	5/12/24VDC, 2 to 5mA	5/12/24VDC, 2 to 5mA		
		Maximum counting speed	1-phase input: 50kPPS	1-phase input: 50kPPS		
ne		Maximum counting speed	2-phase input: 50kPPS	2-phase input: 50kPPS		
channel	Counter	Counting range	24-bit binary	32-bit signed binary		
		Counting range	(0 to 16777215)	(-2147483648 to 2147483647)		
be s		Model	UP/DOWN preset counter + Ring counter function	UP/DOWN preset counter + Ring counter function		
specifications per		Comparison range	Binary format (binary): 24-bit	32-bit signed binary		
zati	Size		Setting value < Count value	Setting value < Count value		
i <u>i</u>	comparison	Comparison result	Setting value = Count value	Setting value = Count value		
be			Setting value > Count value	Setting value > Count value		
		Preset	12/24VDC, 3/6mA	5/12/24VDC, 2 to 5mA		
ano	External	Preset	5VDC, 5mA	3/12/24VDC, 2 to 3IIIA		
E	input	Count disable	12/24VDC, 3/6mA			
Performance	Input	Count disable	5VDC, 5mA	-		
₽.		Function start	-	5/12/24VDC, 2 to 5mA		
	External		Transistor output	Transistor output		
	output	Coincidence output	12/24VDC, 0.5A	12/24VDC, 0.5A/point		
	output		12/24VDC, 0.3A	2A/common		
No. c	f occupied poin	ts	32 points	16 points		
Curre	ent consumption		0.30A	0.30A		

	Model	MELSEC-A series	MELSEC-Q series
Specification		AD61-S1	QD62-H02
lo. of channels		2 channels	2 channels
Counting speed s	etting	-	-
Count	Phase	1-phase input, 2-phase input	1-phase input, 2-phase input
input signa	I Signal level (ΦA, ΦB)	5/12/24VDC, 2 to 5mA	5/12/24VDC, 2 to 5mA
<u></u>	Maximum counting speed	1-phase input: 10kPPS 2-phase input: 7kPPS	1-phase input: 10kPPS 2-phase input: 7kPPS
Counter	Counting range	24-bit binary (0 to 16777215)	32-bit binary (-2147483648 to 2147483647)
je	Model	UP/DOWN preset counter + Ring counter function	UP/DOWN preset counter + Ring counter function
	Comparison range	Binary format (binary): 24-bit	32-bit signed binary
€ Size		Setting value < Count value	Setting value < Count value
Size compariso	n Comparison result	Setting value = Count value Setting value > Count value	Setting value = Count value Setting value > Count value
ds e o u	Preset	12/24VDC, 3/6mA 5VDC, 5mA	5/12/24VDC, 2 to 5mA
External input	Count disable	12/24VDC, 3/6mA 5VDC, 5mA	-
Pe	Function start	-	5/12/24VDC, 2 to 5mA
External output	Coincidence output	Transistor output 12/24VDC, 0.5A	Transistor output 12/24VDC, 0.5A/point 2A/common
lo. of occupied p	oints	32 points	16 points
Current consump	ion	0.30A	0.30A

• Program precautions
With AD61/AD61-S1 and QD62-H01/QD62-H02, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

# **Base Adapter**

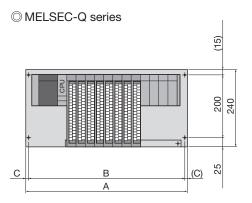
#### **Specifications**

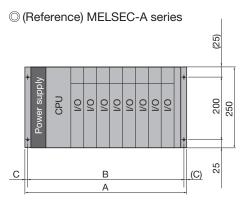
The base adapter allows installation of the MELSEC-Q series and conversion adapter support flange using the mounting holes for the MELSEC-A series base unit (additional drilling of holes is not required).

Dana adamtan		Specifications		
Base adapter model	MELSEC-A series compatible module	MELSEC-Q series compatible module	Mountable conversion adapter support flange	
ERNT-AQB38	A38B, A38B-UL A38HB	Q312B	ERNT-AQF12 ERNT-AQF8	
	A38HBEU, A38B-E	Q38B	ERNT-AQF8	
		Q612B	ERNT-AQF12	
ERNT-AQB68	A68B, A68B-UL		ERNT-AQF8	
		Q68B	ERNT-AQF8	
ERNT-AQB58	A58B, A58B-UL	Q68B	ERNT-AQF8	
	A35B, A35B-UL	Q38B	ERNT-AQF8	
ERNT-AQB35	A35B-E	QOOD	ERNT-AQF5	
	ASSB-L	Q35B	ERNT-AQF5	
		Q68B	ERNT-AQF8	
ERNT-AQB65	A65B, A65B-UL	QOOD	ERNT-AQF5	
ENNT-AGD03	AOSB, AOSB-OL	Q65B	ERNT-AQF5	
		Q55B		
ERNT-AQB55	AEED AEED III	Q65B	ERNT-AQF5	
ERNI-AQD00	A55B, A55B-UL	Q55B	ERNT-AQF5	
ERNT-AQB32	A32B, A32B-UL	Q33B	ERNT-AQF3	
Eniti-AQD32	A32B-E	Q33D	ENNI-AUFS	
ERNT-AQB62	A62B	Q63B	EDNT AGES	
ENNI-AUD02	A02D	Q52B	ERNT-AQF3	
ERNT-AQB52	A52B	Q52B	ERNT-AQF3	

## **Mounting Dimensions**

- •The base adapter longitudinal dimension is smaller than that of the MELSEC-A series. (For module width and depth dimensions, refer to the "Usage Precautions" on page 1-30.)
- •The base adapter mounting holes (four) share the same dimensions as those for the MELSEC-A series base unit. There is no need to drill additional holes on the control panel.
- •When replacing the MELSEC-A series with the MELSEC-Q series, the slot positions where the module is mounted are different. Adjust the wiring length prior to use.



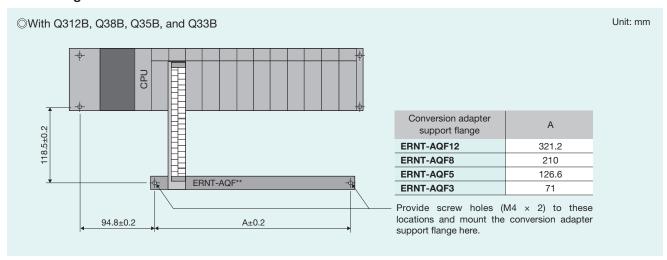


Base adapter model	А	В	С	MELSEC-A series base unit model	А	В	С
ERNT-AQB38	480	460	10	A38B (-UL/-E), A38HB (EU)	480	460	10
ERNT-AQB68	466	446	10	A68B (-UL)	466	446	10
ERNT-AQB58	411	391	10	A58B (-UL)	411	391	10
ERNT-AQB35	382	362	10	A35B (-UL/-E)	382	362	10
ERNT-AQB65	352	332	10	A65B (-UL)	352	332	10
ERNT-AQB55	297	277	10	A55B (-UL)	297	277	10
ERNT-AQB32	247	227	10	A32B (-UL/-E)	247	227	10
ERNT-AQB62	238	218	10	A62B	238	218	10
ERNT-AQB52	183	163	10	A52B	183	163	10

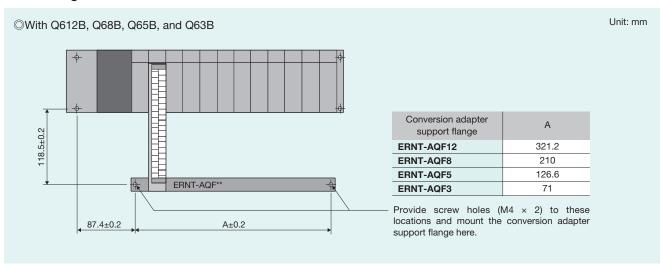
Unit: mm

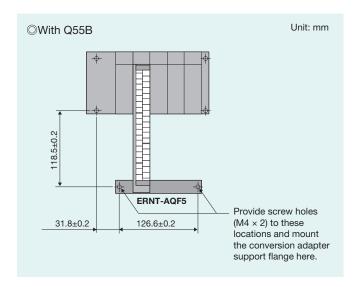
When a base adapter is not used, screw holes (M4  $\times$  2) need to be provided to mount the conversion adapter support flange as shown below. The conversion adapter support flange must be mounted.

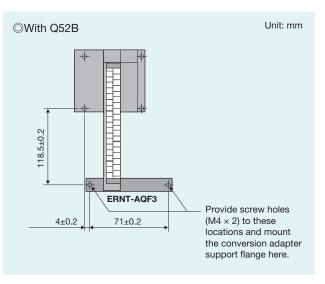
#### When using a main base unit



#### When using an extension base unit







# **Conversion Adapter Support Flange**

# **Specifications**

The conversion adapter support flange secures the bottom of the conversion adapter and is thus required during conversion adapter use. One support flange is required per base unit.

Conversion adapter support flange model	Specifications
ERNT-AQF12	Conversion adapter support flange for 12-slot MELSEC-Q series modules
ERNT-AQF8	Conversion adapter support flange for 8-slot MELSEC-Q series modules
ERNT-AQF5	Conversion adapter support flange for 5-slot MELSEC-Q series modules
ERNT-AQF3	Conversion adapter support flange for 3-slot MELSEC-Q series modules

### **Usage Precautions**

The conversion adapter is used to compensate the difference of the pin assignment when the MELSEC-A series large type module is replaced with the MELSEC-Q series module.

When replacing MELSEC-A series with MELSEC-Q series, be sure to refer to the manual of each module of the MELSEC-Q series to verify the differences in performance, function, CPU input/output signals, buffer memory addresses, and the like prior to use.

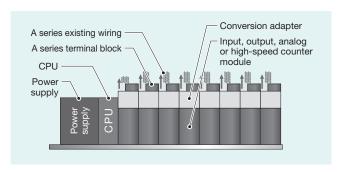
We also recommend that you refer to the "Transition from MELSEC-A/QnA (Large Type) Series to Q Series Handbook" published by Mitsubishi Electric.

#### **Module Width**

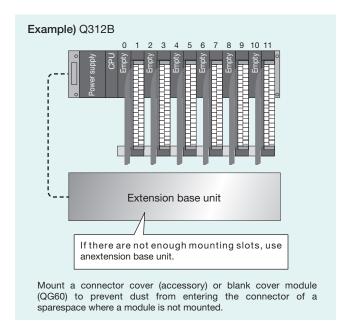
The module width dimension is smaller (37.5 mm → 27.4 mm) and the wiring area is smaller, requiring verification during mounting.



2) If the wiring interferes with a mounted module, lift the wiring forward, etc., so that there is no interference.



3) If interference still occurs even when you lift the wiring, open up a slot to secure a space for wiring.



4) If replacement is not possible based on 2) or 3) on the left, investigate using the Mitsubishi Electric Q series large type base unit.
1-2

### **Depth**

13.9 mm

The dep	oth is larger, requiring verification during m	nounting. MELSEC-A :MELS	EC-A series MELSEC-Q :MELSEC-Q series
Conversion adapter	ERNT-AQTX10 ERNT-AQTY80 ERNT-AQTX80 ERNT-AQTY10 ERNT-AQTY40 ERNT-AQTY50	ERNT-AQTY22 ERNT-AQT62DA	ERNT-AQTX41 ERNT-AQTX81 ERNT-AQTY41 ERNT-AQTY81 ERNT-AQTD61
Depth	143.9 mm	166.2 mm	165.3 mm
Mounting diagram	MELSEC-Q + Upgrade Tool  130 143.9 Increase	MELSEC-Q + Upgrade Tool  130 166.2  Increase	MELSEC-Q + Upgrade Tool  140 165.3  Increase

<sup>\*</sup>The above depth is from each panel surface. (MELSEC-A series: Base unit + Input / Output / Analog / High-speed counter module + Terminal block; MELSEC-Q series + Upgrade Tool: Base adapter + Base unit + Input / Output / Analog / High-speed counter module + Conversion adapter + Terminal block)

36.2 mm

25.3 mm

Conversion adapter	ERNT-AQTX11 ERNT-AQT68AD ERNT-AQTY10A ERNT-AQT68ADN ERNT-AQTY13 ERNT-AQT616AD ERNT-AQTY51	ERNT-AQTY23 ERNT-AQT68AD-GH ERNT-AQT68DA ERNT-AQT616DA
Depth	153.9 mm	176.2 mm
Mounting diagram	MELSEC-A  H Upgrade Tool  Increase  13.9 mm	MELSEC-Q  Upgrade Tool  140  176.2  Increase  36.2 mm

<sup>\*</sup>The above depth is from each panel surface. (MELSEC-A series: Base unit + Input / Output / Analog module + Terminal block; MELSEC-Q series + Upgrade Tool: Base adapter + Base unit + Input / Output / Analog module + Conversion adapter + Terminal block)

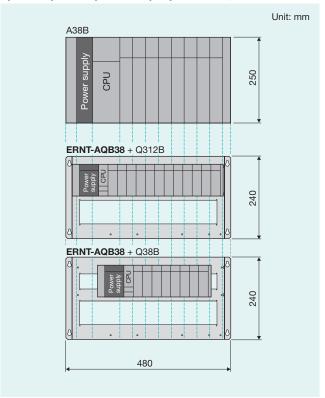
### **Conversion Adapter Support Flange / Base Adapter**

When using a conversion adapter, the conversion adapter support flange is required. We recommend use of a base adapter that permits MELSEC-Q series installation using the mounting holes of the MELSEC-A series (additional drilling of holes is not required).

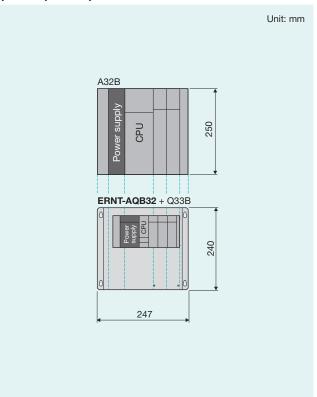
### **Slot Positions**

When you replace the MELSEC-A series with the MELSEC-Q series, the slot positions are different. Change the slot positions where modules are mounted and adjust the wiring lengths prior to use.

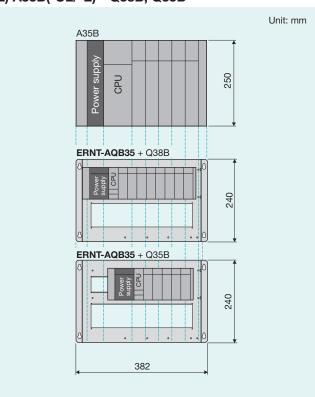
### 1) A38B(-UL/-E)/A38HB(EU)→Q312B, Q38B



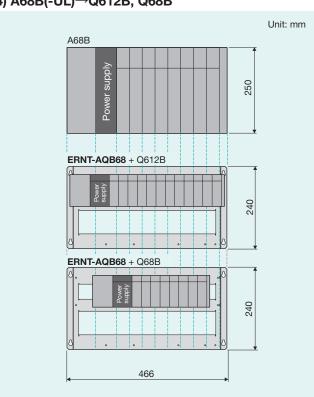
### 3) A32B(-UL/-E)→Q33B



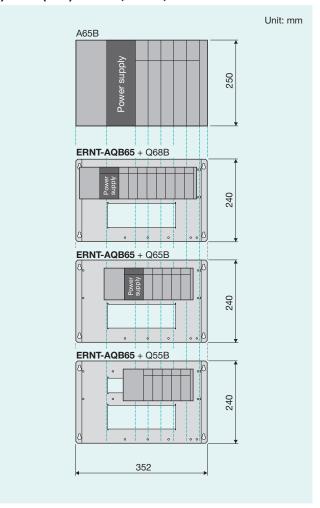
### 2) A35B(-UL/-E)→Q38B, Q35B



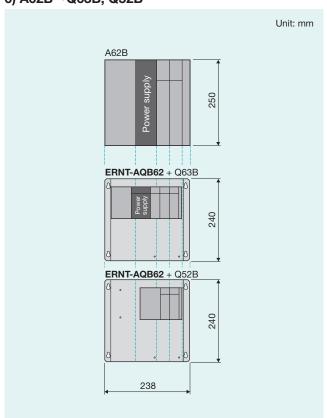
### 4) A68B(-UL)→Q612B, Q68B



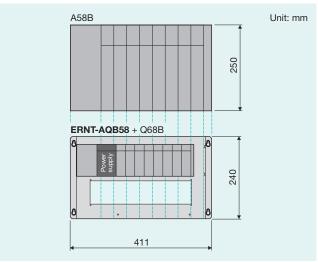
### 5) A65B(-UL)→Q68B, Q65B, Q55B



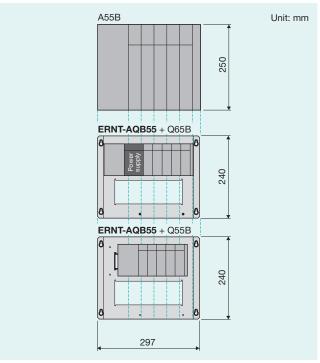
### 6) A62B→Q63B, Q52B



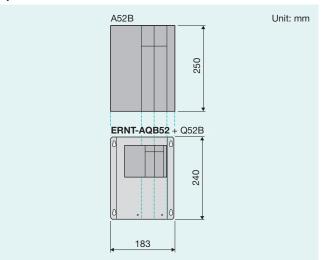
### 7) A58B(-UL)→Q68B



### 8) A55B(-UL)→Q65B, Q55B



### 9) A52B→Q52B



## **External Dimensions**

### **Conversion Adapter**



#### Model names:

**ERNT-AQTX10** 

**ERNT-AQTX40** 

**ERNT-AQTX80** 

**ERNT-AQTY10** 

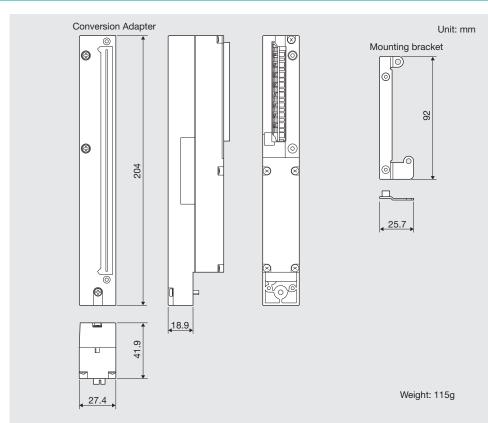
**ERNT-AQTY40** 

**ERNT-AQTY50** 

**ERNT-AQTY80** 

**ERNT-AQT68AD** 

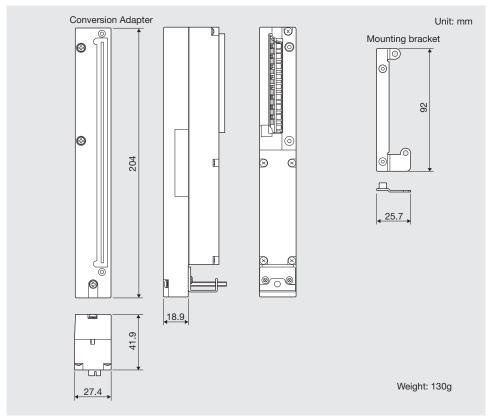
**ERNT-AQT68ADN** 





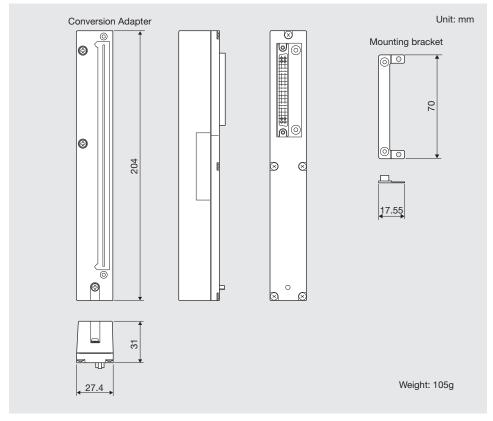
Model names: **ERNT-AQTY22 ERNT-AQT62DA** 

**ERNT-AQT68DA** 



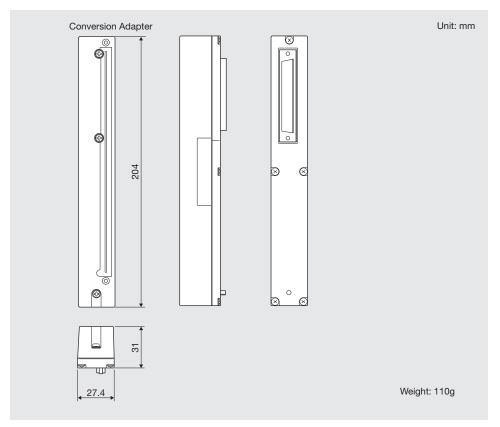


Model names: ERNT-AQTX41 ERNT-AQTY41 ERNT-AQTD61





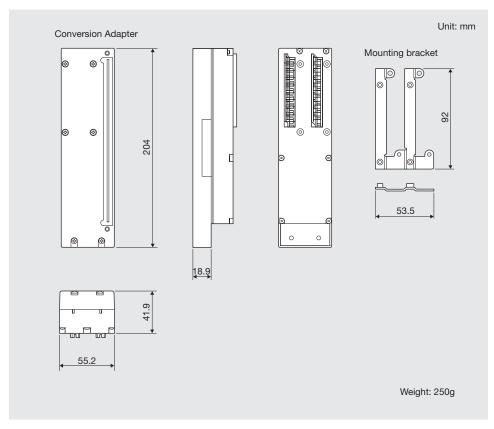
Model names: ERNT-AQTX81 ERNT-AQTY81





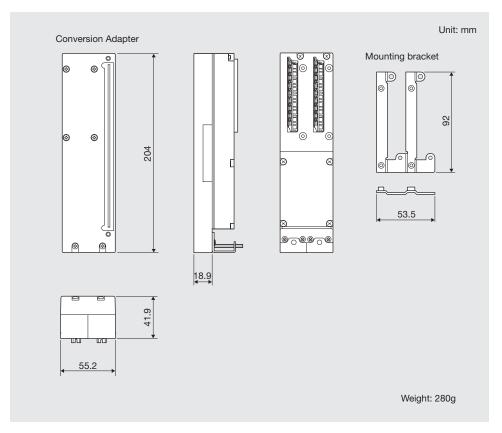
#### Model names:

**ERNT-AQTX11 ERNT-AQTY10A ERNT-AQTY13 ERNT-AQTY51 ERNT-AQT616AD** 





Model names: **ERNT-AQTY23 ERNT-AQT68AD-GH ERNT-AQT616DA** 



### **Base Adapter**



#### Model names:

**ERNT-AQB38** 

**ERNT-AQB68** 

**ERNT-AQB58** 

**ERNT-AQB35** 

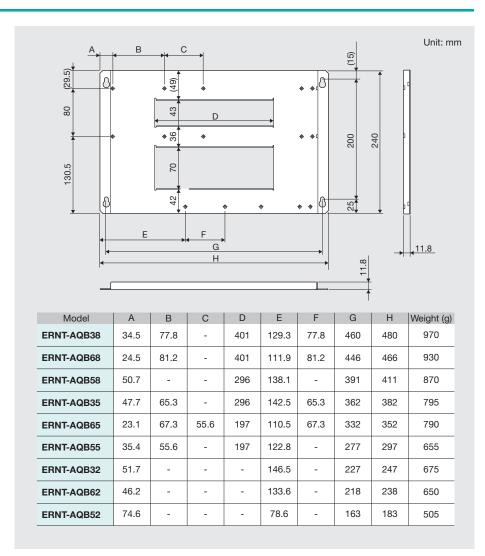
**ERNT-AQB65** 

**ERNT-AQB55** 

**ERNT-AQB32** 

**ERNT-AQB62** 

**ERNT-AQB52** 



### **Conversion Adapter Support Flange**



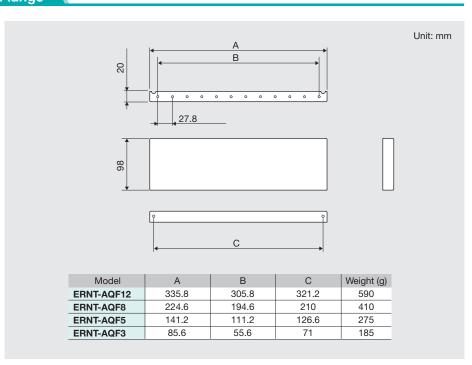
#### Model names:

ERNT-AQF12

**ERNT-AQF8** 

**ERNT-AQF5** 

**ERNT-AQF3** 



	d
4	
	5

Memo	



# MELSEC-Ans Series > MELSEC-L Series

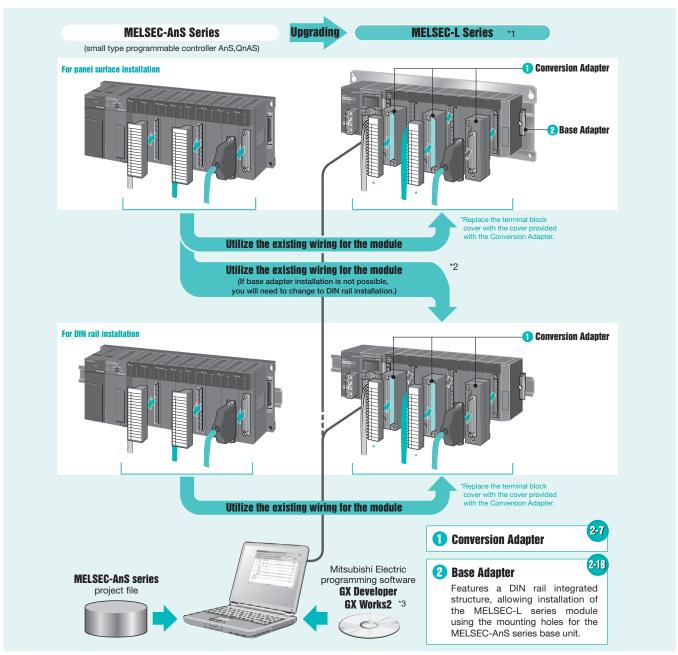
## Upgrading from the MELSEC-AnS series to the MELSEC-L Series

- Simplifies replacement with the MELSEC-L series
  The upgrade tool makes it easy to replace the Mitsubishi Electric programmable controller MELSEC-AnS series with the MELSEC-L series.
- Significantly shortens the time required for input, output, analog and high-speed counter module wiring, and significantly reduces wiring
  - The upgrade tool allows you to connect the wiring connected to the MELSEC-AnS series input, output, analog and high-speed counter modules as is to the MELSEC-L series using a conversion adapter. (Partial changes to power supply and common terminal connections required.)
     By using a base adapter, the MELSEC-L series can be installed using the MELSEC-AnS series mounting holes. (Additional drilling of holes is not required.)
     Compatible with DIN rail installation as well.
- Permits reuse of sequence programs

The upgrade tool allows you to change from the MELSEC-AnS series to the MELSEC-L series and reuse programs by changing the PLC type in the Mitsubishi Electric programming software GX Developer (GX Works2 required for certain CPU types).

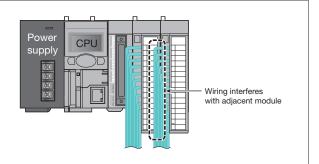
### **Product Overview**

The MELSEC-AnS series / MELSEC-L series upgrade tool comprises a "conversion adapter" that changes the existing wiring connected to the Mitsubishi Electric programmable controller MELSEC-AnS series modules to wiring applicable to themodules of the MELSEC-L series, and a "base adapter" that makes it possible to install the MELSEC-L series using themounting holes of the MELSEC-AnS series base unit.



- \*1: When replacing the MELSEC-AnS series with the MELSEC-L series, verification of the mounting is required due to the change in module width and depth dimensions. For details, refer to the "Usage Precautions" (page 2-19) in this catalog.
- \*2: If the MELSEC-L series system does not fit in the base adapter horizontal width dimension after replacement. Verify the installation method following "Selecting the installation method during replacement" (page 2-3).
- \*3: Programs can be reused when changing from the MELSEC-AnS series (existing program) to the MELSEC-L series by changing the PLC type in the Mitsubishi Electric programming software GX Developer. Note that changing to a type other than L02CPU (-P) and L26CPU (-P) BT requires changing the PLC type in GX Works2 after changing the PLC type in GX Developer. For details, refer to the GX Developer and GX Works2 Operating Manuals. Tools that support program replacement with the L series are also provided by Mitsubishi Electric.

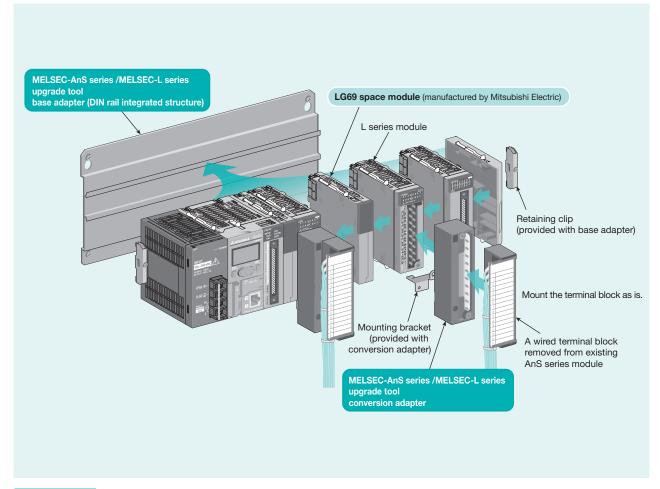
If you replace a terminal block type module, the wiring may interfere with an adjacent module. Use of the Mitsubishi Electric LG69 space module is recommended.



### MITSUBISHI ELECTRIC CORPORATION

### LG69 space module

Ensures wiring space, making it possible to alleviate wiring interface with adjacent modules.

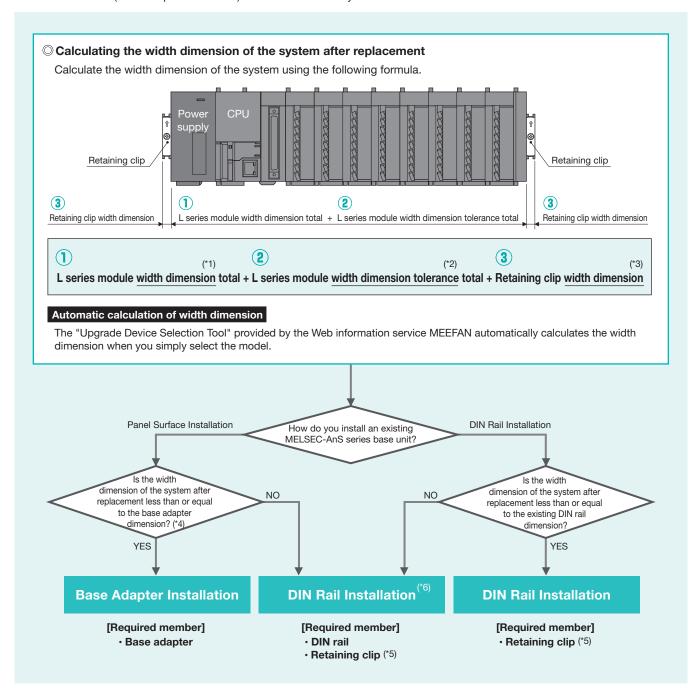


#### Note

- •If you use the LG69 space module, the number of modules mounted is restricted. For details, see the "MELSEC-L CPU Module User's Manual (Hardware Design & Maintenance Inspection)" published by Mitsubishi Electric.
- Depending on the system configuration, the width dimension may increase, making it no longer possible to use the base adapter. Verify the installation method by following "Selecting the Installation Method During Replacement" on the following page.

### **Selecting the Installation Method During Replacement**

The MELSEC-L series features a structure that connects the modules together without a base. As a result, you need to calculate the width dimension of the system after replacement, taking into consideration the width dimension tolerance of each module. The installation method (base adapter or DIN rail) is then determined by the calculation result of the width dimension.



- \*1: Dimension stated in the L series module manual
- \*2: Dimension tolerance (value per module) for L series module width dimension

L series module width dimension	Dimension tolerance
28.5 mm or less	+0.5 mm (per module)
Greater than 28.5 mm	+1.0 mm (per module)

- \*3: Width dimension of the retaining clip used (9mm per clip and 18 mm per two clips if using the retaining clip that comes with the base adapter)
- \*4: For the width dimension of each base adapter, see dimension A of the External Drawing (page 2-24). Example) 430 mm for ERNT-ASLB38.
- \*5: Use a retaining clip (user provided clip) that can be mounted to the DIN rail.
- \*6: If the system after replacement does not fit in the installation space (width), consider the way of connection to divide some parts of the system into extension blocks.

## **Example) If replacing A1S38B comprising eight mounted input/output modules**

a) Base adapter ERNT-ASLB38 width dimension: 430 mm

b) Width dimension after replacement

1) Power supply module: 45 mm (dimension tolerance + 1.0 mm) ②CPU module : 70 mm (dimension tolerance + 1.0 mm)

③ Input/Output module: 28.5 mm (dimension tolerance + 0.5 mm) ×8 modules

4 End cover : 13 mm (dimension tolerance + 0.5 mm)

(5) Retaining clip ×2 clips : 9 mm

 $(45 + 70 + 28.5 \times 8 + 13) + (1.0 + 1.0 + 0.5 \times 8 + 0.5) + (9 \times 2)$ L series module L series module Retaining clip width dimension total width dimension tolerance total width dimension

= 356 + 6.5 + 18

= 380.5 mm ≈ Max. 381 mm

#### ○ If executing replacement without using a space module ○ If executing replacement using a space module

a) Base adapter ERNT-ASLB38 width dimension: 430 mm

b) Width dimension after replacement

① Power supply module: 45 mm (dimension tolerance + 1.0 mm) 2 CPU module 70 mm (dimension tolerance + 1.0 mm)

3 Space module : 16.5 mm (dimension tolerance + 0.5 mm) ×8 modules

4 Input/Output module: 28.5 mm (dimension tolerance + 0.5 mm) ×8 modules ⑤ End cover 13 mm (dimension tolerance + 0.5 mm)

6 Retaining clip 9 mm ×2 clips

 $(45 + 70 + 16.5 \times 8 + 28.5 \times 8 + 13) + (1.0 + 1.0 + 0.5 \times 8 + 0.5 \times 8 + 0.5) + (9 \times 2)$ L series module width dimension total L series module width dimension tolerance total clip width

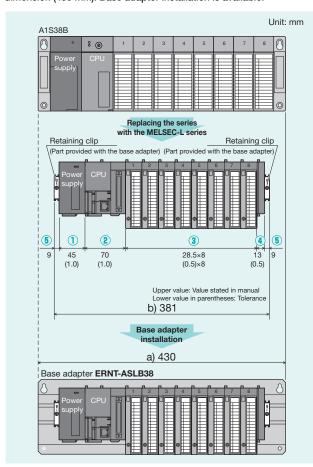
=488 + 10.5 + 18

= 516.5 mm ≈ Max. 517 mm



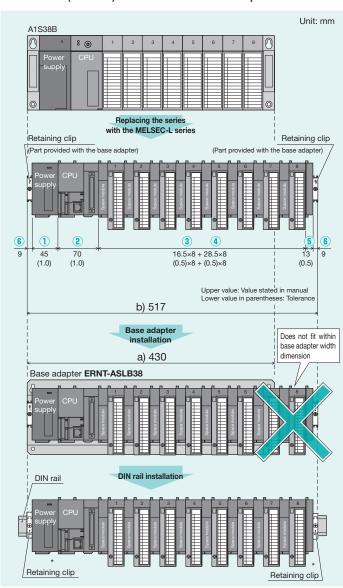
### a) 430 mm ≥ b) 381 mm

The total width does not exceed the base adapter ERNT-ASLB38 dimension (430 mm). Base adapter installation is available.



## a) 430 mm < b) 517 mm

The total width exceeds the base adapter ERNT-ASLB38 dimension (430 mm). DIN rail installation is required.



<sup>\*:</sup> Use a retaining clip (user provided clip) that can be mounted on the DIN rail.

## **Model List**

### **1** Conversion Adapter

When selecting a conversion adapter, be sure to refer to the module specification comparison charts and notes on pages 2-7 to 2-13. These pages indicate precautions such as differences in the number of points per common. For detailed specifications and general specifications not stated in the module specification comparison charts, refer to the user's manual of the corresponding module. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected

#### For Input/Output Modules [1-module type]

Input	MELSEC-AnS series	MELSEC-L series		Conversion adap	ter		
./	module model	module model	Madal	Shape		No. of input/	Page
Output	before replacement	after replacement	Model	MELSEC-AnS series	MELSEC-L series	output points	
Input	A1SX10	LX10					
IIIput	A1SX10EU	LXIU	ERNT-ASLTXY10				2-7
Output	A1SY10	LY10R2	ENVI-AGEIXIII				
Output	A1SY10EU	LY TURZ					
	A1SX40					16 points	
	A1SX40-S1	LX40C6	ERNT-ASLTX40	Terminal block (20 points)	Terminal block (18 points)		2-8
Input	A1SX40-S2						
	A1SX80		ERNT-ASLTX80				
	A1SX80-S1	LX40C6					2-8
	A1SX80-S2						
	A1SY22	LY20S6	ERNT-ASLTY22				2-9
	A1SY40	LY40NT5P	ERNT-ASLTY40		1 1 1 1 1 1		2-9
Output	A1SY40P	LY40INTOP	ENNI-ASLI 140				2-9
	A1SY50	LY40NT5P	ERNT-ASLTY50				2-10
	A1SY80	LY40PT5P	ERNT-ASLTY80				2-10
Input	A1SX81	LX41C4			Connector (40P)		
mput	A1SX81-S2	LX4104	ERNT-ASLCXY81	D-sub connector		20 mainta	2-11
Output	A1SY81	LY41PT1P	ENIVI-AOLOXIOI	(37P)		32 points	4-11
	A1SY81EP	LY4IPTIP					

Note 1. The input/output in the table below are not conversion adapter compatible and therefore require rewiring. Be sure to verify that the MELSEC-L series module specifications satisfy the specifications of connected devices and equipment.

Input/Output		nS series module model fore replacement	MELSEC-L series module model after replacement				
	Model	No. of points	Model	No. of points	No. of required modules		
	A1SX20	16 points	LX28	0 1 - 1 -	2 modules		
Input	A1SX20EU	16 points		8points	2 modules		
	A1SX30	16 points	LX40C6 (24VDC)	16 points	1 module		
Output	A1SY14EU	12 points	LY10R2	16 points	1 module		
Combined	A1SX48Y18	Input 8 points + Output 8 points	LX40C6 + LY10R2	16 points + 16 points	1 module + 1 module		
input/output	A1SX48Y58	Input 8 points + Output 8 points	LX40C6 + LY40NT5P	16 points + 16 points	1 module + 1 module		
	A1SY18A	8 points	LY18R2A	8points	1 module		
	A1SY18AEU	8 points		орониз			
	A1SY28A	8 points	LY28S1A	8points	1 module		
Output	A1SY28EU	o points			1 module		
Output	A1SY60	16 points					
	A1SY60E	16 points					
	A1SY68A	8 points	There is no applicable MELSEC-L series module.				
	A1SY71	32 points					
Dynamic input	A1S42X	16/32/48/64 points					
Dynamic output	A1S42Y	16/32/48/64 points					

Note 2. The input/output modules in the table below can use the existing wiring as is. Be sure to verify that the MELSEC-L series module specifications satisfy

the specific	cations of confidences an	a equipment.				
Input/Output	MELSEC-AnS series module model before replacement	MELSEC-L series module model after replacement	Input/Output	MELSEC-AnS series module model before replacement	MELSEC-L series module n after replacement	
	A1SX41	LX41C4 (24VDC)		A1SH42	LH40C4NIT1D (04V/DC)	
	A1SX41-S1	LX41C4	-		LH42C4NT1P (24VDC)	
	A1SX41-S2	LX4104			LH42C4NT1P	
Input	A1SX42	LX42C4 (24VDC)		A1SH42P-S1	LH42C4NTTP	
iriput	A1SX42-S1	LX42C4				
	A1SX42-S2	LX42G4				
	A1SX71	LX41C4 (24VDC)				
	A1SX82-S1	LX42C4				
	A1SY41	LY41NT1P				
	A1SY41P	LI4IIVI IF				

LY42NT1P

LY42PT1P

Output

A1SY42

A1SY82

A1SY42P

## For Analog Modules [1-module type]

	MELSEC-AnS series	MELSEC-L series		Conversion adapter				ı
Input/ Output	module model	module model	Model	Sha	аре	No. of	Page	ı
Output	before replacement	after replacement	iviodei	MELSEC-AnS series	MELSEC-L series	channels		ı
Input	A1S64AD	L60AD4	ERNT-ASLT64AD	Terminal block	Terminal block	4 channels	2-12	
Output	A1S62DA	L60DA4	ERNT-ASLT62DA	(20 points)	(18 points)	2 channels	2-13	

Note 3. Modules other than the intelligent function modules above are not compatible with the conversion adapter. Rewiring is required.

## For High-Speed Counter Modules [1-module type]

MELSEC-AnS series	MELSEC-L series		Conversion adap			
module model	module model	Model	Sh	ape	No. of	Page
before replacement	after replacement	Model	MELSEC-AnS series	MELSEC-L series	channels	
A1SD61	LD62	ERNT-ASLTD61	Terminal block	Connector (40P)	1 channel	2-14
A1SD62	LD62	ERNT-ASLTD62	(20 points)	Connector (40P)	2 channels	2-16

### 2 Base Adapter

With the base adapter, the MELSEC-Q series base unit can be installed using the mounting holes of the MELSEC-L series base unit. The base adapter width dimension is the same as that of the MELSEC-AnS series base unit prior to replacement. As a result, the following precautions apply even if you do not use a space module (LG69).

Main/ Extension	MELSEC-AnS series module model before replacement	Base adapter model	Replacement precautions	Page
	A1S38B	ERNT-ASLB38		
	A1S38HB	ENNI-ASLESO	_	
	A1S35B	ERNT-ASLB35	-	
Main	A1S33B	ERNT-ASLB33	If extension blocks are connected, the number of modules that can be mounted is two (*1).	
IVIAIII	A1S32B	ERNT-ASLB32	If extension blocks are connected, the number of modules that can be mounted is one (*1).	
	A1SJCPU			
	A1SJCPU-S3	ERNT-ASLBJ	_	2-18
	A1SJHCPU			
	A1S68B	ERNT-ASLB68	-	
	A1S65B	ERNT-ASLB65	-	
Extension	A1S58B	ERNT-ASLB58	-	
	A1S55B	ERNT-ASLB55	-	
	A1S52B	ERNT-ASLB52	The number of modules that can be mounted is one (*1).	

<sup>\*1:</sup> Module with a width dimension of 28.5mm.

## **Conversion Adapter**

#### **Specifications**

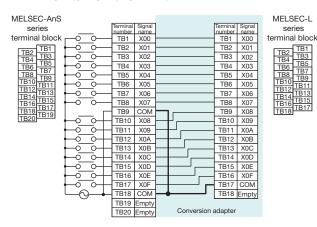
### For Input/Output Modules

### 1-module type

#### 1) ERNT-ASLTXY10 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of input/ output points	MELSEC-L series module model	
	A1SX10 16 points		LX10	
ERNT-ASLTXY10	A1SY10	40 ! t	11/4000	
	A1SY10EU	16 points	LY10R2	

#### With A1SX10/A1SX10EU→LX10



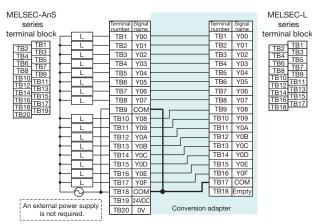
#### [Specification comparison chart]

[openiousen companion chart]			
Model	MELSEC-	AnS series	MELSEC-L series
Specification	A1SX10	A1SX10EU	LX10
No. of input points	16 points	16 points	16 points
Isolation method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Rated input voltage	100 to 120VAC, 50/60Hz	100 to 120VAC, 50/60Hz	100 to 120VAC (+10/-15%) 50/60Hz (±3Hz)
Data diamet assessed	Approx. 6mA	Approx. 7mA	8.2mA (100VAC, 60Hz)
Rated input current	(100VAC, 60Hz)	(120VAC, 60Hz)	6.8mA (100VAC, 50Hz)
Rush current	200mA, maximum,	200mA, maximum,	200mA, maximum,
Rush current	within 1ms (132VAC)	within 1ms (132VAC)	within 1ms
ON voltage	80VAC or more	80VAC or more	80VAC or more / 5mA or more
/ ON current	/ 5mA or more	/ 5mA or more	(50Hz, 60Hz)
OFF voltage	30VAC or less	30VAC or less	30VAC or less / 1.7mA or less
/ OFF current	/ 1.4mA or less	/ 1.4mA or less	(50Hz, 60Hz)
Input impedance	Approx. 18kΩ (60Hz)	Approx. 18kΩ (60Hz)	12.2kΩ (60Hz)
input impedance	Approx. 21kΩ (50Hz)	Approx. 21kΩ (50Hz)	14.6kΩ (50Hz)
Response OFF→ON	20ms or less	20ms or less	15ms or less
time ON→OFF	35ms or less	35ms or less	20ms or less
Internal current	50mA	50mA	90mA
consumption	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Wiring method for common	16 points/common	16 points/common	16 points/common
External interface	20-point terminal block	20-point terminal block	18-point terminal block

#### Notes

- areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- 2. For detailed and general specifications not described in the module specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### With A1SY10/A1SY10EU→LY10R2



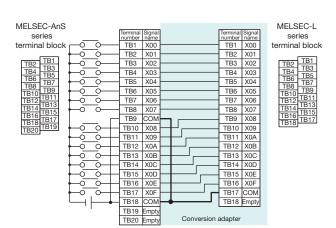
#### [Specification comparison chart]

Model		MELSEC-	MELSEC-AnS series	
Specification		A1SY10	A1SY10EU	LY10R2
No. of out	put points	16 points	16 points	16 points
Isolation	method	Photocoupler isolation	Photocoupler isolation	Relay isolation
Rated sw	illa la la a	240VAC/2A (cosΦ=1)	120VAC/2A (cosΦ=1)	240VAC/2A (cosΦ=1)
		24VDC/2A (Resistance load)	24VDC/2A (Resistance load)	24VDC/2A (Resistance load)
voltage/c	urrent	8A/common	8A/common	8A/common
Minimum sv	vitching load	5VDC, 1mA	5VDC, 1mA	5VDC, 1mA
Maximum voltage	switching	264VAC, 125VDC	132VAC, 125VDC	264VAC, 125VDC
Response	OFF→ON	10ms or less	10ms or less	10ms or less
time	ON→OFF	12ms or less	12ms or less	12ms or less
Surge su	ppressor	No	No	No
Fuse		No	No	No
Internal c	urrent	120mA	120mA	460mA
consumption		(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Wiring method for common		8 points/common	8 points/common	16 points/common
External in	nterface	20-point terminal block	20-point terminal block	18-point terminal block
Notes				

- When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB18 on the MELSEC-AnS series side are used separately, a wiring change is required.
- 2. An external power supply connected to terminal numbers TB19 and TB20 on the MELSEC-AnS series side is not required.
- For a paras, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### 2) ERNT-ASLTX40 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of input points	MELSEC-L series module mode
	A1SX40		
ERNT-ASLTX40	A1SX40-S1	16 points	LX40C6
	A1SX40-S2		



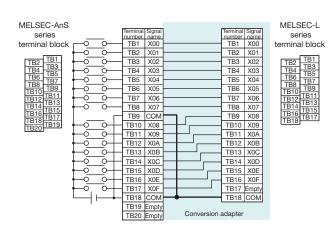
#### [Specification comparison chart]

[Specification comparison chart]					
	Model	M	ELSEC-AnS serie	S	MELSEC-L series
Specifica	ation	A1SX40 (Sink type)	A1SX40-S1 (Sink type)	A1SX40-S2 (Sink type)	LX40C6 (Positive/Negative common shared type)
No. of inp	out points	16 points	16 points	16 points	16 points
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Rated inp	ut voltage	12/24VDC	24VDC	24VDC	24VDC
Rated inp	ut current	Approx. 3mA / Approx. 7mA	Approx. 7mA	Approx. 7mA	6mA TYP.
ON volta	ge	8VDC or more	14VDC or more	14VDC or more	15VDC or more
/ ON curr	ent	/ 2mA or more	/ 4mA or more	/ 3.5mA or more	/ 4mA or more
OFF volta	age	4VDC or less	6.5VDC or less	6.5VDC or less	8VDC or less
/ OFF cui	rrent	/ 1mA or less	/ 1.7mA or less	/ 1.7mA or less	/ 2mA or less
Input imp	edance	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 3.3kΩ	3.8kΩ
Response	OFF→ON	10ms or less	0.1ms or less	10ms or less	1/5/10/20/70ms or less
time	ON→OFF	10ms or less	0.2ms or less	10ms or less	1/5/10/20/70ms or less
Internal current		50mA	50mA	50mA	90mA
consumption		(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Wiring method for common		16 points/common	16 points/common	16 points/common	16 points/common
External in	nterface	20-point terminal block	20-point terminal block	20-point terminal block	18-point terminal block

- 1. When replacing A1SX40 and using a rated input voltage of 12VDC, the voltage needs to be changed to 24VDC.
- 2. For ... areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### 3) ERNT-ASLTX80 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of input points	MELSEC-L series module model
	A1SX80		
ERNT-ASLTX80	A1SX80-S1	16 points	LX40C6
	A1SX80-S2		



#### [Specification comparison chart]

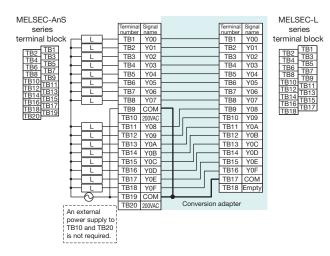
Model		MELSEC-AnS series			MELSEC-L series	
		A1SX80	A1SX80-S1	A1SX80-S2	LX40C6	
		(Sink/Source	(Sink/Source	(Sink/Source	(Positive/Negative	
Specifica	tion	type)	type)	type)	common shared type)	
No. of inp	out points	16 points	16 points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated inp	ut voltage	12/24VDC	24VDC	24VDC	24VDC	
Dated inn	ut current	Approx. 3mA	Approx. 7mA	Approx. 7mA	6mA TYP.	
nateu irip	ut current	/ Approx. 7mA	Approx. / IIIA	Approx. / IIIA	OINA TYP.	
ON voltag	ge	8VDC or more	17VDC or more	13VDC or more	15VDC or more	
/ ON curr	ent	/ 2mA or more	/ 5mA or more	/ 3.5mA or more	/ 4mA or more	
OFF volta	age	4VDC or less	5VDC or less	6VDC or less	8VDC or less	
/ OFF cui	rent	/ 1mA or less	/ 1.7mA or less	/ 1.7mA or less	/ 2mA or less	
Input imp	edance	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 3.3kΩ	3.8kΩ	
Response	OFF→ON	10ms or less	0.4ms or less	10ms or less	1/5/10/20/70ms or less	
time	ON→OFF	10ms or less	0.5ms or less	10ms or less	1/5/10/20/70ms or less	
Internal current		50mA	50mA	50mA	90mA	
consumption		(TYP. all points ON)				
Wiring method for common		16 points/common	16 points/common	16 points/common	16 points/common	
External in	ntorfaco	20-point	20-point	20-point	10 point terminal block	
LATERIALII	пенасе	terminal block	terminal block	terminal block	18-point terminal block	

- 1. When replacing A1SX80 and using a rated input voltage of 12VDC, the voltage needs to be
- changed to 24VDC.

  For areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment. 2. For 🗀
- For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### 4) ERNT-ASLTY22 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-L series module model	
ERNT-ASLTY22	A1SY22	16 points	LY20S6	



#### [Specification comparison chart]

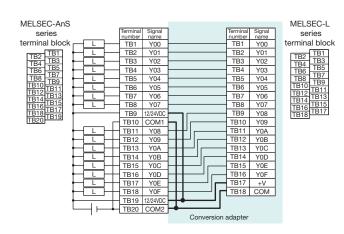
	Model	MELSEC-AnS series	MELSEC-L series
Specificati	ion	A1SY22	LY20S6
No. of outp	out points	16 points	16 points
Isolation m	nethod	Photocoupler isolation	Photocoupler isolation
Rated load	d voltage	100 to 240VAC 50/60Hz±3Hz	100 to 240VAC (+10/-15%) 50/60Hz (±3Hz)
Maximum	load current	0.6A/point 2.4A/common	0.6A/point 4.8A/common
Minimum I voltage/cu		24VAC 100mA 100VAC 10mA 240VAC 20mA	24VAC 100mA 100VAC 25mA 240VAC 25mA
Maximum i	rush current	20A 10ms or less, 8A 100ms or less	20A, one cycle or less
OFF leakage		1.5mA (120VAC, 60Hz) 3mA (240VAC, 60Hz)	1.5mA (at 120VAC, 60Hz) 3mA or less (at 240VAC, 60Hz)
ON maxim		1.5VAC or less (0.1 to 0.6A) 1.8VAC or less (50 to 100mA) 2VAC or less (10 to 50mA)	1.5V or less (Load current at 0.6A)
Danasas	OFF→ON	1ms or less	1ms or less + 0.5 cycles or less
Response time	ON→OFF	1ms + 0.5 cycles or less	1ms + 0.5 cycles or less (Rated load, resistance load)
Surge sup	pressor	CR absorber	CR absorber
Fuse		5A (1 common/fuse) not replaceable	No (Fuse installation is recommended for each external wiring point.)
Internal current consumption		270mA (TYP. all points ON)	300mA (TYP. all points ON)
Wiring met		8 points/common	16 points/common
External in	terface	20-point terminal block	18-point terminal block

#### Notes

- 1. When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 on the MELSEC-AnS series side are used separately, a wiring change is required.
- An external power supply connected to terminal numbers TB10 and TB20 on the MELSEC-AnS series side is not required.
- 3. For  $\fill \Box$  areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices

### 5) ERNT-ASLTY40 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-L series module model	
ERNT-ASLTY40	A1SY40	1C mainta	LY40NT5P	
ERNI-ASLIT40	A1SY40P	16 points	LY40N15P	



#### [Specification comparison chart]

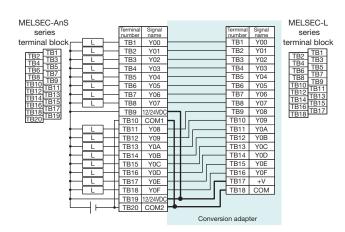
Model		MELSEC-	AnS series	MELSEC-L series
		A1SY40	A1SY40P	LY40NT5P
Specification		(Sink type)	(Sink type)	(Sink type)
No. of outp	out points	16 points	16 points	16 points
Isolation m	nethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Rated load	d voltage	12/24VDC	12/24VDC	12/24VDC
Maximum	load current	0.1A/point	0.1A/point	0.5A/point
IVIANIIIUIII	oau current	0.8A/common	0.8A/common	5A/common
				Current restrictions exist
Maximum	rush current	0.4A, 10ms or less	0.7A, 10ms or less	due to the overload
				protection function
OFF leaka	ge current	0.1mA or less	0.1mA or less	0.1mA or less
ON maxim	ium	1.0VDC (TYP) 0.1A	0.1VDC (TYP) 0.1A	0.2VDC (TYP) 0.5A
voltage dr	ор	2.5VDC (MAX) 0.1A	0.2VDC (MAX) 0.1A	0.3VDC (MAX) 0.5A
Response	OFF→ON	2ms or less	1ms or less	0.5ms or less
time	ON→OFF	2ms or less	1ms or less	1ms or less
unie	UN→UFF	(Resistance load)	(Rated load, resistance load)	(Rated load, resistance load)
Surge sup	pressor	Zener diode	Zener diode	Zener diode
Fuse		1.6 A (1 common/fuse) not replaceable	No	No
Internal cu	rront	270mA	79mA	100mA
		(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
consumption		(TTF. all politis ON)	Yes	Yes
Protection function		No	(Overheat protection	(Overheat protection
1 Totection function		INO	and overload protection)	and overload protection)
Wiring method			and overious protection)	and overload protection)
for commo		8 points/common	8 points/common	16 points/common
External in		20-point terminal block	20-point terminal block	18-point terminal block

- 1. When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-AnS series side are used separately, a wiring change is required.

  2. For \_\_\_\_\_ areas, verify that the MELSEC-L series module specifications satisfy the specifications
- of the connected device/equipment.
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 6) ERNT-ASLTY50 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-L series module model	
ERNT-ASLTY50	A1SY50	16 points	LY40NT5P	



#### [Specification comparison chart]

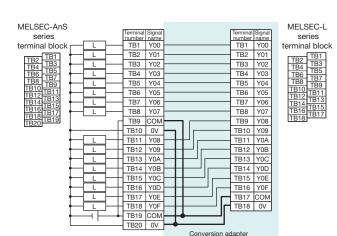
Model		MELSEC-AnS series	MELSEC-L series	
		A1SY50	LY40NT5P	
Specificati	on	(Sink type)	(Sink type)	
No. of outp	ut points	16 points	16 points	
Isolation m	ethod	Photocoupler isolation	Photocoupler isolation	
Rated load	l voltage	12/24VDC	12/24VDC	
Maximum	oad current	0.5A/point	0.5A/point	
IVIAXIIIIUIIII	oau current	2A/common	5A/common	
Marriagram	rush current	4A. 10ms or less	Current restrictions exist due to	
Maximum	usn current	4A, Turns or less	the overload protection function	
OFF leakage current		0.1mA or less	0.1mA or less	
ON maxim	um	0.9VDC (TYP) 0.5A	0.2VDC (TYP) 0.5A	
voltage dro	р	1.5VDC (MAX) 0.5A	0.3VDC (MAX) 0.5A	
Response	OFF→ON	2ms or less	0.5ms or less	
time	ON→OFF	2ms or less (Resistance load)	1ms or less (Rated load, resistance load)	
Surge supp	oressor	Zener diode	Zener diode	
Fuse		3.2A (1 common/fuse) not replaceable	No	
Protection	function	No	Yes (Overheat protection	
			and overload protection)	
Internal current		120mA (TYP. all points ON)	100mA (TYP. all points ON)	
consumption				
Wiring met		8 points/common	16 points/common	
for commo		5 po	points, common	
External in	terface	20-point terminal block	18-point terminal block	

#### Notes

- 1. When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-AnS series side are used separately, a wiring change is required.
- For areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 7) ERNT-ASLTY80 Terminal block (20P)→Terminal block (18P)

Conversion adapter	MELSEC-AnS series	No. of	MELSEC-L series
model	module model	output points	module model
EDNT ASITVO	A19V80	16 points	I VANDTED



#### [Specification comparison chart]

del	MELSEC-AnS series	MELSEC-L series		
	A1SY80	LY40PT5P		
_	(Source type)	(Source type)		
S	16 points	16 points		
	Photocoupler isolation	Photocoupler isolation		
)	12/24VDC	12/24VDC		
ront	0.8A/point	0.5A/point		
eni	3.2A/common	5A/common		
ront	9A 10ma ar laga	Current restrictions exist due to		
eni	oa, fortis or less	the overload protection function		
nt	0.1mA or less	0.1mA or less		
	1 EVDC (MAX) 0 9A	0.2VDC (TYP) 0.5A		
	1.5VDC (IVIAX) 0. 6A	0.3VDC (MAX) 0.5A		
NC	2ms or less	0.5ms or less		
FF	2ms or less (Resistance load)	1ms or less (Rated load, resistance load)		
	Zener diode	Zener diode		
	5A (1 common/fuse) not replaceable	No		
	No	Yes (Overheat protection		
1	NO	and overload protection)		
	120mA (TVP all points ON)	100mA (TYP. all points ON)		
	120HA (TTF. all politis ON)	Toothia (TTF. all politis ON)		
	8 points/common	16 points/common		
	ο ροιπο/cοπποπ	TO POLITIS/CONTINION		
	20-point terminal block	18-point terminal block		
	sserent rent nt	A1SY80 (Source type) s 16 points Photocoupler isolation 12/24VDC 0.8A/point 3.2A/common  rent 8A, 10ms or less nt 0.1mA or less 1.5VDC (MAX) 0. 8A  DN 2ms or less FF 2ms or less (Resistance load) Zener diode 5A (1 common/fuse) not replaceable No 120mA (TYP. all points ON) 8 points/common		

#### Notes

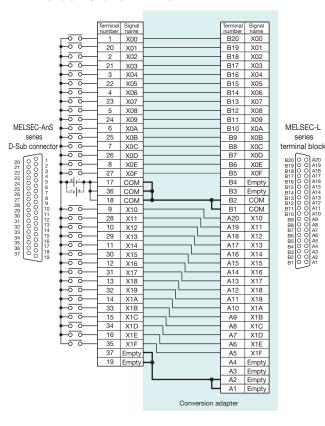
- When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-AnS series side are used separately, a wiring change is required.
- For areas, verify that the MELSEC-L series module specifications satisfy the specifications
  of the connected device/equipment.
- of the connected device/equipment.

  3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 8) ERNT-ASLCXY81 D-Sub connector (37P)→Connector (40p)

Conversion adapter model	MELSEC-AnS series module model	No. of input/ output points	MELSEC-L series module model	
	A1SX81	32 points	LX41C4	
ERNT-ASLCXY81	A1SX81-S2			
	A1SY81	32 points	LY41PT1P	
	A1SY81EP	JZ POITIS	LITIF	

#### With A1SX81/A1SX81-S2-LX41C4



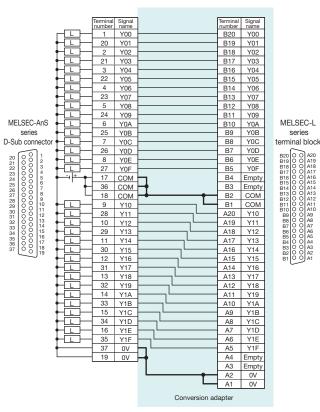
#### [Specification comparison chart]

	Model MELSEC-A			AnS series	MELSEC-L series	
		A1SX81		A1SX81-S2	LX41C4	
		(Sink/S	Source	(Sink/Source	(Positive/Negative	
Specifica	tion	shared	d type)	shared type)	common shared type)	
No. of inp	ut points	32 p	oints	32 points	32 points	
Isolation	method	Photocoup	ler isolation	Photocoupler isolation	Photocoupler isolation	
Rated inp	ut voltage	12VDC	24VDC	24VDC	24VDC	
Rated inp	ut current	Approx. 3mA	Approx. 7mA	Approx. 7mA	4mA TYP.	
ON voltag	ge	8VDC or more		13VDC or more	19VDC or more	
/ ON curr	ent	/ 2mA or more		/ 3.5mA or more	/ 3mA or more	
OFF volta	ige	4VDC or less		6VDC or less	9VDC or less	
/ OFF cur	rent	/ 1mA or less		/ 1.7mA or less	/ 1.7mA or less	
Input imp	edance	Approx. 3.3kΩ		Approx. 3.3kΩ	5.7kΩ	
Response	OFF→ON	10ms or le	ss (24VDC)	10ms or less	1/5/10/20/70ms or less	
time	ON→OFF	10ms or le	ss (24VDC)	10ms or less	1/5/10/20/70ms or less	
Internal cu	irrent	80	mA	80mA	100mA	
consumpt	ion	(TYP. all p	oints ON)	(TYP. all points ON)	(TYP. all points ON)	
Wiring method for common		32 points/common		32 points/common	32 points/common	
External in	terface	37-pin D-Su	b connector	37-pin D-Sub connector	40-pin connector	

series

- 1. When replacing A1SX81 and using a rated input voltage of 12VDC, the voltage needs to be changed to 24VDC.
- 2. For areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### With A1SY81/A1SY81EP→LY41PT1P



#### [Specification comparison chart]

	Model	MELSEC-	AnS series	MELSEC-L series
		A1SY81	A1SY81EP	LY41PT1P
Specifica	ation	(Source type)	(Source type)	(Source type)
No. of out	put points	32 points	32 points	32 points
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Rated loa	ad voltage	12/24VDC	12/24VDC	12/24VDC
Maximun	n load	0.1A/point	0.1A/point, 2Apoint, 25°C)	0.1A/point
current		2A/common	0.05A/point, 1.6Apoint, (55°C)	2A/common
Maximun	n ruch		No restrictions	Current restrictions exist
current	iiusii	0.4A 10ms or less	(Overload protection	due to the overload
Current			function)	protection function
OFF leaka	ge current	0.1mA or less	0.1mA or less	0.1mA or less
ON maxii	mum	1.0VDC(TYP) 0.1A	2.5VDC(0.1A Min)	0.1VDC(TYP) 0.1A
voltage d	lrop	2.5VDC(MAX) 0.1A 3.5VDC(0.1A N		0.2VDC(MAX) 0.1A
Response	OFF→ON	2ms or less	0.5ms or less	0.5ms or less
time	ON→OFF	2ms or less	1.5ms or less	1ms or less
une	UN→UFF	(Resistance load)	(Resistance load)	(Rated load, resistance load)
Surge su	ppressor	Zener diode	Clamp diode	Zener diode
Fuse		3.2A (1 common/fuse) not replaceable	No	No
			Yes	Yes
Protectio	n function	No	(Overheat protection	(Overheat protection
			and overload protection)	and overload protection)
Internal c	urrent	500mA	500mA	140mA
consump	tion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Wiring me		32 points/common	32 points/common	32 points/common
for comm		•	·	•
External in	nterface	37-pin D-Sub connector	37-pin D-Sub connector	40-pin connector
Motoc				

series

- 1. For areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.

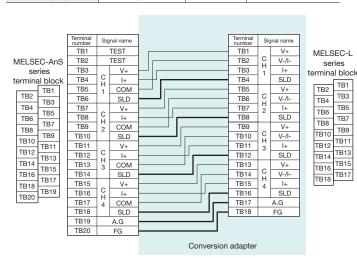
  2. For detailed and general specifications not described in the specification comparison chart,
- refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### For Analog Modules

### 1-module type

#### 1) ERNT-ASLT64AD Terminal block (20P)—Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-L series module model
ERNT-ASLT64AD	A1S64AD	4 channels	L60AD4



#### Notes

ТВЗ

TB5

TB7

TB9

TB11

TB13

TB15

Be sure to ground the FG terminal (TB20).



2. L60AD4 does not have an offset/gain setting terminal. For offset/gain setting, refer to the L60AD4 user's manual.

#### [Specification comparison chart]

[Specification compar		-								
	Model	M	ELSEC-AnS ser	ries			MELS	EC-L series		
0 17 11		A1S64AD				L60AD4				
Specification		-10 to 0 to 10VDC (Input resistance: 1MΩ)				10 1 10 100 11				
Analog input Voltage					N		· · · · · · · · · · · · · · · · · · ·	nput resistance: 1MΩ)		
Current			20mA (Input res		!)		0 to 20mA DC (II	nput resistance: 250Ω)		
			8-bit signed bina	,			20.46	20.1.00.170		
Digital output			to 1/4000, -409					30 to 20479	707\	
			to 1/8000, -819				(During the use of scall)	ng function -32768 to 32	767)	
		vvnen set t	o 1/12000, -122							
				gital output valu		An	alog input range	Digital output value	Resolution	
		Analog input	When set	mA gain and 0\ When set	When set		0 to 101/		500µV	
			to 1/4000	to 1/8000	to 1/12000		0 to 10V 0 to 5V	0 to 20000	250μV	
I/O characteristics	-	10V	4000	8000	12000	1	1 to 5V	0 10 20000	200μV	
I/O CHARACTERISTICS	F	5V or 20mA	2000	4000	6000	Voltage	-10 to 10V	-20000 to 20000	500μV	
		0V or 0mA	0	0	0	Voltage	1 to 5V	-5000 to 22500		
		-5V or -20mA	-2000	-4000	-6000	-	(Extended mode)		200µV	
		-10V	-4000	-8000	-12000	1	User range setting	-20000 to 20000	307µV	
		100	Digital output value				0 to 20mA		1000nA	
		Analog input	When set	When set	When set		4 to 20mA	0 to 20000	800nA	
Maximum resolution			to 1/4000	to 1/8000	to 1/12000	Current	4 to 20mA	-5000 to 22500		
		Voltage input	2.5mV	1.25mV	0.83mV	Curron	(Extended mode)		800nA	
		Current input	10µA	5µA	3.33µA	1	User range setting	-20000 to 20000	1230nA	
		Digital output value								
			(With a 5V/20mA gain and 0V/0mA offset)			Ambient temperature 25±5°C: Within ±0.1% (±20digit) Ambient temperature 0 to 55°C: Within ±0.2% (±40digit)				
Overall accuracy		Analog input	When set When set When set							
			to 1/4000	to 1/8000	to 1/12000		Ambient temperature o ti	0 55 G: Willim ±0.2% (±4)	Jaigit)	
		Within ±1.0%	±40	±80	±120					
Maximum conversion spee	ed		20ms/channel			High speed: 20µs/channel, Medium speed: 80µs/channel, Low speed: 1ms/channel				
Absolute maximum input	Voltage		±15V			±15V				
Current			±30mA			30mA				
		channels/modu	ule		4 channels/module					
Between input terminal and programmable controller power supply  Between channels		Ph	otocoupler isola	ation		Photocoupler isolation				
			Non-isolated				Nor	n-isolated		
No. of occupied points			32 points				16	6 points		
Connected terminal block		20-	point terminal b	lock			18-point	terminal block		
Current consumption			0.4A					0.52A		
Notos										

#### Notes

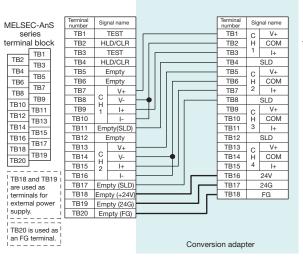
- areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### Program precautions

- 1) With A1S64AD and L60AD4, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) L60AD4 has a faster conversion speed than A1S64AD. As a result, the possibility exists that noise not introduced in A1S64AD will be introduced as analog signals in L60AD4. In such a case, use an averaging processing function to remove the impact of the noise.

#### 2) ERNT-ASLT62DA Terminal block (20P)-Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-L series module model
ERNT-ASLT62DA	A1S62DA	2 channels	L60DA4

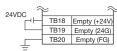


MELSEC-L series

ıc	111111111111111111111111111111111111111	טוטנ	, N
	TB2	TB1	
		TB3	
	TB4	TB5	
	TB6	TB7	
	TB8	TB9	
	TB10	TB11	
	TB12	TB13	
	TB14	-	
	TB16	TB15	
	TB18	TB17	

#### Notes

For the power supply terminals (TB16 and TB17) on the L60DA4 side, use terminal numbers TB18 and TB19 on the MELSEC-AnS series side.



- 2. Ground the FG terminal (TB18) on the L60DA4 side using terminal number TB20 on
- the MELSEC-AnS series side. 3. L60DA4 does not have an offset/gain setting terminal or analog output hold/clear setting terminal. Analog output hold/clear setting needs to be performed using L60DA4 intelligent function module switch settings. For offset/gain and analog output hold/clear settings, refer to the L60DA4 user's manual.

#### [Specification comparison chart]

	Mo	odel				ME	ELSEC-AnS se	ries				MELS	SEC-L series		
Specification							A1S62DA					L	_60DA4		
opeomedien.			16-bit signed binary												
							oltage output		urre	ent output					
Digital input				1/4000			4000 to 4000			to 4000			80 to 20479	-707)	
				1/8000		-	8000 to 8000		0 1	to 8000		(During the use of scali	ng function -32768 to 32	(767)	
				1/12000		-1:	2000 to 12000		0 to	to 12000					
Analog output	Voltage			-10 to (	0 to 10	VDC (E	kternal load res	istance: 2k	Ωto	o 1MΩ)	-1	0 to 10VDC (External loa	ad resistance value: 1kΩ	to 1MΩ)	
-trialog output	Current				20mA	DC (Ext	ernal load resis	tance: 0Ω t	0 6		0	to 20mA DC (External lo	ad resistance value: 0Ω t	ο 600Ω)	
				Resolution	1/4		1/8000	1/12000	)	Analog output value					
					40		8000	12000	_	10V	Ana	log output range	Digital output value	Resolution	
			Voltage		20		4000	6000	_	5V		99-			
			olta		(		0	0	_	0V					
O characterist	ics		×	Digital input		000	-4000	-6000	$\dashv$	-5V		0 to 5V	0 to 20000	250µV	
				value		000	-8000	-12000	$\dashv$	-10V		1 to 5V		200µV	
			l ti	t l		40		8000	12000	$\dashv$	20mA	Voltage	-10 to 10V		500µV
			Current		20		4000	6000	$\dashv$	12mA		User range	-20000 to 20000	333µV	
					0 0 Voltage output		0	,,,,,,,	4mA ent output		setting 0 to 20mA		1000nA		
						2.5mV (10V)	' '				4 to 20mA	0 to 20000	800nA		
Maximum resol	ution		1/8000			1.25mV (10V)		_		uA (20mA)	Current	User range			
			1/12000		0.83mV (10V)			_	uA (20mA)		setting	-20000 to 20000	700nA		
							( , ,			( ' ' '	At an ambient temperature of 25±5°C, within ±0.1%				
o "						Volta	ge: ±1.0% (±10	00mV)			(Voltage: ±10mV, Current: ±20µA)				
Overall accurac	У			Current: ±1.0% (±200µA)							At an ambient temperature of 0 to 55°C, within ±0.3%				
			· · · ·								(Voltage: ±30mV, Current: ±60μA)				
Maximum conv	areion enaod			Within 25ms / 2 channels							80µs/channel				
VIAXIIII COIIV						(Sa	ame for 1 chan	nel)			ουμο/ criainiei				
Absolute maximu		tage					±12V				-				
	' Cur	rent					28mA				-				
No. of analog o						2	channels/modu	ıle			4 channels/module				
Between outpu		.				Pho	tocoupler isola	ition			Photocoupler isolation				
Between output terminal and programmable controller power supply Between channels Between external power supply and analog output		supply					Non-isolated				Non-isolated				
		nnly					Non-isolated					INO	n-isolated		
		ppiy	-								Transformer isolation				
No. of occupied points 32 points				16 points											
Connected term	ninal block					20-	ooint terminal b	lock				18-point	terminal block		
Current consum	ption						0.80A						0.16A		
External nower	Volt	tage					_				24VDC +20%, -15%				
External power supply Current			_								0.18A				

- 4. For mareas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### Program precautions

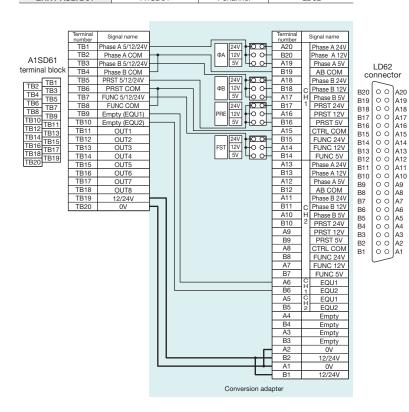
- 1) With A1S62DA and L60DA4, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
- 2) The L60DA4 CH3 and CH4 are not applicable.

### For High-Speed Counter Modules

### 1-module type

#### 1) ERNT-ASLTD61 Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-L series module model
EDNT ACITORS	A1CD61	1 obennel	I Dea



#### Notes

- 1. Set the short bar of the setting pin located inside the conversion adapter to 24V during <a href="Mailto:24V during [2V] input">Mailto:24V during [2V] input</a>, and to 5V during <a href="Mailto:35V input">Mailto:35V input</a>, in accordance with the input voltage of the phase A pulse input <a href="Mailto:46A">Mailto:46A</a>, the phase B pulse input <a href="Mailto:46A">Mailto:46A</a>, the phase B pulse input <a href="Mailto:46A">Mailto:46A</a>, the preset input <a href="PRE">PRE</a>), and the function start input <a href="FST">FST</a>). Note that, at the time of factory shipment, all channels are set to <a href="Mailto:24V">Mailto:24V</a>.
- 2. LD62 does not have an A1SD61 limit switch output function. The OUT1 (TB11) to OUT8 (TB18) terminals therefore cannot be used. In a case where a substitution is to be made using a LD62 matching output function [CH1 EQU1 terminal (A6), CH1 EQU2 terminal (B6)], use the A1SD61 empty terminals [EQU1 terminal (TB9), EQU2 terminal (TB10)]. Note that specifications will differ, such as a fewer number of settings, etc.

	TB9	Empty (EQU1)
	TB10	Empty (EQU2)
	TB11	OUT1
	TB12	OUT2
	TB13	OUT3
	TB14	OUT4
	TB15	OUT5
	TB16	OUT6
	TB17	OUT7
	TB18	OUT8
$\pm$	TB19	12/24V
τ	TB20	0V

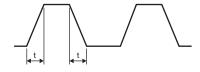
3. After setting the voltage setting pin, connect the external wiring.

#### [Specification comparison chart]

Opcomoduc	on companison c	_				
Model MELSEC-AnS series		MELSEC-AnS series	MELSEC-L series			
Specification		A1SD61	LD62			
		Switched by setting pin	Switched by intelligent function module switch setting			
Counting spee	ed switch settings	50k side 10k side	200k 100k 10k (10k to 200kPPS) (10k to 100kPPS) (10kPPS or less)			
No. of channel	ls	1 channel	2 channels			
Count input signal	Phase	1-phase input 2-phase input	1-phase input (1x/2x) 2-phase input (1x/2x/4x) CW/CCW input			
par oigna	Signal level (ΦΑ, ΦΒ)		5/12/24VDC 2 to 5mA			
	Maximum counting speed	1-phase input: 50kPPS 1-phase input: 10kf 2-phase input: 50kPPS 2-phase input: 7kP	1 200kPPS (*1)   100kPPS (*1)   10kPPS (*1)			
	Counting range		32-bit signed binary -2147483648 to 2147483647			
	Model	UI	DOWN preset counter + Ring counter function			
Counter	Minimum count pulse width (duty ratio: 50%)	20µs  50µs  (1-phase input)  10µs  71µs  71µs  71µs  71µs  71µs  (2-phase input)	During 2-phase input Minimum phase difference:  1.25µs  During 2-phase input Minimum phase difference:  2.5µs  During 2-phase input Minimum phase difference:  2.5µs			
Limit switch	Comparison range	32-bit signed binary				
output	Comparison result	NO contact operation dog ON address ≤ Count value ≤ Dog OFF NC contact operation dog OFF address ≤ Count value ≤ Dog ON	ddress			
Coincidence	Comparison range	-	32-bit signed binary			
output	Comparison result	-	Setting value < Count value  Setting value = Count value  Setting value > Count value			
External input	Preset		5/12/24VDC			
Function start			2 to 5mA			
External output	Limit switch output	Transistor (open collector) output 12/24VDC, 0.1A/point, 0.8A/common	-			
External output	Coincidence output	-	Transistor (sink type) output 2 points/channels 12/24VDC, 0.5A/point, 2A/common			
No. of I/O occupied points 32 points			16 points			
Connection me		20-point terminal block	40-pin connector			
Internal current consumption (5VDC) 0.35A		0.35A	0.31A			

\*1: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below. When a pulse with a large rise/fall time is counted, miscounting may occur. Caution is required.

Counting speed switch	Common to 1-phase input and 2-phase input			
Rise/Fall time setting	200k	100k	10k	
t=1.25µs or less	200kPPS	100kPPS	10kPPS	
t=2.5µs or less	100kPPS	100kPPS	10kPPS	
t=25µs or less	-	10kPPS	10kPPS	
t=500µs	-	_	500PPS	



- For areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.
   For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- Program precautions

  1) With A1SD61 and LD62, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

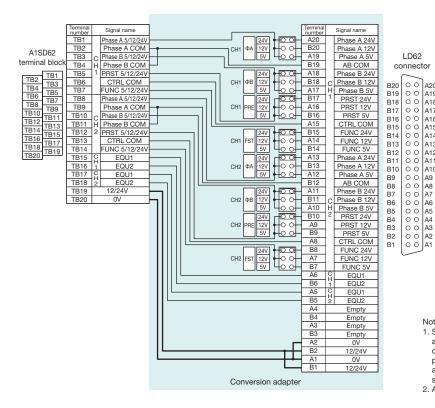
  2) The LD62 coincidence output function is used as a substitute for the A1SD61 limit switch output function. The sequence program needs to be changed.

  3) For LD62, use the CH1 input/output signals (X, Y) and buffer memory address. CH2 does not operate.

  4) The counting speed setting set using the setting pin with A1SD61 is set using the intelligent function module switch setting with LD62.

#### 2) ERNT-ASLTD62 Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-L series module model
ERNT-ASLTD62	A1SD62	2 channels	LD62



#### Notes

A20 A19 A18

A17 A16 A15 A14

A13 A12 A11 A10

- Notes

  1. Set the short bar of the setting pin located inside the conversion adapter to 24V during [24V] input, to 12V during [12V] input, and to 5V during [5V] input, in accordance with the input voltage of the phase A pulse input [ΦA], the phase B pulse input [ΦB], the preset input [PRE], and the function start input [FST]. Note that, at the time of factory shipment, all channels are set to [24V].

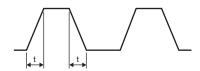
  2. After setting the voltage setting pin, connect the external wiring.

#### [Specification comparison chart]

Specification  A18D62  LD62  Switched by setting pin  Switched by intelligent function module switch setting  100k side  10k s	Opecificatio	in companison ci	iaitj				
Counter  Cou		Model	MELSEC-AnS series		MELSEC-L series		
Counter  Minimum count pulse width (duty ratio: 50%)  Counter  Minimum count pulse width (duty ratio: 50%)  Counter  Cou	Specification		A1SD62		LD62		
100k side	Switched by setting pin		Switched by	Switched by intelligent function module switch setting			
No. of channels	Counting spee	d switch settings	100k sido	10k sido	200k	100k	
Phase   1-phase input   2-phase input   2-phase input   2-phase input   1/2/24/DC   2-phase input   2-phase inpu			TOOK SIDE	TOK Side	. ,	(10k to 100kPPS)	(10kPPS or less)
Phase   1-phase input   2-phase input   2-phase input   (1/22/4k)	No. of channel	S			2 channels		
Signal level (pA, dB)		Phase	1-phase input				
Signal level (0A, 0B)	Count	Filase	2-phase input				
Maximum 1-phase input: 10kPPS 2-phase input: 10kPPS 2-phase input: 10kPPS 2-phase input: 10kPPS (1)	input signal	Signal level			5/12/24VDC	011/0011 IIIput	
Counter  Counter  Minimum count puse width (duty ratio: 50%)  Comparison range  Comparison result  Compariso		(ФА, ФВ)			2 to 5mA		
Counter  Counter  Counting range  Counting ran		Maximum	1-phase input: 100kPPS	1-phase input: 10kPPS	200kPPS (*1)	100kPPS (*1)	10kPPS (*1)
Counter  Minimum count pulse width (duty ratio: 50%)  Comparison range  Comparison r		counting speed			2008110(1)	` ,	TOKEFS ( I)
Counter  Minimum count pulse width (duty ratio: 50%)  Comparison range  Comparison range  Comparison result  Comparison result  External input  External input  Coincidence output  Coincidence output  External longth  External longth  External longth  External longth  Coincidence output  Coincidence output		Counting range	,			,	
Counter  Minimum count pulse width (duty ratio: 50%)  Comparison range  Comparison result  Comparison result  External input  Preset Function start  External output  Coincidence output  Coincidence output  Preset Function start  External output  Coincidence output  Coincidence output  Comparison result  Setting value < Count value Setting valu			0 to 16		(N		
Counter  Minimum count pulse width (duty ratio: 50%)  (1- or 2-phase input)  Coincidence output  Comparison range  Comparison result  Comparison result  Comparison result  External input  Preset Function start  External output  Coincidence output  Coincidence output  Coincidence output  Preset Function start  External output  Coincidence output  Coincidence output  Comparison result  Comparison result  Comparison result  Comparison result  Comparison result  Setting value < Count value Setting value >		Model		UP/DOW	n preset counter + Ring counter	er function	
Coincidence output         Comparison result         Setting value < Count value           Setting value = Count value         Setting value > Count value           Setting value > Count value         Setting value > Count value           Function start         5/12/24VDC           External output         Transistor (sink type) output 2 points/channels           12/24VDC, 0.5A/point, 2A/common           No. of I/O occupied points         32 points         16 points           Connection method         20-point terminal block         40-pin connector	Counter	pulse width (duty ratio: 50%)	(1- or 2-phase input)	50µs 50µs (1-phase input)  142µs  71µs 71µs (2-phase input)	2.5µs 2.5µs  During 2-phase input Minimum phase difference:	During 2-phase input Minimum phase difference: 2.5µs	50μs   50μs     During 2-phase input   Minimum phase difference:
output         Comparison result         Setting value = Count value           External input         Preset         5/12/24VDC           Function start         2 to 5mA           External output         Coincidence output         Transistor (sink type) output 2 points/channels           12/24VDC, 0.5A/point, 2A/common           No. of I/O occupied points         32 points         16 points           Connection method         20-point terminal block         40-pin connector		Comparison range	24-bit binary			32-bit signed binary	
Setting value > Count value					ů .		
External input         Preset Function start         5/12/24VDC           External output         2 to 5mA           Transistor (sink type) output 2 points/channels 12/24VDC, 0.5A/point, 2A/common           No. of I/O occupied points         32 points         16 points           Connection method         20-point terminal block         40-pin connector	output						
External input    Function start   2 to 5mA		Preset					
External output Coincidence output Coincidence output Coincidence output Statement Sta	External input		-				
No. of I/O occupied points     32 points     16 points       Connection method     20-point terminal block     40-pin connector	External output		( ), / ( )				
Connection method 20-point terminal block 40-pin connector	No. of I/O occi	upied points	32 p				
Internal current consumption (5VDC) 0.1A 0.31A	Connection me	ethod			·		
	Internal current	consumption (5VDC)	0.	1A	0.31A		

\*1: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below. When a pulse with a large rise/fall time is counted, miscounting may occur. Caution is required.

Counting speed switch	Common to 1-phase input and 2-phase input			
Rise/Fall time setting	200k	100k	10k	
t=1.25µs or less	200kPPS	100kPPS	10kPPS	
t=2.5µs or less	100kPPS	100kPPS	10kPPS	
t=25µs or less	-	10kPPS	10kPPS	
t=500µs	-	_	500PPS	



- 2. For areas, verify that the MELSEC-L series module specifications satisfy the specifications of the connected device/equipment.

  3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-L series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- Program precautions

  1) With A1SD62 and LD62, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) The counting speed setting set using the setting pin with A1SD62 is set using the intelligent function module switch setting with LD62.

## **Base Adapter**

### **Specifications**

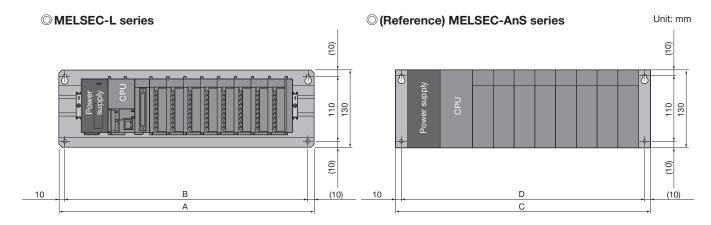
- •The MELSEC-L series can be installed using the mounting holes of the MELSEC-AnS series base unit. (There is no need to drill holes for mounting.)
- •The base adapter width dimension is the same as that of the MELSEC-AnS series base unit prior to replacement. As a result, the following precautions apply even if you do not use a space module (LG69).

	MELSEC-AnS series compatible		
Base adapter model	' '	Replacement Precautions	
	base unit model name		
ERNT-ASLB38	A1S38B		
ENN I-AGEDOO	A1S38HB		
ERNT-ASLB35	A1S35B	-	
ERNT-ASLB33	A1S33B	If extension blocks are connected, the number of modules that can be mounted is two (*1).	
ERNT-ASLB32	A1S32B	If extension blocks are connected, the number of modules that can be mounted is one (*1).	
	A1SJCPU		
ERNT-ASLBJ	A1SJCPU-S3	_	
	A1SJHCPU		
ERNT-ASLB68	A1S68B	-	
ERNT-ASLB65	A1S65B	-	
ERNT-ASLB58	A1S58B	-	
ERNT-ASLB55	A1S55B	-	
ERNT-ASLB52	A1S52B	The number of modules that can be mounted is one (*1).	

<sup>\*1:</sup> Module with a width dimension of 28.5 mm.

### **Mounting Dimensions**

- •The base adapter mounting holes (four) share the same dimensions as those for the MELSEC-AnS series base unit. There is no need to drill additional holes on the control panel.
- •When replacing the MELSEC-AnS series with the MELSEC-L series, the slot positions where the module is mounted are different. Adjust the wiring length prior to use.



Base adapter model	А	В	MELSEC-AnS series base unit model	С	D
ERNT-ASLB38	430	410	A1S38B A1S38HB	430	410
ERNT-ASLB35	325	305	A1S35B	325	305
ERNT-ASLB33	255	235	A1S33B	255	235
ERNT-ASLB32	220	200	A1S32B	220	200
ERNT-ASLBJ	330	310	A1SJCPU A1SJCPU-S3 A1SJHCPU	330	310
ERNT-ASLB68	420	400	A1S68B	420	400
ERNT-ASLB65	315	295	A1S65B	315	295
ERNT-ASLB58	365	345	A1S58B	365	345
ERNT-ASLB55	260	240	A1S55B	260	240
ERNT-ASLB52	155	135	A1S52B	155	135

## **Usage Precautions**

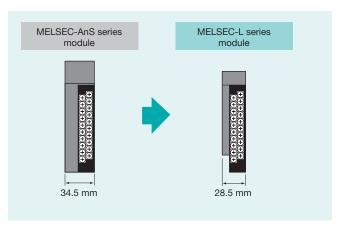
The conversion adapter is used to compensate the difference of the pin assignment when the MELSEC-AnS series module is replaced with the MELSEC-L series module.

When replacing MELSEC-AnS series with MELSEC-L series, be sure to refer to the manual of each module of the MELSEC-L series to verify the differences in performance, function, CPU input/output signals, buffer memory addresses, and the like prior to use.

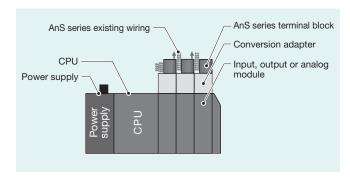
We also recommend that you refer to the "Transition from MELSEC-AnS/QnAS (Small Type) Series to L Series Handbook" published by Mitsubishi Electric.

#### **Module Width**

1) The module width dimension is smaller (34.5 mm  $\rightarrow$  28.5 mm) and the wiring area is smaller, requiring verification during mounting.



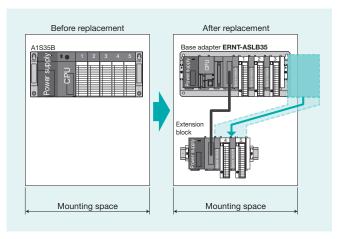
2) If the wiring interferes with a mounted module, lift the wiring forward, etc., so that there is no interference.



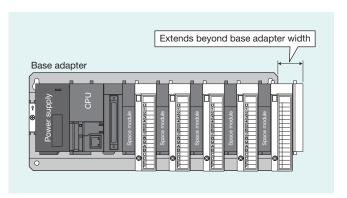
3) When the replacement method described in 2) above is not possible, consider using the Mitsubishi LG69 space module.



4) If the system after replacement does not fit in the installation space (width), consider using extension blocks for branch connection.



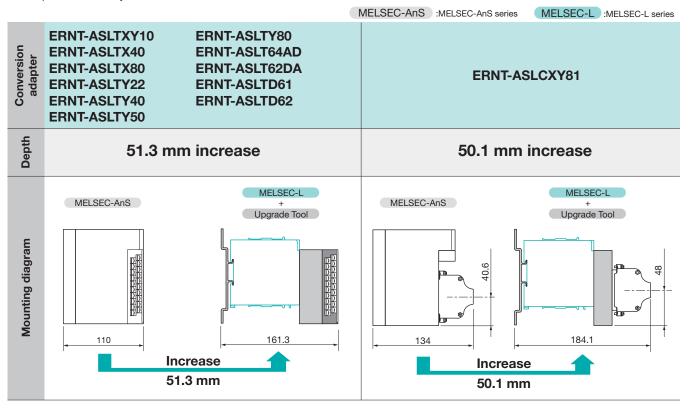
5) Do not use this if the MELSEC-L series system extends beyond the base adapter width dimension.



### **Depth / Height**

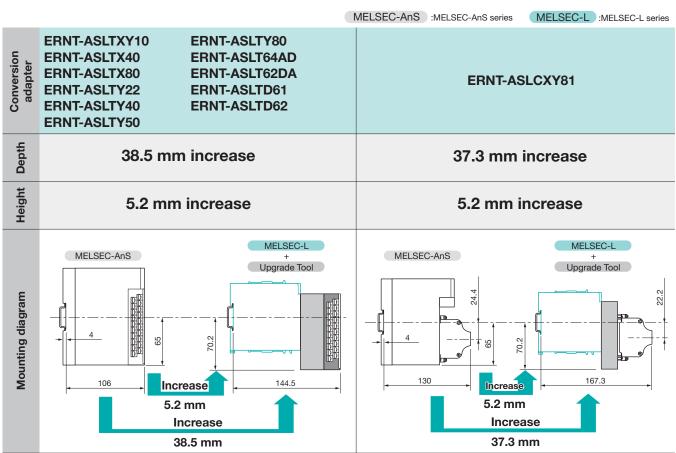
#### When using the base adapter

The depth increases by 50.1 to 51.3 mm.



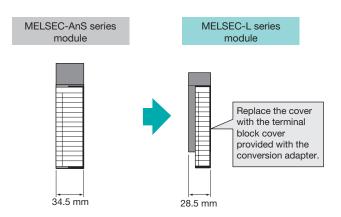
### When using the DIN rail

The depth increases by 37.3 to 38.5 mm, and the height increases by 5.2 mm toward the lower side.



### **Terminal Block Cover**

The terminal block cover of the MELSEC-AnS series is larger than the MELSEC-L series module width, and therefore needs to be replaced with the terminal block cover provided with the conversion adapter.



## **External Dimensions**

### **Conversion Adapter**



#### Model name:

**ERNT-ASLTXY10** 

**ERNT-ASLTX40** 

**ERNT-ASLTX80** 

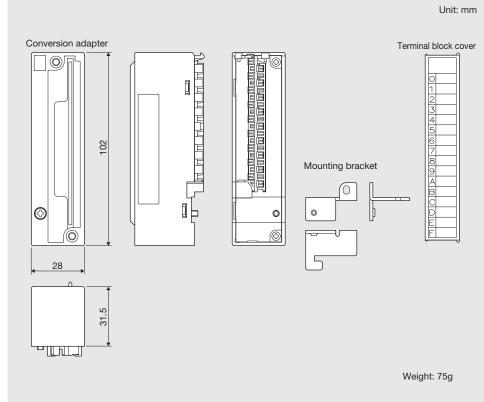
**ERNT-ASLTY22** 

**ERNT-ASLTY40** 

**ERNT-ASLTY50 ERNT-ASLTY80** 

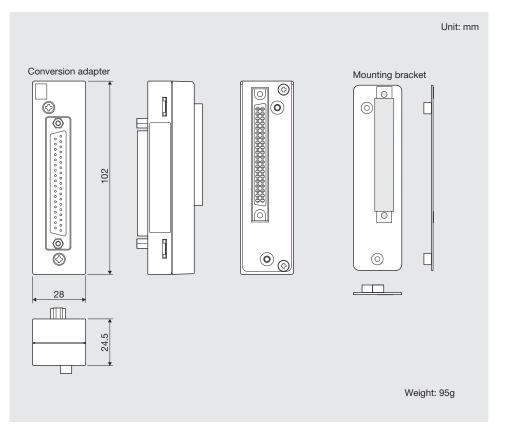
**ERNT-ASLT64AD** 

**ERNT-ASLT62DA** 



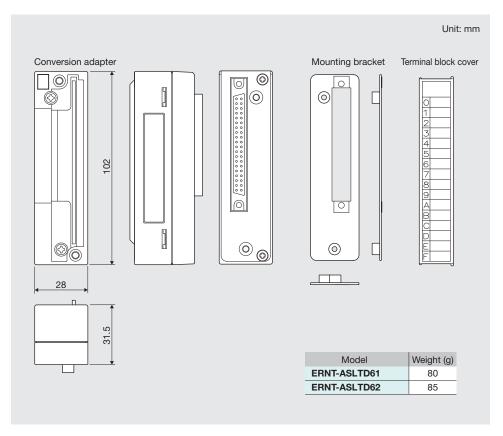


Model name: **ERNT-ASLCXY81** 





Model name: **ERNT-ASLTD61 ERNT-ASLTD62** 



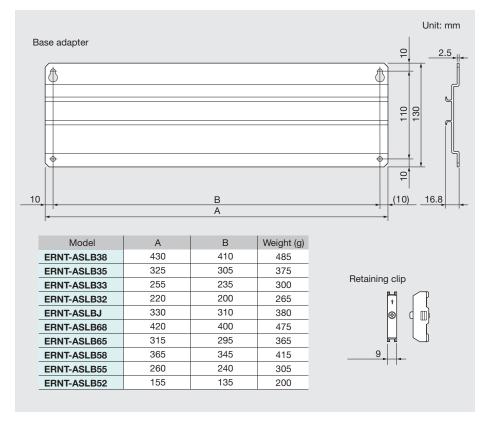
### **Base Adapter**



#### Model name:

**ERNT-ASLB38 ERNT-ASLB35 ERNT-ASLB33 ERNT-ASLB32 ERNT-ASLBJ ERNT-ASLB68 ERNT-ASLB65 ERNT-ASLB58 ERNT-ASLB55** 

**ERNT-ASLB52** 





# MELSEC-Ans Series ⇒ MELSEC-Q Series Upgrade Tool

## Upgrading from the MELSEC-AnS series to the MELSEC-Q Series

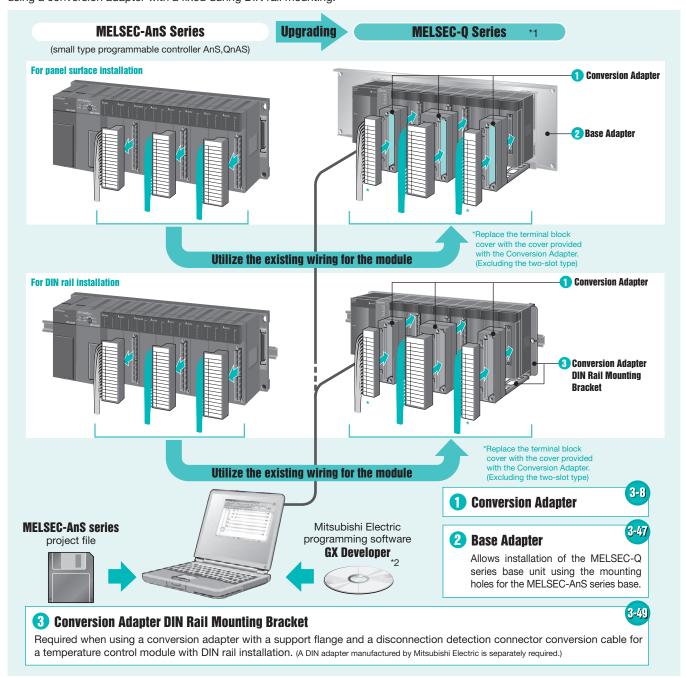
- Simplifies replacement with the MELSEC-Q series
- The upgrade tool makes it easy to replace the Mitsubishi Electric programmable controller MELSEC-AnS series with the MELSEC-Q series.
- Significantly shortens the time required for input, output, analog, high-speed counter, temperature input,
  - and temperature control module wiring, and significantly reduces wiring errors

    •The upgrade tool allows you to connect the wiring connected to the MELSEC-AnS series input, output, analog, high-speed counter, temperature input, and temperature control modules as is to the MELSEC-Q series using a conversion adapter. (Some power supply and common terminal connection changes required.)
  - By using a base adapter, the MELSEC-Q series can be installed using the MELSEC-AnS series mounting holes. (Additional drilling of holes is not required.)

    Compatible with DIN rail installation as well.
- Permits reuse of sequence programs
  - The upgrade tool allows you to change from the MELSEC-AnS series to the MELSEC-Q series and reuse programs by changing the PLC type in the Mitsubishi Electric programming software GX Developer.

### **Product Overview**

The MELSEC-AnS series / MELSEC-Q series upgrade tool comprises a "conversion adapter" that changes the existing wiring connected to the Mitsubishi Electric programmable controller MELSEC-AnS series modules to wiring applicable to the modules of the MELSEC-Q series, and a "base adapter" that makes it possible to install the MELSEC-Q series using the mounting holes of the MELSEC-AnS series base unit. This upgrade tool also includes a "conversion adapter DIN rail mounting bracket" required when using a conversion adapter with a fixed during DIN rail mounting.

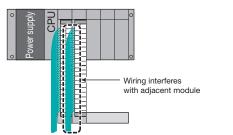


<sup>\*1:</sup> When replacing the MELSEC-AnS series with the MELSEC-Q series, verification of the mounting is required due to the change in module width and depth dimensions. For details, refer to the "Usage precautions" (page 3-50) in this catalog.

The implication of the MELSEC And Series (existing program) to the MELSEC-Q series by changing the PLC type in the Mitsubshi Electric.

GX Developer. For details, refer to the GX Developer Operating Manual. Tools that support program replacement with the Q series are also provided by Mitsubishi Electric.

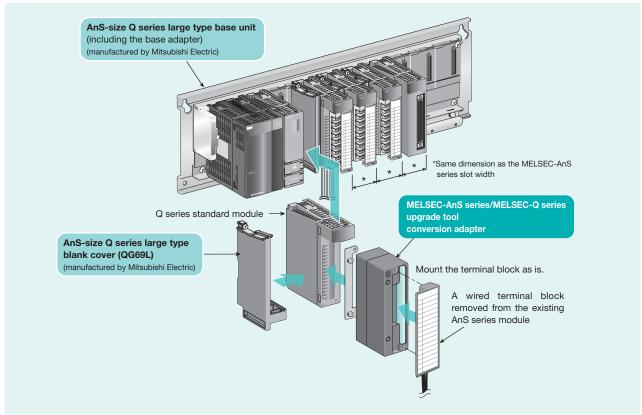
If the wiring interferes with an adjacent module, wiring space can be secured by utilizing the AnS-size Q series large type base unit.



### MITSUBISHI ELECTRIC CORPORATION For MELSEC-Ans Series (small type) \$\rightarrow\$MELSEC-Q Series

## **Upgrading using the AnS-size Q series large type base unit**

The slot width of the AnS-size Q series large type base unit is the same as the slot width of the MELSEC-AnS series (small type) base unit, alleviating wiring interference with adjacent modules.



- •The AnS-size Q series large type base unit (panel mounting type) has the same dimensions as the MELSEC-AnS (small type) series. There is no need to drill holes for mounting during installation.
- •The AnS-size Q series large type base unit is provided with screw holes for securing the fixture that comes with the conversion adapter.
- •A 2-slot type conversion adapter and a partial 1-slot type conversion adapter are not applicable. For details, see the Model List (page 3-5 to 3-6).

### AnS-size Q Series Large Type Base Unit List

[Panel mounting type]

AnS series model	Q series large type base model
A1S35B	Q35BLS
A1S38B	Q38BLS
A1S65B	Q65BLS
A1S68B	Q68BLS
A1S55B	Q55BLS

[DIN rail mounting type]

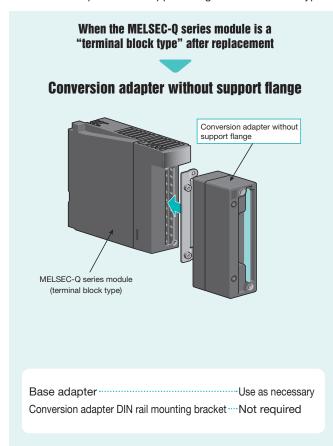
AnS series model	Q series large type module model
A1S35B	Q35BLS-D
A1S38B	Q38BLS-D
A1S65B	Q65BLS-D
A1S68B	Q68BLS-D
A1S55B	Q55BLS-D

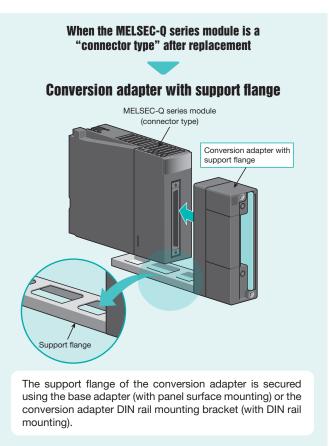
#### AnS-size Q Series Large Type Blank Cover

AnS series model	Q series large type blank cover model
	QG69LS

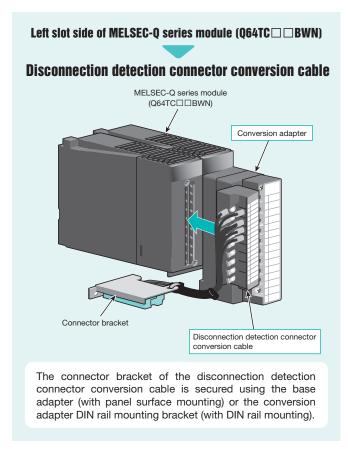
### **Types of Conversion Adapters**

There are two types of conversion adapters: a conversion adapter without a support flange for a terminal block type, and a conversion adapter with a support flange for a connector type.



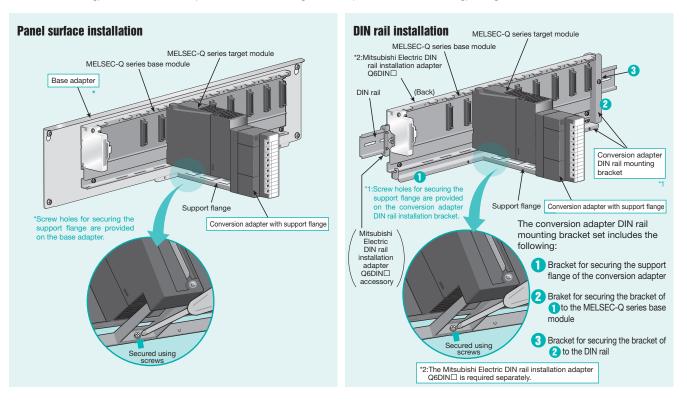


Further, a temperature control module with a disconnection detection function converts the wiring via a "disconnection detection connector conversion cable" in the left slot side of the MELSEC-Q series module (Q64TC BWN).



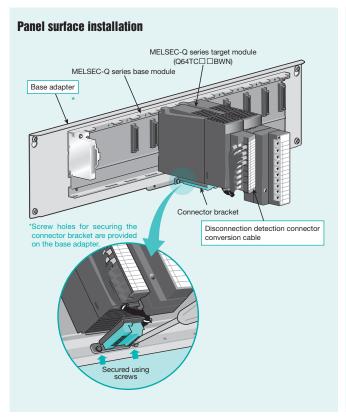
## Installing the conversion adapter with support flange

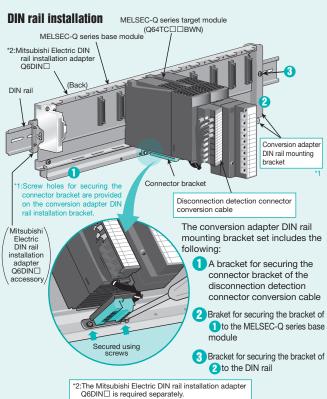
When using the conversion adapter with a support flange, reliably secure the support flange to the base adapter (with panel surface mounting) or conversion adapter DIN rail mounting bracket (with DIN rail mounting) using screws.



## Installing the disconnection detection connector conversion cable

The disconnection detection connector conversion cable requires a connector bracket to be secured to the base adapter (with panel surface mounting) or the conversion adapter DIN rail mounting bracket (with DIN rail mounting) using screws.





# **Model List**

# **Onversion Adapter**

When selecting a conversion adapter, be sure to refer to the module specification comparison charts and notes on pages 3-8 to 3-46. These pages indicate precautions such as differences in the number of points per common. For detailed specifications and general specifications not stated in the module specification comparison charts, refer to the user's manual of the corresponding module. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected

### For Input/Output Modules

### [1-slot type]

 $\sqrt{\ }$ : Applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

-	,				4 . , (bb.,oab.o.co	merore a como ange	rypo bacc an	( ,	.0 0.20)		
Input	MELSEC-AnS series	MELSEC-Q series	Applicability		Conversion adapter						
/	module model	module model	of Q series large	Model		Shape		No. of input/	Page		
Output	before replacement	after replacement	-type base unit	iviodei	MELSEC-AnS series	MELSEC-Q series	Support flange	output points			
lan.ut	A1SX10	QX10	_ √			 					
Input	A1SX10EU	QXIU	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	EDNIT ACOTYVIA		  -	\A/!\ \				
0.44	A1SY10	0)/10	.,	ERNT-ASQTXY10		 	Without		3-8		
Output	A1SY10EU	QY10	<b>√</b>			  -					
	A1SX40	QX40, QX70	<b>√</b>			 					
	A1SX40-S2	QX40	√	ERNT-ASQTX40  Terminal block (20 points)	QTX40	Terminal block	Without				
1	A1SX40-S1	QX40-S1	√						3-9		
Input	A1SX80								16 points	3-9	
	A1SX80-S1	QX80	√		(18 points)	(20 points) (18 points) Without					
	A1SX80-S2					  -					
	A1SY22	QY22	<b>√</b>	ERNT-ASQTY22		 	Without				
	A1SY40	07/400	.1	EDNIT ACOTY 40		  -	\A/!+l +		3-10		
Output	A1SY40P	QY40P	√	ERNT-ASQTY40		 	Without				
	A1SY50	QY50	√	ERNT-ASQTY50		)    -	Without	ıt	2 44		
	A1SY80	QY80	√	ERNT-ASQTY80			Without		3-11		

### [2-slot type]

x: Not applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

Input	MELSEC-AnS series	MELSEC-Q series	Applicability		Conversion		,,		
/	module model		of Q series large		00,,,,0,0,0,0	Shape		No. of input/	Page
Output		after replacement	-type base unit	Model	MELSEC-AnS series				
Input	A1SX20 A1SX20EU	QX28 × 2 modules	×	ERNT-ASQTX20	Terminal block	Terminal block	Without		3-12
Output	A1SY60	QY68A × 2 modules	×	ERNT-ASQTY60	(20 points)	(18 points) × 2	Without	16 points	3-13
Output	A1SY60E	QY68A × 2 modules	×	ERNT-ASQTY60E		× 2	Without		3-14

Note 1. The input/output in the table below are not conversion adapter compatible and therefore require rewiring. Be sure to verify that the MELSEC-Q series module specifications satisfy the specifications of connected devices and equipment.

Input/Output		nS series module model ore replacement	MEL	SEC-Q series module mo after replacement	del	Universal conversion
	Model	No. of points	Model	No. of points	No. of required modules	adapter
	A1SY14EU	12 points	QY10	16 points	1 module	
Output	A1SY18A (EU)	8 points	QY18A	8 points	1 module	
	A1SY68A	8 points	QY68A	8 points	1 module	/*·1\
Combined input/output	A1SX48Y58	8 input points and 8 output points	QX48Y57	8 input points and 7 output points	1 module	(*1)
Input	A1SX30	16 points	QX40 (24VDC positive common)	16 points	1 module	
Combined input/output	A1SX48Y18	8 input points and 8 output points	QX40 + QY10	16 points and 16 points	1 module and 1 module	
Output	A1SY28A	8 points				
Output	A1SY28EU	8 points	There is no applicable MELC	NEC O series medule		
Dynamic input	A1S42X	16/32/48/64 points	There is no applicable MELS	bec-Q series module.		_
Dynamic output	A1S42Y	16/32/48/64 points				

<sup>\*1:</sup> The universal conversion adapter (see 7-6) can be used for replacement.

Note 2. The input/output modules in the table below can use the existing wiring as is. Be sure to verify that the MELSEC-Q series module specifications satisfy the specifications of connected devices and equipment.

Input/ Output	MELSEC-AnS series module model before replacement	MELSEC-Q series module model after replacement	Input/ Output	MELSEC-AnS series module model before replacement	MELSEC-Q series module model after replacement
		QX41 (24VDC)		A1SX42-S2	QX42
	A1SX41	QX41-S2 (24VDC)	lana sak	A15X42-52	QX41-S2 (2 modules are required)
		QX71 (12VDC)	Input	A1SX42-S1	QX42-S1
	A1SX41-S1	QX41-S1		A1SX82-S1	QX82-S1 (negative common)
	A1SX41-S2	QX41		A1SY41	QY41P
	A13A41-32	QX41-S2		A1SY41P	QT41F
	A1SX71	QX71 (5VDC/24VDC)		A1SY81	QY81P
Input	A15X/1	QX41-S1 (24VDC (positive common))	Outmut	A1SY81EP	QTOIP
input	A1SX81	QX81 (24VDC negative common)	Output	A1SY71	QY71
	AISABI	QX81-S2 (24VDC (negative common))		A1SY42	QY42P
	A1SX81-S2	QX81 (negative common)		A1SY42P	Q142F
	A13A81-32	QX81-S2 (negative common)		A1SY82	QY82P
		QX42 (24VDC)		A1SH42	QH42P (24VDC input)
	A1SX42	QX41-S2 (2 modules are required)	Combined	A1SH42P	QH42P (24VDC Iliput)
	A13A42	(24VDC)	input/output	A1SH42-S1	QH42P
		QX72 (12VDC)		A1SH42P-S1	QI I42F

## For Analog Modules [1-slot type]

 $\surd$  : Applicable to MELSEC-Q series large type base unit (MELSEC-AnS size) ×: Not applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

	MELSEC-AnS series	MELSEC-Q series	Applicability		Conversion ad	apter			
Input/	modulo model	module model	of Q series	Shape				No. of	Page
Output	before replacement	after replacement	large type base unit	Model	MELSEC-AnS series	MELSEC-Q series	Support flange	channels	1 age
	A1S64AD	Q64AD	√	ERNT-ASQT64AD		Terminal block	Without	4 channels	3-15
Input	A1S68AD (Voltage input)	Q68ADV	√	ERNT-ASQT68AD		(18 points)	Without		0.40
IIIput	A1S68AD (Current input)	Q68ADI	<b>√</b>	ENNI-A3Q100AD	Terminal block (20 points)	(10 points)	Without	8 channels	3-16
	A1S68AD	Q68AD-G	× (*2)	ERNT-ASQT68AD-G		Connector (40P)	With		3-17
	A1S62DA	Q62DAN	√	ERNT-ASQT62DA		Terminal block	Without	2 channels	3-18
Output	A1S68DAV	Q68DAVN	V	ERNT-ASQT68DA			\A/ithat	8 channels	3-19
	A1S68DAI	Q68DAIN	<b>√</b>	ENNI-ASQ100DA			vvitriout	o chamileis	3-19
Input/	A1S63ADA	Q64AD2DA	× (*2)	ERNT-ASQT63ADA		(18 points)	\\/ithat	3 channole	2 00
Output	ATOUGADA	QU4ADZDA	× ( 2)	ERNI-ASQ163ADA			vviii10ut	/ithout 3 channels	3-20

<sup>2:</sup> Reason: The MELSEC-Q series large type blank cover QG69LS (MELSEC-AnS series size) cannot be mounted on the MELSEC-Q series module.

### For High-Speed Counter Modules [1-slot type]

 $\sqrt{\ }$ : Applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

	MELSEC-AnS series	MELSEC-Q series	Applicability		Conversion ada	apter			
Input/	module model	module model	of Q series			Shape		No. of	Page
Output	before replacement	after replacement	large type base unit	Model	MELSEC-AnS series	MELSEC-Q series	Support flange	channels	, ago
		QD62	√						
	· · · ·	QD62-H01	√	ERNT-ASQTD61	Terminal block (20 points)	Connector (40P)	With	1 channel	3-21
Input		QD62-H02	√						
Input	A1SD62	QD62	1	ERNT-ASQTD62			With	2 channels	3-25
- F	A1SD62E	QD62E	√	ERNI-ASQID02			VVIIII		3-25
	A1SD62D	QD62D	1	ERNT-ASQTD62D			With		3-28

## For Temperature Input Modules [1-slot type]

√: Applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

x: Not applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

		-	·		m mot applicable to me	LOLO a conconargo typ	0 2000 0.	(	
	MELSEC-AnS series	MELSEC-Q series	Applicability		Conversion ada	pter			
Input/	module model	module model	of Q series			Shape		No. of	Page
Output	before replacement	after replacement	large type	Model	MELSEC-AnS series	MELSEC-Q series	Support	channels	i ago
	before replacement	alter replacement	base unit		WILLOLO-AIIO SEIIES	WILLOLO-Q Series	flange	oriarii loio	
	A1S68TD	Q68TD-G-H01	√	ERNT-ASQT68TD-H01		Connector (40P)	With	8 channels	3-30
lanet	AISOOID	Q68TD-G-H02	× (*3)	ERNT-ASQT68TD-H02	Terminal block	Connector (40P)	With	o Charlineis	3-30
Input	A1S62RD3 (N)	00400	,	ERNT-ASQT62RD	(20 points)	Terminal block	\A/i+ba+	0 -11-	3-32
<b>⊢</b>	A1S62RD4 (N)	Q64RD	√	ERINI-AOQ 102RD		(18 points)		2 channels	3-32

<sup>3:</sup> Reason: The MELSEC-Q series large type blank cover QG69LS (MELSEC-AnS series size) cannot be mounted on the MELSEC-Q series module.

### For Temperature Control Modules [1-slot type]

√: Applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

MELSEC-AnS series	MELSEC-Q series	Applicability	Conversion adapter						
module model	module model	of Q series			Shape		No. of	Page	
before replacement	after replacement	large type base unit	Model	MELSEC-AnS series	MELSEC-Q series	Support flange	channels	rage	
A1S64TCTT-S1	Q64TCTTN	,	ERNT-ASQT64TCTT		I I	Without	4 channels	3-33	
A1S64TCTRT (*4)	Q041CTTN	√	ENVI-ASQ1041C11		 	Williout	4 CHAIITIEIS	3-33	
A1S64TCRT-S1	Q64TCRTN	,	ERNT-ASQT64TCRT		 	Without	4 channels	3-35	
A1S64TCTRT (*5)	Q041Chin	√	ENVI-ASQ1041CN1	Terminal block	Terminal block	Williout	4 CHAIITIEIS	3-33	
A1S62TCTT-S2	Q64TCTTN	,	ERNT-ASQT62TCTT	(20 points)	(18 points)	Without	O abannala	3-36	
A1S64TCTRT (*6)	Q041CTTN	√	ERNI-ASQ1021C11		I I I	Williout	2 channels	3-30	
A1S62TCRT-S2	Q64TCRTN	,	EDNT ASSESSED			Without	O abannala	3-38	
A1S64TCTRT (*7)	Q041CHIN	√	ERNT-ASQT62TCRT			vvitilout	2 channels	3-36	

<sup>\*4:</sup> For thermocouple input under standard control \*5: For platinum RTD input under standard control

## Temperature Control Modules with Disconnection Detection Function [1-slot type + Disconnection detection connector conversion cable]

The conversion adapter for the temperature control module (1-slot type) with the disconnection detection connector conversion cable. Use the set model name to order.

x: Not applicable to MELSEC-Q series large type base unit (MELSEC-AnS size)

MELSEC-AnS series	MELSEC-Q series	Applicability		Temperature c	ontrol modu	le conversion	on adap	ter	Disconnectio connector con		
module model before replacement	module model after replacement	of Q series large type	Set model	Model	MELSEC-AnS	Shape MELSEC-Q	Support	No. of	Sha MELSEC-AnS		Page
before replacement	aitei iepiacement	base unit		Wodel	series	series	flange	channels	series	series	
A1S64TCTTBW-S1	Q64TCTTBWN	×	ERNT-ASQT64TCTTBW	ERNT-ASQT64TCTT		 	Without	4			3-39
A1S64TCTRTBW (*8)	Q041CTIBWN	(*12)	ENNI-ASQ1041C11DW	ENNI-ASQ1041CTT		! !	vvitilout	channels			3-39
A1S64TCRTBW-S1	Q64TCRTBWN	×	ERNT-ASQT64TCRTBW	ERNT-ASQT64TCRT	Terminal	Terminal	Without	4		Terminal	3-41
A1S64TCTRTBW (*9)	Q041Ch1bWN	(*12)	ENNI-ASQ1041CN1DW	ENIVI-ASQ1041CN1	block	block	williout	channels	Connector	block	3-41
A1S62TCTTBW-S2	Q64TCTTBWN	×	ERNT-ASQT62TCTTBW	ERNT-ASQT62TCTT		(18 points)	Mithout	2	(8P)	(18 points)	2 42
A1S64TCTRTBW (*10)	Q041CTTBWN	(*12)	ENNI-ASQ1021C11BW	ENIVI-ASQ1021011	(20 points)	(16 points)	vvitilout	channels		(10 points)	3-42
A1S62TCRTBW-S2	Q64TCRTBWN	×	ERNT-ASQT62TCRTBW	ERNT-ASQT62TCRT		I I	Without	2			3-46
A1S64TCTRTBW (*11)	QU41CHIDWIN	(*12)	ENNI-AGGIOZIONIDW	LNIVI-AGQ1021CN1			vvitilOut	channels			0-40

<sup>\*8:</sup> For thermocouple input under standard control \*9: For platinum RTD input under standard control

### Notes

<sup>\*6:</sup> For thermocouple input under heating and cooling control \*7: For platinum RTD input under heating and cooling control

<sup>\*10:</sup> For thermocouple input under heating and cooling control \*11: For platinum RTD input under heating and cooling control

<sup>\*12:</sup> For 2-slot type MELSEC-Q series modules

<sup>3.</sup> Intelligent function modules other than the above (positioning modules, information system modules, distribution modules, etc.) are not conversion adapter compatible and therefore require rewiring.

# Base Adapter

With the base adapter, the MELSEC-Q series base unit can be installed using the mounting holes of the MELSEC-AnS series base unit.

Main/ Extension	MELSEC-AnS series module model before replacement	MELSEC-Q series module model after replacement	Base adapter model	Remark	Page
	A1S38B/A1S38HB	Q38B	ERNT-ASQB38N		
	A1S35B	Q35B	ERNT-ASQB35N		
Main	A1S33B	Q33B	ERNT-ASQB33N		
Main	A1S32B	Q33B	ERNT-ASQB32N		
	A1SJCPU	Q00JCPU		When using Q7BAT-SET, mount	3-47
	A1SJCPU-S3		ERNT-ASQB00JN	Q7BAT-SET to the CPU module with the	to
	A1SJHCPU	Q00UJCPU		CPU module (prior to Q7BAT-SET mounting) mounted to the base adapter	3-48
	A1S68B	Q68B	ERNT-ASQB68N	installed.	0 40
	A1S65B	Q65B	ERNT-ASQB65N		
Extension	A1S58B	Q68B (*13)	ERNT-ASQB58N		
	A1S55B	Q55B	ERNT-ASQB55N		
	A1S52B	Q52B	ERNT-ASQB52N		

<sup>\*13:</sup> Replaced with base unit when power supply module mounting is required.

With the following model base adapters, the main base unit and the QA extension base unit QA1S51B can be both installed.

MELSEC-AnS series module model	MELSEC-Q series module	e model after replacement	Base adapter model	Remark	Page
before replacement	Main	Extension	base adapter moder	nemark	rage
A1S38B/A1S38HB/A1S38HBEU	Q38B/Q35B/Q33B		ERNT-ASQB38N-S1	When using Q7BAT-SET, mount Q7BAT-SET	
A1S35B	Q35B/Q33B	QA1S51B	ERNT-ASQB35N-S1	to the CPU module with the CPU module (prior to Q7BAT-SET mounting) mounted to	
A1S33B	Q33B		ERNT-ASQB33N-S1	the base adapter installed.	3-48

# (3) Conversion Adapter DIN Rail Mounting Bracket

When mounting the MELSEC-Q series base unit to a DIN rail and using a conversion adapter with a support flange, or a disconnection detection conversion cable for the temperature control module the conversion adapter DIN rail mounting bracket is required. If a conversion adapter with a support flange or a disconnection detection connector conversion cable for the temperature control module is not used, this mounting bracket is not required.

Main/ Extension	MELSEC-AnS series module model before replacement	MELSEC-Q series module model after replacement	Conversion adapter DIN rail mounting bracket model	Remark	Page
Main	A1S38B/A1S38HB/A1S38HBEU	Q38B			
Cutanaian	A1S68B	Q68B	ERNT-ASQDIN3868		
Extension	A1S58B	Q00B			
Main	A1S35B	Q35B		•A DIN adapter manufactured	
Extension	A1S65B	Q65B		by Mitsubishi Electric is separately required.	
	A1SJCPU	Q00JCPU	ERNT-ASQDIN356500J	•When using Q7BAT-SET, mount Q7BAT-SET to the CPU module	3-49
	A1SJCPU-S3				0 40
Main	A1SJHCPU	Q00UJCPU		with the CPU module (prior to Q7BAT-SET mounting) mounted	
	A1S33B	Q33B		to the base adapter installed.	
	A1S32B	Q33B	ERNT-ASQDIN3355		
Cutanalan	A1S55B	Q55B			
Extension	A1S52B	Q52B	ERNT-ASQDIN52		

# **Conversion Adapter**

## **Specifications**

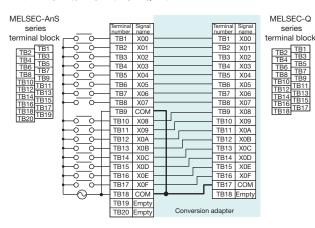
## For Input/Output Modules

## 1-slot type

### 1) ERNT-ASQTXY10 Terminal block (20P)-Terminal block (18P)

	Conversion adapter model	MELSEC-AnS series module model	No. of input/ output points	MELSEC-Q series module model	
		A1SX10 A1SX10EU	16 points	QX10	
E	ERNT-ASQTXY10	A1SY10	1C mainta	0)/40	
		A1SY10EU	16 points	QY10	

#### With A1SX10/A1SX10EU→QX10



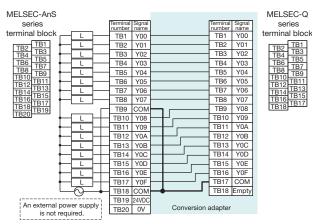
## [Specification comparison chart]

[opecinication comparison chart]					
	Model	MELSEC-AnS series		MELSEC-Q series	
Specifica	ation	A1SX10	A1SX10EU	QX10	
No. of in	put points	16 points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated inp	out voltage	100 to 120VAC, 50/60Hz	100 to 120VAC, 50/60Hz	100 to 120VAC (+10/-15%) 50/60Hz (±3Hz)	
Rated inp	out current	Approx. 6mA (100VAC, 60Hz)	Approx. 7mA (120VAC, 60Hz)	Approx. 8mA (100VAC, 60Hz) Approx. 7mA (100V,AC 50Hz)	
Rush cur	rrent	200mA, maximum, within 1ms (132VAC)	200mA, maximum, within 1ms (132VAC)	200mA, maximum, within 1ms (132VAC)	
ON voltage / ON current		80VAC or more / 5mA or more	80VAC or more / 5mA or more	80VAC or more / 5mA or more	
OFF voltage / OFF current		30VAC or less / 1.4mA or less	30VAC or less / 1.4mA or less	30VAC or less / 1.7mA or less	
Input impedance		Approx. 18kΩ (60Hz) Approx. 21kΩ (50Hz)	Approx. 18kΩ (60Hz) Approx. 21kΩ (50Hz)	Approx. 12kΩ (60Hz) Approx. 15kΩ (50Hz)	
Response	OFF→ON	20ms or less	20ms or less	15ms or less	
time	ON→OFF	35ms or less	35ms or less	20ms or less	
Internal c	urrent	50mA	50mA	50mA	
consump	tion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	
Wiring m		16 points/common	16 points/common	16 points/common	
External in	nterface	20-point terminal block	20-point terminal block	18-point terminal block	
NI-4	Mada a				

#### Notes

- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 2. For detailed and general specifications not described in the module specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## With A1SY10/A1SY10EU→QY10



### [Specification comparison chart]

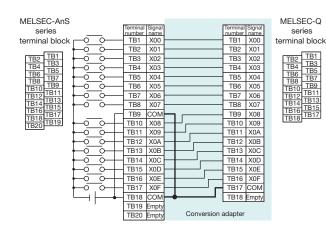
	Model	MELSEC-AnS series		MELSEC-Q series
Specifica	ation	A1SY10	A1SY10EU	QY10
No. of our	tput points	16 points	16 points	16 points
Isolation	method	Photocoupler isolation	Photocoupler isolation	Relay isolation
Rated sw	itohina	240VAC/2A (COSΦ=1)	120VAC/2A (cosΦ=1)	240VAC/2A (cosΦ=1)
voltage/c	Ü	24VDC/2A (Resistance load)	24VDC/2A (Resistance load)	24VDC/2A (Resistance load)
voitage/c	urrent	(8A/common)	(8A/common)	(8A/common)
Minimum sv	witching load	5VDC, 1mA	5VDC, 1mA	5VDC, 1mA
Maximum voltage	switching	264VAC, 125VDC	132VAC, 125VDC	264VAC, 125VDC
Response	OFF→ON	10ms or less	10ms or less	10ms or less
time	ON→OFF	12ms or less	12ms or less	12ms or less
Surge su	ppressor	No	No	No
Fuse		No	No	No
Internal c	urrent	120mA	120mA	430mA
consumption		(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
Wiring me		8 points/common	8 points/common	16 points/common
External in	nterface	20-point terminal block	20-point terminal block	18-point terminal block

### Notes

- When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB18 on the MELSEC-AnS series side are used separately, a wiring change is required.
- An external power supply connected to terminal numbers TB19 and TB20 on the MELSEC-AnS series side is not required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications
  of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 2) ERNT-ASQTX40 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of input points	MELSEC-Q series module mode
ERNT-ASQTX40	A1SX40	16 points	QX40 QX70
ERNI-ASQ1A40	A1SX40-S2	16 points	QX40
	A1SX40-S1	16 points	QX40-S1



Model		MELSEC-AnS series	MELSEC-Q series	
		A1SX40-S1	QX40-S1	
Specifica	ation	(Sink type)	(Positive common type)	
No. of in	put points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Data diam		24VDC	24VDC	
Hated inp	out voltage	24VDC	(+20/-15%, within a ripple rate of 5%)	
Rated inp	out current	Approx. 7mA	Approx. 6mA	
ON voltage	/ ON current	14VDC or more / 4mA or more	19VDC or more / 4mA or more	
OFF voltage	/ OFF current	6.5VDC or less / 1.7mA or less	11VDC or less / 1.7mA or less	
Input imp	pedance	Approx. 3.3kΩ	Approx. 3.9kΩ	
Response	OFF→ON	0.1ms or less	0.1/0.2/0.4/0.6/1ms	
time	ON→OFF	0.2ms or less	0.1/0.2/0.4/0.6/1ms	
Internal current		50mA (TYP. all points ON)	60mA (TVD all points ON)	
consumption		Soma (1 FF. all points ON)	60mA (TYP. all points ON)	
Wiring method		16 points/common	16 points/common	
for comm	on	то рошко/сопштоп	To points/common	
External in	nterface	20-point terminal block	18-point terminal block	

#### [Specification comparison chart]

[opcomoducii comparison chart]					
	Model	MELSEC-AnS series	MELSEC	-Q series	
		A1SX40	QX40 QX70 (Positive/N		ve/Negative
Specifica	tion	(Sink type)	(Positive common type)	common sl	hared type)
No. of inp	out points	16 points	16 points	16 p	oints
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoup	ler isolation
			24VDC		
Rated inp	ut voltage	12/24VDC	(+20/-15%, within a	5VDC	12VDC
			ripple rate of 5%)		
Rated inp	ut current	Approx. 3mA/Approx. 7mA	Approx. 4mA	Approx. 1.2mA	Approx. 3.3mA
ON voltage / ON current		8VDC or more / 2mA or more	19VDC or more / 3mA or more	3.5V or more / 1mA or more	
OFF voltage / OFF current		4VDC or less / 1mA or less	11VDC or less / 1.7mA or less	1V or less / 0.1mA or less	
Input imp	edance	Approx. 3.3kΩ	Approx. 5.6kΩ	Approx. 3.3kΩ	
Response	OFF→ON	10ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less	
time ON→OFF		10ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less	
Internal current		50mA	50mA	55mA	
consumption		(TYP. all points ON)	(TYP. all points ON) (TYP. all points O		oints ON)
Wiring method		16 points/common	16 points/common	16 pointo	/common
for commo	on	10 points/continion	10 points/common	10 points	/6011111011
External in	nterface	20-point terminal block	18-point terminal block	18-point ter	minal block

Model		MELSEC-AnS series	MELSEC-Q series	
	_	A1SX40-S2	QX40	
Specifica	ation	(Sink type)	(Positive common type)	
No. of inp	out points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Data d inn		24VDC	24VDC	
Rated inp	out voltage	24VDC	(+20/-15%, within a ripple rate of 5%)	
Rated input current		Approx. 7mA	Approx. 4mA	
ON voltage / ON current		14VDC or more / 3.5mA or more	19VDC or more / 3mA or more	
OFF voltage	/ OFF current	6.5VDC or less / 1.7mA or less	11VDC or less / 1.7mA or less	
Input imp	edance	Approx. 3.3kΩ	Approx. 5.6kΩ	
Response	OFF→ON	10ms or less	1/5/10/20/70ms or less	
time	ON→OFF	10ms or less	1/5/10/20/70ms or less	
Internal current		50mA	50mA	
consumption		(TYP. all points ON)	(TYP. all points ON)	
Wiring method		16 points/common	16 points/common	
for comm	on	To points/common	To points/common	
External in	nterface	20-point terminal block	18-point terminal block	

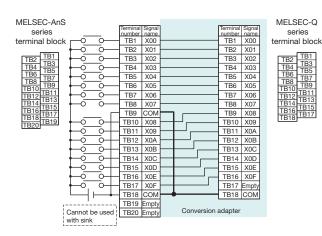
## Notes

- 1. When replacing A1SX40 with QX40 and using rated input voltage of 12VDC, the voltage needs to be changed to 24VDC.
- 2. When replacing A1SX40 with QX70 and using rated input voltage of 24VDC, the voltage needs to be changed to 12VDC.
- 3. For \_\_\_\_\_areas, verify that the MELSEC-Q series module specifications satisfy the specifications
- of the connected device/equipment.

  4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 3) ERNT-ASQTX80 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of input points	MELSEC-Q series module model
	A1SX80		QX80
ERNT-ASQTX80	A1SX80-S1	16 points	
	A1SX80-S2		



## [Specification comparison chart]

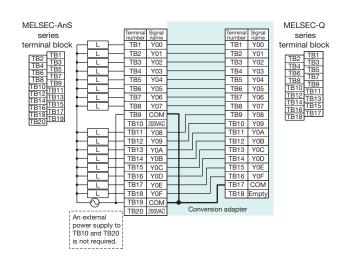
folianismus combination and						
	Model	1	MELSEC-AnS series	3	MELSEC-Q series	
		A1SX80	A1SX80-S1	A1SX80-S2	QX80	
Specifica	tion	(Sink/Source type)	(Sink/Source type)	(Sink/Source type)	(Negative common type)	
No. of in	out points	16 points	16 points	16 points	16 points	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated inp	out voltage	12/24VDC	24VDC	24VDC	24VDC (+20/-15%, within a ripple rate of 5%)	
Rated input current		Approx. 3mA /Approx. 7mA	Approx. 7mA	Approx. 7mA	Approx. 4mA	
ON voltage		8VDC or more	17VDC or more	13VDC or more	19VDC or more	
/ ON current		/ 2mA or more	/ 5mA or more	/ 3.5mA or more	/ 3mA or more	
OFF volta	age	4VDC or less	5VDC or less	6VDC or less	11VDC or less	
/ OFF cu	rrent	/ 1mA or less	/ 1.7mA or less	/ 1.7mA or less	/ 1.7mA or less	
Input imp	pedance	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 5.6kΩ	
Response	OFF→ON	10ms or less	0.4ms or less	10ms or less	1/5/10/20/70ms or less	
time ON→OFF		10ms or less	0.5ms or less	10ms or less	1/5/10/20/70ms or less	
Internal current		50mA	50mA	50mA	50mA	
consumption		(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)	
Wiring method for common		16 points/common	16 points/common	16 points/common	16 points/common	
External in	ntorfaco	20-point	20-point	20-point	18-point	
External I	nterrace	terminal block	terminal block	terminal block	terminal block	
Natas						

series

- Use with source input. (Use with sink input is not permitted.)
- When replacing A1SX80 with QX80 and using rated input voltage of 12VDC, the voltage needs to be changed to 24VDC.
- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 4) ERNT-ASQTY22 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-Q series module model
ERNT-ASQTY22	A1SY22	16 points	QY22



### [Specification comparison chart]

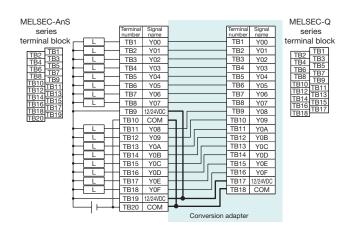
openious of companion that q					
	Model	MELSEC-AnS series	MELSEC-Q series		
Specificat	ion	A1SY22	QY22		
No. of output points		16 points	16 points		
Isolation method		Photocoupler isolation	Photocoupler isolation		
Rated load voltage		100/240VAC	100 to 240VAC (+10/-15%)		
Maximum	load current	0.6A/point	0.6A/point		
IVIAXIIIIUIII	load current	2.4A/common	4.8A/common		
Minimum	lood	24VAC 100mA	24VAC 100mA		
voltage/cu		100VAC 10mA	100VAC 25mA		
voitage/cu	irrent	240VAC 20mA	240VAC 25mA		
Maximum	rush current	20A 10ms or less, 8A 100ms or less	20A, one cycle or less		
OFF leaka	ge	1.5mA (120VAC, 60Hz)	1.5mA (at 120VAC, 60Hz)		
current		3mA (240VAC, 60Hz)	3mA or less (at 240VAC, 60Hz)		
ON maximum voltage drop		1.5VAC or less (0.1 to 0.6A)			
		1.8VAC or less (50 to 100mA)	1.5V or less		
voitage un	ор	2VAC or less (10 to 50mA)			
Response	OFF→ON	1ms or less	1ms or less		
time	ON→OFF	0.5Hz + 1ms or less	1ms + 0.5 cycles or less		
Surge sup	pressor	CR absorber	CR absorber		
Fuse		5A (1 common/fuse) not replaceable	No (Fuse installation recommended with external wiring)		
Internal cu	ırrent				
consumption		270mA (TYP. all points ON)	250mA (TYP. all points ON)		
Wiring me	thod	8 points/common	16 points/common		
for commo		'	'		
External in	iterface	20-point terminal block	18-point terminal block		

#### Note

- When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 on the MELSEC-AnS series side are used separately, a wiring change is required.
- An external power supply connected to terminal numbers TB10 and TB20 on the MELSEC-AnS series side is not required.
   For \_\_\_\_\_areas, verify that the MELSEC-Q series module specifications satisfy the specifications
- For <u>lareas</u>, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 5) ERNT-ASQTY40 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-Q series module model
EDNIT ACCETY	A1SY40	1C mainta	QY40P
ERNT-ASQTY40	A1SY40P	16 points	Q140P



### [Specification comparison chart]

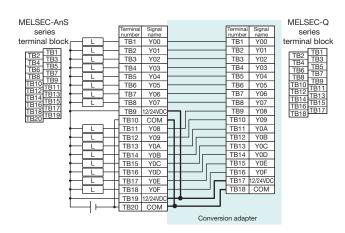
Model		MELSEC-	AnS series	MELSEC-Q series
		A1SY40	A1SY40P	QY40P
Specificati	ion	(Sink type)	(Sink type)	(Sink type)
No. of outp	out points	16 points	16 points	16 points
Isolation m	nethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Rated load	d voltage	12/24VDC	12/24VDC	12 to 24VDC
Maximum	load current	0.1A/point	0.1A/point	0.1A/point
Maximum	load current	0.8A/common	0.8A/common	1.6A/common
Maximum i	rush current	0.4A, 10ms or less	0.7A, 10ms or less	0.7A, 10ms or less
OFF leaka	ge current	0.1mA or less	0.1mA or less	0.1mA or less
ON maxim	ium	1.0VDC (TYP) 0.1A	0.1VDC (TYP) 0.1A	0.1VDC (TYP) 0.1A
voltage dro	ор	2.5VDC (MAX) 0.1A	0.2VDC (MAX) 0.1A	0.2VDC (MAX) 0.1A
Response	OFF→ON	2ms or less	1ms or less	1ms or less
time	ON→OFF	2ms or less	1ms or less	1ms or less
ume		(Resistance load)	(Rated load, resistance load)	(Rated load, resistance load)
Surge supp	pressor	Zener diode	Zener diode	Zener diode
Fuse		1.6 A (1 common/fuse)	No	No
1 436		not replaceable	140	NO
Internal cu	rrent	270mA	79mA	65mA
consumpti	ion	(TYP. all points ON)	(TYP. all points ON)	(TYP. all points ON)
			Yes (Overheat	Yes (Overheat
Protection function		No	protection function,	protection function,
			short-circuit protection)	short-circuit protection)
Wiring method		8 points/common	8 points/common	16 points/common
for commo	on	o points/common	o points/common	10 points/common
External in	terface	20-point terminal block	20-point terminal block	18-point terminal block

### Notes

- When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-AnS series side are used separately, a wiring change is required.
- For \_\_\_\_areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## 6) ERNT-ASQTY50 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-Q series module model
FRNT-ASQTY50	A1SY50	16 points	QY50



### [Specification comparison chart]

		•		
Model		MELSEC-AnS series	MELSEC-Q series	
		A1SY50	QY50	
Specificati	ion	(Sink type)	(Positive common type)	
No. of outp	out points	16 points	16 points	
Isolation m	nethod	Photocoupler isolation	Photocoupler isolation	
Rated load	d voltage	12/24VDC	12 to 24VDC	
Maximum	load current	0.5A/point	0.5A/point	
Maximum	load current	2A/common	4A/common	
Maximum i	rush current	4A, 10ms or less	4A, 10ms or less	
OFF leakage current		0.1mA or less	0.1mA or less	
ON maxim	ium	0.9VDC (TYP) 0.5A	0.2VDC (TYP) 0.5A	
voltage dro	ор	1.5VDC (MAX) 0.5A	0.3VDC (MAX) 0.5A	
Response	OFF→ON	2ms or less	1ms or less	
time	ON→OFF	2ms or less (Resistance load)	1ms or less (Rated load, resistance load)	
Surge supp	pressor	Zener diode	Zener diode	
Fuse		Yes	6.7A (not replaceable)	
Internal current		120mA (TYP. all points ON)	80mA (TYP. all points ON)	
consumption		12011A (11F. all politis ON)	OUTIA (TTF. all politis ON)	
Wiring method		8 points/common	16 points/common	
for commo	on	o points/common	16 points/common	
External in	terface	20-point terminal block	18-point terminal block	

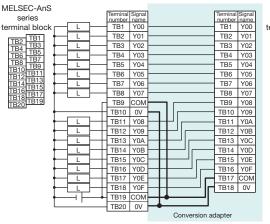
#### Notes

- 1. When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-AnS series side are used separately, a wiring change is required.

  2. For 
  areas, verify that the MELSEC-Q series module specifications satisfy the specifications
- of the connected device/equipment.
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### 7) ERNT-ASQTY80 Terminal block (20P)→Terminal block (18P)

Conversion adapter	MELSEC-AnS series	No. of	MELSEC-Q series
model	module model	output points	module model
EDNT ACOTYON	A10V00	16 pointo	OVRU



MELSEC-Q series terminal block TB1 TB3 TB5

### [Specification comparison chart]

Model		MELSEC-AnS series	MELSEC-Q series	
		A1SY80	QY80	
Specification		(Source type)	(Source type)	
No. of outp	out points	16 points	16 points	
Isolation m	nethod	Photocoupler isolation	Photocoupler isolation	
Rated load	l voltage	12/24VDC	12 to 24VDC	
Maximum	oad current	0.8A/point	0.5A/point	
Maximum	oau current	3.2A/common	4A/common	
Maximum i	rush current	8A, 10ms or less	4A, 10ms or less	
OFF leaka	ge current	0.1mA or less	0.1mA or less	
ON maxim	um	1.5VDC (MAX) 0. 8A	0.2VDC (TYP) 0.5 A	
voltage dro	ор	1.5VDC (IVIAX) 0. 8A	0.3VDC (MAX) 0.5 A	
Response	OFF→ON	2ms or less	1ms or less	
time	ON→OFF	2ms or less (Resistance load)	1ms or less (Rated load, resistance load)	
Surge supp	pressor	Zener diode	Zener diode	
Fuse		5A (1 common/fuse) not replaceable	6.7A (not replaceable)	
Internal current		120mA (TYP. all points ON)	80mA (TYP. all points ON)	
consumption		12011A (1 FF. all politis ON)	BOTTA (TTP. all points ON)	
Wiring method		8 points/common	16 points/common	
for commo	n	8 points/common	16 points/common	
External in	terface	20-point terminal block	18-point terminal block	

### Notes

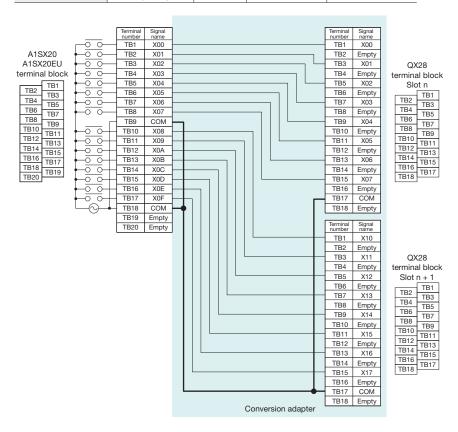
- When the number of points per common changes from eight (two circuits) to 16 and the terminal numbers TB9 and TB19 as well as TB10 and TB20 on the MELSEC-AnS series side
- are used separately, a wiring change is required.

  2. For \_\_\_\_\_areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## 2-slot type

## 1) ERNT-ASQTX20 Terminal block (20P)→Terminal block (18P) × 2

Conversion adapter model	MELSEC-AnS series module model	No. of input points	MELSEC-Q series module model	No. of required modules
ERNT-ASQTX20	A1SX20	1C mainta	OVOO	2 modules
ERNI-ASQ1A20	A1SX20EU	16 points	QX28	2 modules



### [Specification comparison chart]

[Specification comparison chart]					
Model		MELSEC-	MELSEC-AnS series		
Specification		A1SX20	A1SX20EU	QX28	
No. of input point	S	16 points	16 points	8 points	
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Rated input voltage	ge	200 to 240VAC, 50/60Hz	200 to 240VAC, 50/60Hz	100 to 240VAC (+10%/-15%), 50/60Hz (±3Hz)	
Detect inner to a come	-4	Approx. 9 mA (200VAC, 60Hz)	A 44 A (0.40) (A O. 60) I-)	Approx. 17mA (200VAC, 60Hz), Approx. 14mA (200VAC, 50Hz)	
Rated input curre	nı	Approx. 9 IIIA (200VAC, 60H2)	Approx. 11mA (240VAC, 60Hz)	Approx. 8 mA (100VAC, 60Hz), Approx. 7mA (100VAC, 50Hz)	
Rush current		500mA, maximum, within 1ms (264VAC)	500mA, maximum, within 1ms (264VAC)	500mA, maximum, within 1ms (264VAC)	
ON voltage / ON	current	80VAC or more / 4mA or more	80VAC or more / 4mA or more	80VAC or more / 5mA or more (50Hz, 60Hz)	
OFF voltage / OF	F current	30VAC or less / 1mA or less	30VAC or less / 1mA or less	30VAC or less / 1.7mA or less (50Hz, 60Hz)	
Input impedance		Approx. 22kΩ (60Hz), Approx. 27kΩ (50Hz)	Approx. 22kΩ (60Hz), Approx. 27kΩ (50Hz)	Approx. 12kΩ (60Hz), Approx. 15kΩ (50Hz)	
Response time	OFF→ON	30ms or less (200VAC, 60Hz)	30ms or less (200VAC, 60Hz)	10ms or less (100VAC 50Hz, 60Hz)	
nesponse time	ON→OFF	55ms or less (200VAC, 60Hz)	55ms or less (200VAC, 60Hz)	20ms or less (100VAC 50Hz, 60Hz)	
Internal current consumption		50mA (TYP. all points ON)	50mA (TYP. all points ON)	50mA (TYP. all points ON)	
Wiring method for common		16 points/common	16 points/common	8 points/common	
External interface		20-point terminal block	20-point terminal block	18-point terminal block	

### Notes

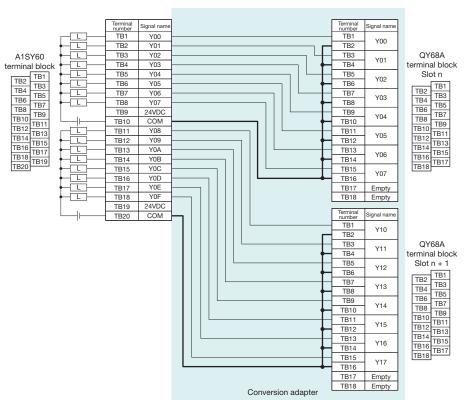
1. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
2. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## Program precautions

QX28 is a 16-point occupied module, requiring a program change of the latter 8 points X08 to X0F used in A1SX20/A1SX20EU to X10 to X17.

## 2) ERNT-ASQTY60 Terminal block (20P)→Terminal block (18P) × 2

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-Q series module model	No. of required modules
FRNT-ASQTY60	A1SY60	16 points	QY68A	2 modules



TB19) on the MELSEC-AnS side is not required. However, leaving the connection as is causes no problem because those wires are not connected in the conversion adapter.

## [Specification comparison chart]

comparison ci	iartj	
Model	MELSEC-AnS series	MELSEC-Q series
	A1SY60 (Sink type)	QY68A (Sink/Source type)
its	16 points	8 points
	Photocoupler isolation	Photocoupler isolation
е	24VDC	5 to 24VDC (+20/-10%)
rrent	2A/point, 4A/common (25°C) 1.8A/point, 3.6A/common (45°C) 1.6A/point, 3.2A/common (55°C)	2A/point, 8A/module
rrent	8A, 10ms or less	8A, 10ms or less
ent	0.1mA or less	0.1mA or less
age drop	0.9VDC (TYP) 2A 1.5VDC (MAX) 0.5A	0.3VDC (MAX) 2A
OFF→ON	2ms or less	3ms or less
ON→OFF	2ms or less (Resistance load)	10ms or less (Resistance load)
	Zener diode	Zener diode
	Yes	No
nsumption	120mA (TYP. all points ON)	110mA (MAX all points ON)
common	8 points/common	All points independent
	20-point terminal block	18-point terminal block
	Model tts  Perrent  rrent  rrent  operation  OFF→ON  ON→OFF  nsumption	A1SY60 (Sink type)  ts

## Notes

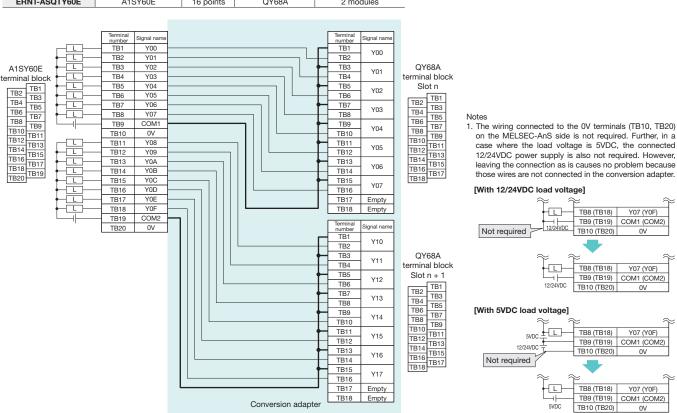
- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## Program precautions

QY68A is a 16-point occupied module, requiring a program change of the latter 8 points Y08 to Y0F used in A1SY60 to Y10 to Y17.

## 3) ERNT-ASQTY60E Terminal block (20P)→Terminal block (18P) × 2

Conversion adapter model	MELSEC-AnS series module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-ASQTY60E	A1SY60E	16 points	QY68A	2 modules



### [Specification comparison chart]

[Specification comparison chart]				
Model		MELSEC-AnS series	MELSEC-Q series	
Specification		A1SY60E (Source type)	QY68A (Sink/Source type)	
No. of output poir	nts	16 points	8 points	
Isolation method		Photocoupler isolation	Photocoupler isolation	
Rated load voltag	е	5/12/24VDC	5 to 24VDC (+20/-10%)	
Maximum load current		2A/point (Condition: $\tau = \frac{L}{R} \le 2.5$ ms) 4A/common	2A/point, 8A/module	
Maximum rush current		8A, 10ms or less	8A, 10ms or less	
OFF leakage current		0.1mA or less	0.1mA or less	
ON maximum vol	age drop	0.2VDC (MAX) 1A 0.4VDC (MAX) 2A	0.3VDC (MAX) 2A	
Danie de la constitución de la c	OFF→ON	3ms or less	3ms or less	
Response time	ON→OFF	10ms or less (Resistance load)	10ms or less (Resistance load)	
Surge suppressor		Zener diode	Zener diode	
Fuse		Yes	No	
Internal current consumption		200mA (TYP. all points ON)	110mA (TYP all points ON)	
Wiring method for	common	8 points/common	All points independent	
External interface		20-point terminal block	18-point terminal block	

## Notes

- 2. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### Program precautions

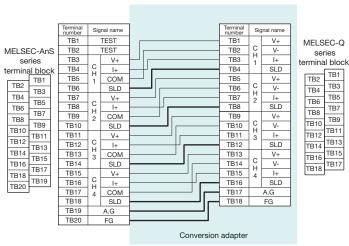
QY68A is a 16-point occupied module, requiring a program change of the latter 8 points Y08 to Y0F used in A1SY60E to Y10 to Y17.

## For Analog Modules

## 1-slot type

## 1) ERNT-ASQT64AD Terminal block (20P)→Terminal block (18P)

Conversion adapter model MELSEC-AnS series module model		No. of channels	MELSEC-Q series module model
ERNT-ASQT64AD	A1S64AD	4 channels	Q64AD



TB3 TB4 TB5 TB6 TB7 TR8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB17

TB1

#### Notes

1. Be sure to ground the FG terminal (TB20).



2. Q64AD does not have an offset/gain setting terminal. For offset/gain setting, refer to the Q64AD user's manual.

#### [Specification comparison chart]

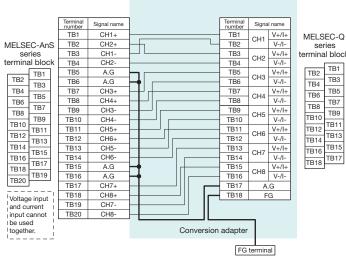
[Specification	on comparison c	hart]													
	Model	М	ELSEC-Ans	Series		MELSEC-Q series									
Specification			A1S64A	<b>D</b>						C	064AD				
Ameles innut	Voltage	-10 to 0 to 10	0VDC (Inpu	t resistance	: 1MΩ)			-1	0 to 10	VDC (Ir	put resistanc	e: 1MΩ)			
Analog input	Current	-20mA to 0 to 2	20mA (Input	t resistance	: 250MΩ)			0 t	o 20m/	ADC (Ir	put resistanc	e: 250Ω)			
Digital output		When set When set	to 1/8000,	binary -4096 to 40 -8192 to 81 -12288 to 1	91	(1)	lormal resolution r	mode: -4096 t			igned binary resolution mo	de: -12288 to	12287	, -1638	4 to 16383)
		Analog input	_	tal output v mA gain and 0 When set to 1/8000	V/0mA offset) When set	Ar	nalog input range	Normal resolution mode		High	High resolution mode		ode		
I/O characteris	stics	10V	4000	8000	12000			Digital outpu	ıt value	Maxim	um resolution	Digital output value		Maximı	um resolution
,		5V or 20mA	2000	4000	6000			9				Digital output value			
	0V or 0		0	0	0		0 to 10V				2.5mV	0 to 1600	00	0.	.625mV
		-5V or -20mA	-2000	-4000	-6000	ge	0 to 5V	0 to 400	00		1.25mV	0 to 1200	00	0.	.416mV
		-10V	-4000	-8000	-12000	Voltage	1 to 5V				1.0mV	0 10 12000		0.333mV	
				ital output v		>	-10 to 10V	-4000 to 4000			2.5mV	-16000 to 1			.625mV
		Analog input	When set	When set			User range setting			0	.375mV	-12000 to 1	2000		.333mV
Maximum reso	olution	\/altana innut	to 1/4000 2.5mV	to 1/8000 1.25mV		rent	0 to 20mA 4 to 20mA	0 to 400	00		5μA 4μA	0 to 1200	00		1.66μA 1.33μA
		Voltage input Current input	10µA	5μA	0.83mV 3.33μA	Current	User range setting	-4000 to 4	וחחח		4μΑ 1.37μΑ	-12000 to 1	2000		1.33µA
		Current input	ΤΟμίτ	Ομιτ	0.00μ/τ		Coor range county	-		olution i			resolu		
			Digital output va (With a 5V/20mA and 0V/0mA offs		A gain	Ar	nalog input range		nt temperature 0 mperature No tem prrection drift co		Ambient temperature 25±5°C	With temperature	rature 0 to 55°C		Ambient temperature 25±5°C
		Analog input			,		0 to 10V					Within ±0.3%	Within	±0.4%	Within ±0.1%
Overall accura	ICV					ge	-10 to 10V					(±48 digits)	(±64 d	digits)	(±16 digits)
Overall accura	io y		When set	When set		Voltage	0 to 5V								
			to 1/4000	to 1/8000	to 1/12000	>	-1 to 5V		1		Within ±0.1%			0.40/	14501 : 0.407
		Within ±1.0%	±40	±80	±120	Current	User range setting 0 to 20mA 4 to 20mA User range setting	(±12 digits)	(±16	digits)	(±4 digits)	Within ±0.3% (±36 digits)	(±48 d		Within ±0.1% (±12 digits)
Maximum con	version speed		20ms/cha	nnel		80	µs/channel (Add 160	Dus regardless	of the n	umber o	f channels used	d when tempera	ature dri	ft correc	ction is used.)
	Voltage		±15V				,	<u> </u>			±15V				,
Absolute maxir	Current		±30mA	٩						±	:30mA				
No. of analog input points 4 channels/module										4 chan	nels/module				
.≌ 0	nput terminal and able controller power supply	Ph	otocoupler	isolation					Р	hotoco	upler isolatior	1			
	channels		Non-isola								i-isolated				
No. of occupie			32 poin								points				
Connected ter		20-	point termi	nai block					18		terminal block	K			
Current consu	mption		0.4A								0.63A				

- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

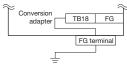
- 1) With A1564AD and Q64AD, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) Q64AD has a faster conversion speed than A1S64AD. As a result, the possibility exists that noise not introduced in A1S64AD will be introduced as analog signals in Q64AD. In such a case, use an averaging processing function to remove the impact of the noise.

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT68AD	A1S68AD (Voltage input)	8 channels	Q68ADV
ERNI-ASQ100AD	A1S68AD (Current input)	8 channels	Q68ADI



terminal block TB1 TB2 ТВ3 TB4 TB5 TB6 TB7 TB8 TB9 TB10 TB11 TB12 TB13 TB14 TB15 TB16 TB18 TB17

- G68ADV/I analog input cannot use voltage input and current input together in a single module. If voltage input and current input are used together in A1S68AD (one module), the conversion adapter cannot be used. In such a case, execute direct wiring to the voltage input module (Q68ADV, etc.) and current input module (Q68ADI, etc.).
- 2. Be sure to ground the FG terminal.



#### [Specification comparison chart]

Specification	on comparison cl	nartj											
	Model	MELSEC-/	AnS series	MELSEC-Q series									
Specification		A1S6	68AD			Q68ADV				Q	68ADI		
•	Voltage	-10 to 0 to 10VDC (In	put resistance: 1MΩ)	-10 to 10VDC (Input resistance: 1MΩ) –									
Analog input	Current	0 to 20mA (Input re				_			0 to	20mA DC (Inj	out resi	istance	: 250Ω)
District southern		10.1%					1	6-bit sig	gned binary				,
Digital output		16-Dit sig	ned binary	(1)	lormal resolution r	mode: -4096 t	o 4095	, High re	solution mo	ode: -12288 to 12287, -16384 to 16			34 to 16383
		Analog input	Digital output			Name		lution m		Link		ution m	- d-
		0 to 10V	0 to 4000	۸.		INOITI	iai resc	nution m	lode	піді	resoit	ulion m	oae
I/O characteris	stics	-10 to 10V	-2000 to 2000	Ar	nalog input range	Digital outpu	t value	Mavimu	m recolution	Digital output	t value	Mavim	um recoluti
		0 to 5V or 0 to 20mA	0 to 4000			Digital outpu	t value			Digital outpu	t value	IVIGAIIII	um 1630iutic
		1 to 5V or 4 to 20mA	0 to 4000		0 to 10V				.5mV	0 to 1600	00	_	.625mV
		Analog input	Digital output	ge	0 to 5V	0 to 400	00		25mV	0 to 120	00		.416mV
		0 to 10V	2.5mV	Voltage	1 to 5V				.0mV			_	.333mV
		-10 to 10V	5mV	_>	-10 to 10V	-4000 to 4	1000		.5mV	-16000 to 1		_	.625mV
Maximum reso	olution	0 to 5V	1.25mV		User range setting				375mV	-12000 to 1	2000	0.333mV	
		1 to 5V	1.0mV	Current	0 to 20mA	0 to 400	00		5μΑ	0 to 1200	to 12000 ⊢		1.66µA
		0 to 20mA	5μΑ	1	4 to 20mA	4000	000		4μA	100001.1	0000		1.33µA
		4 to 20mA	4μΑ	0	User range setting	-4000 to 4		lution m	.37µA	-12000 to 1		ution m	1.33µA
						Ambient tempe			Ambient	Ambient tempe			Ambient
				Ar	nalog input range	With temperature				With temperature			
						drift correction			25±5°C	drift correction		rrection	25±5°C
					0 to 10V	dilit correction	unit co	TECTION	2010	Within ±0.3%	_		
		Within	Within +1.0%		-10 to 10V	1				(±48 digits)	1	digits)	
Overall accura	ксу	(Digital outpu		Voltage	0 to 5V	-				(±40 digito)	(±0+	aigito)	(±10 digit
		(Digital balps	1. Value: 2 10)		1 to 5V	Within ±0.3%	Within	±0.4%	Nithin ±0.1%				
					User range setting	(±12 digits)		digits)	(±4 digits)	Within ±0.3%	Within	±0.4%	Within ±0.1
				ŧ	0 to 20mA	1`	,	,	, ,	(±36 digits)	(±48	digits)	(±12 digit
				Current	4 to 20mA								
				ರ	User range setting	1							
Maximum con	version speed	0.5ms/d	channel	80	us/channel (Add 160	Dµs regardless	of the nu	umber of	channels use	d when temper	ature dr	rift corre	ction is use
Absolute maxi	Voltage	±3	5V					±	15V				
ADSOIUTE ITIAXII	Current	±30	lmA					±3	80mA				
No. of analog	input points	8 channel	s/module					8 chann	els/module				
.E Between i	nput terminal and	Photocoup	ler isolation				Р	hotocou	pler isolation	n			
0 4 1	able controller power supply	•		1						•			
	n channels	Non-is		1					isolated				
No. of occupie	<u> </u>	32 p		1					points				
Connected ter		20-point ter					18		erminal bloc	k			
Current consu	mption	0.4	4A					0.	.64A				

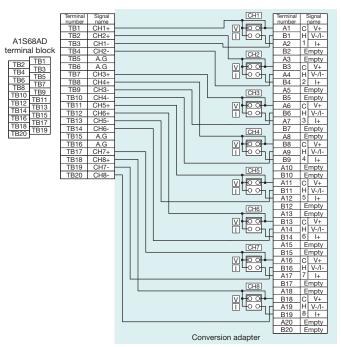
### Notes

- 🗔 areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- 1) With A1S68AD and Q68ADV/Q68ADI, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) Q68ADV/Q68ADI has a faster conversion speed than A1S68AD, resulting in the possibility that noise not introduced in A1S68AD will be introduced as analog signals in Q68ADV/Q68ADI. In such a case, use an averaging processing function to remove the impact of the noise.

### 3) ERNT-ASQT68AD-G Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT68AD-G	A1S68AD	8 channels	Q68AD-G



Q68AD-G connecto A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20

- 1. Set the short bar of the setting pin located inside the conversion adapter to the  $\boxed{V}$  side during voltage input and to the  $\boxed{\bot}$  side during current input, in accordance with the input of each channel CHI to CHB. Note that, at the time of factory shipment, all channels are set to voltage input (the [V] side).

  2. Q68AD-G does not have an AG terminal. The wiring connected to the AG
- terminals (TB5, TB6, TB15, TB16) on the MELSEC-AnS side, therefore, is not required. However, leaving the connection as is causes no problem because those wires are not connected in the conversion adapter.
- 3. After setting the V/I setting pin, connect the external wiring.

### [Specification comparison chart]

	Model	MELSEC-	AnS series			MEL:	SEC-Q series	3	
Specifica	tion	A1S	68AD			(	Q68AD-G		
Analog in	Voltage		-10 to 0 to +10VDC (Ir	nput res	istance: 1MΩ	or more)			
Arialog II	Current		0 to 20mA DC (	Input re	sistance: 2509	2)			
						16-bit	signed binar	ry	
		16-bit sig	ned binary			(Normal resolution			
Digital in	out				High res	olution mode: -1	2288 to 1228	37, -16384 to 163	383)
	During the use of		_			16-bit	signed binar	y	
	scaling function					(-327	'68 to 32767)	)	
		Analog input	Digital output	Input	Analog	Normal resol		High resolution	
			0 1	드	input range	Digital output value		Digital output value	
		0 to 10V	0 to 4000		0 to 10V		2.5mV	0 to 16000	0.625mV
I/O chara	cteristics	-10 to 10V	-2000 to 2000		0 to 5V	0 to 4000	1.25mV	0 to 12000	0.416mV
		0 to 5V or 0 to 20mA	0 to 4000	o	1 to 5V		1.0mV	0 10 12000	0.333mV
		1 to 5V or 4 to 20mA	0 to 4000	Voltage	1 to 5V	-1000 to 4500	1.0mV	-3000 to 13500	0.333mV
				₹		1000 10 1000			
					-10 to 10V		2.5mV	-16000 to 16000	0.625mV
		Analog input	Digital output		User range setting	-4000 to 4000	0.375mV	-12000 to 12000	0.333mV
		0 to 10V	2.5mV	2.5mV setting 0.375mV -12000 0 to 20mA 0 to 4000 5μA 0 to 3		0 to 12000	1.66µA		
Maximun	n resolution	-10 to 10V	5mV		4 to 20mA	0 10 4000	4μΑ	0 10 12000	1.33µA
		0 to 5V	1.25mV	Current	4 to 20mA	-1000 to 4500	4µA	-3000 to 13500	1.33µA
		1 to 5V	1mV	3	(Extended mode)	1000 10 4000	-τμ/ τ	0000 10 10000	1.00μ/τ
	-	0 to 20mA	5μΑ		User range setting	-4000 to 4000	1.37μΑ	-12000 to 12000	1.33µA
							±0.1%		
Overall	Reference accuracy (*1)	Within +1% (Digita	al output value: ±40)			Normal resolut	ion mode: ±4	digits (*2)	)
accuracy	ricierence accuracy (1)	Within £170 (Digite	a output value. ±40)		"	*		10V): ±16 digits	` '
accuracy					High resolut			ve range): ±12 di	igits (*2)
	Temperature coefficient (*3)	<u> </u>					/°C (0.00714	%/°C)	
	nversion speed [sampling cycle (*4)]	0.5ms/ch	nannel (*6)	_		101	ms/channel		
	e time (*5)						20ms		
	maximum input	Voltage: ±35V,	Current: ±30mA			Voltage: ±1	5V, Current: :	±30mA	
	alog input points		8 cha	nnels/n	nodule				
.≌ 0	ween input terminal and grammable controller power supply	Photocoup	oler isolation			Transf	ormer isolatio	on	
0 1			solated			Transf	ormer isolatio	on	
	cupied I/O points		points				16 points		
Connecti	on method		rminal block			40-p	in connector	•	
Internal cu	rrent consumption (5VDC)	0.	4A				0.46A		

- \*1: Accuracy of ambient temperature during offset/gain
- setting.
  \*2: "2 digits" indicates the digital value.
- \*3: Accuracy per 1°C temperature change
- \*4: Cycle by which the A/D conversion value is updated. \*5: Time until the input signal reaches the AD converter
- inside Q68AD-G.
- \*6: When averaging processing is specified to even one channel, the setting becomes 1 ms/channel for all channels

### Notes

- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected
- device/equipment.

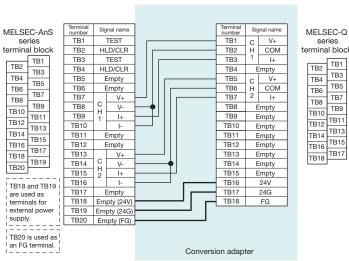
  5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- 1) With A1S68AD and Q68AD-G, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

  2) An input range set by a DIP switch in A1S68AD is set using the intelligent function module switch setting in Q68AD-G.

## 4) ERNT-ASQT62DA Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT62DA	A1S62DA	2 channels	Q62DAN



series terminal block TB2 TB1 TB3 TR4 TB5 TB6 TB7 TB8 TB9 TB10 TB12 TB11 TB14 TB13 TB16 TB15 TB18 TB17

#### Notes

- 1. For the power supply (power supply terminals TB16 and TB17) on the Q62DAN side, use terminal numbers TB18 and TB19 on the MELSEC-AnS series side
- TB18 Empty (24V) TB19 Empty (24G) TB20 Empty (FG)
- 2. Ground the FG terminal (terminal number TB18) on the Q62DAN side using terminal number TB20 on the MELSEC-AnS series side.
- Q62DAN does not have an offset/gain setting terminal or analog output hold/clear setting terminal. Analog output hold/clear setting needs to be performed using Q62DAN intelligent function module switch settings. For offset/gain and analog output hold/clear settings, refer to the Q62DAN user's manual.

#### [Specification comparison chart]

Specification	оотпра	Model		.J		MI	ELSEC-AnS ser	ies					MEL	SEC-Q series	<b>.</b>				
0		_					A1S62DA							Q62DAN					
Specification						4.0	Note the state of the bar												
							6-bit signed bina			ant autout			10 hi						
Digital input				1/4000			oltage output 4000 to 4000			ent output to 4000				signed binar	•				
Digital Input				1/8000			8000 to 8000			to 8000			*			183/			
				1/12000			2000 to 12000		_	o 12000		riigiries	olution mode1	2200 10 1220	7, -10304 10 100	100)			
	Voltage				) to 10		xternal load res	istance: 2k				-10 to 10	VDC (External lo	ad resistance	e value: 1kO to 1	MO)			
Analog output	Current						ernal load resis			,				ternal load resistance value: 0Ω to 600Ω)					
	Odifont			Resolution		000	1/8000	1/12000	_	Analog output value			Normal resolu						
				1 toootation		00	8000	12000		10V	An	alog output	Digital input	Maximum		Maximum			
			Φ			00	4000	6000		5V		range	value	resolution		resolution			
			Voltage			)	0	0		0V		0 to 5V		1.25mV		0.416mV			
I/O characteristic	cs		9	Digital input	-20	000	-4000	-6000		-5V	<u>e</u>	1 to 5V	0 to 4000	1.0mV	0 to 12000	0.333mV			
				value	-40	000	-8000	-12000		-10V	Voltage	-10 to 10V		2.5mV	-16000 to 16000	0.625mV			
			nt	1 [	40	00	8000	12000		20mA	8	User range	-4000 to 4000	0.751/	0.75mV -12000 to 12000				
			Current		20	00	4000	6000		12mA		setting				0.333mV			
			ರ		(	)	0	0		4mA		0 to 20mA	0 to 4000	5µA	0 to 12000	1.66µA			
						٧	oltage output	C	urr	ent output	Current	4 to 20mA	0 10 4000	4µA	0 10 12000	1.33µA			
Maximum resolu	tion			1/4000			2.5mV (10V)		<u> </u>	A (20mA)	Cur	User range	-4000 to 4000	1.5µA	ry 196 to 4095, 87, -16384 to 1636 87, -16384 to 1636 88, -16384 to 1636 198 e value: ΩΣ to 600 199 High resolution 199 big tall input 190 value 1900 to 12000 1900 to 12	0.83µA			
Waximum resolu	tion			1/8000			1.25mV (10V)	2	2.5µ	ıA (20mA)		setting	-4000 10 4000	1.5µA		0.00μΑ			
				1/12000		(	0.83mV (10V)		Ι.7μ	ıA (20mA)									
												At an			,	b			
Overall accuracy	,						ge: ±1.0% (±10	,						0mV, Current: ±20μA)					
,						Curr	ent: ±1.0% (±20	)0μA)				At an a	•		,	%			
						\ A ("+1-	- 05 / 0 -l						(Voltage: ±30	OmV, Current:	±60μΑ)				
Maximum conve	rsion spe	ed					in 25ms / 2 cha ame for 1 chanı						80	µs/channel					
		Voltage				(5)	±12V	iei)						±12V					
Absolute maximum		Current					28mA							21mA					
No. of analog ou						2	channels/modu	ıle					2 cha	nnels/module	9				
															-				
programmable of						Pho	otocoupler isola	tion					Photoc	oupler isolati	on				
Between output programmable of Between ch Between exter and analog of							Non-isolated						No	on-isolated					
Between exte	ernal powe	er supply									Transformer isolation								
and analog o	utput						_						Iransi	ormer isolalic	ori				
No. of occupied	points			32 points						16 points				16 points					
Connected termi	nal block	(				20-	point terminal b	lock			18-point terminal block								
Current consump	otion						0.80A							0.33A					
External power s	uppiv –	Voltage					_						24VD0	C +20%, -159	%				
	(	Current					-							0.15A					

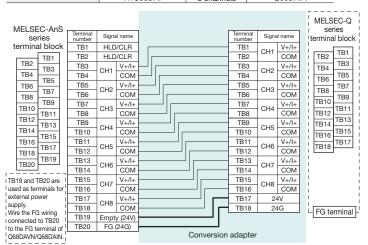
4. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

With A1S62DA and Q62DAN, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

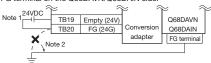
## 5) ERNT-ASQT68DA Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT68DA	A1S68DAV	8 channels	Q68DAVN
ERN I-ASQ 100DA	A1S68DAI	8 channels	Q68DAIN



#### Notes

- 1. For the power supply (power supply terminals TB17 and TB18) to the Q68DAN/Q68DAIN side, use terminal numbers TB19 and TB20 on the MELSEC-AnS series side.
- 2. Wire the FG terminal connected to terminal number TB20 on the MELSEC-AnS series side to the FG terminal on the Q68DAVN/Q68DAIN side.



3. Q68DAVN/Q68DAIN does not have an analog output hold/clear setting terminal Analog output hold/clear setting needs to be performed using Q68DAVN/Q68DAIN intelligent function module switch settings.

[Specification comp	arison cl	hart]									
	Model	MELSEC-	AnS series				MELSEC-Q series				
Specification		A1S6	8DAV				Q68DAVN				
Digital input		16-bit sigr -2048 t	,			, ,		mode: -4096 to 409 7, -16384 to 16383)			
Analog output		-10 to 0 to 10VDC (External I	oad resistance: 2kΩ to 1MΩ)			10 to 10VDC (Extern	nal load resistance	value: 1kΩ to 1MΩ	)		
		Digital input	Analog output	An	alog output	Normal re	esolution mode	High resolu	tion mode		
		2000	10V		range	Digital input value	Maximum resolution	Digital input value	Maximum resolution		
I/O characteristics		1000	5V		0 to 5V	0 to 4000	1.25mA	0 to 12000	0.416mV		
I/O CHARACTERISTICS		0	0V	ge	1 to 5V	0 10 4000	1.0mA	0 10 12000	0.333mV		
		-1000	-5V	Voltage	-10 to 10V		2.5mA	-16000 to 16000	0.625mV		
		-2000	-10V	>	User range	-4000 to 4000	0.75mV	-12000 to 12000	0.333mV		
Maximum resolution		5n	nV		setting						
Overall accuracy		Voltage: ±1.0	0% (±100mV)					±0.1% (Voltage: ±10			
•		9	, ,		At am	bient temperature o		±0.3% (Voltage: ±3	0mV)		
Maximum conversion sp		Within 4ms	/ 8 channels				80µs/channel				
Absolute maximum outp		-	-				±12V				
No. of analog output poi		8 channel	s/module			3	3 channels/module				
Between output terminal a programmable controller p		Photocoup	ler isolation	Photocoupler isolation							
Between channels		Non-is	olated				Non-isolated				
Between channels  Between external pow and analog output	er supply	-	-			Ti	ransformer isolatio	n			
No. of occupied points 32 points				16 points							
Connected terminal block 20-point terminal block			minal block			18	-point terminal blo	ck			
Current consumption		0.6	5A				0.38A				
External newer aunaly	Voltage	-	-			2	4VDC +20%, -15%	Ó			
External power supply	Current	-	0.2A								

	Model	MELSEC-	AnS series	MELSEC-Q series							
Specification		A1S6	8DAI				Q68DAIN				
Digital input		16-bit sigr	ned binary	16-bit signed binary (Normal resolution mode: -4096 to 4095,							
Digital input		0 to	4096		F	ligh resolution mod	le: -12288 to 1228	7, -16384 to 1638	3)		
Analog output		4 to 20mA DC (External lo	pad resistance: 0 to 600Ω)		(	to 20mA DC (Exte	ernal load resistanc	e value: 0 to 6000	2)		
		Digital input	Analog output	Α	nalog output	Normal re	esolution mode	High reso	lution mode		
I/O characteristics		4000	20mA		range	Digital input value	Maximum resolution	Digital input value	Maximum resolution		
I/O CHARACTERISTICS		2000	12mA	Ħ	0 to 20mA	0 to 4000	5μΑ	0 to 12000	1.66µA		
		0	4mA	urrent	4 to 20mA	0 10 4000	4μA	0 10 12000	1.33µA		
Maximum resolution	Maximum resolution			Ō	User range setting	-4000 to 4000	1.5µA	-12000 to 12000	0.83μΑ		
Overall accuracy  Voltage: ±1.0% (±200µA)  At ambient temperature of 25±5°C, within ±0.1% (Current						±0.1% (Current: ±	20μA)				
Overall accuracy		voitage. ±1.0	0% (±200μA)		At am	bient temperature	of 0 to 55°C, within	±0.3% (Current: :	±60μA)		
Maximum conversion sp	eed	Within 4ms	/ 8 channels				80µs/channel				
Absolute maximum outp	out	-	_		21mA						
No. of analog output poi	ints	8 channel	s/module	8 channels/module							
Between output terminal	and	Photocoup	lor isolation			Dŀ	notocoupler isolation	nn.			
Between output terminal a programmable controller	power supply	Filotocoup	iei isolation			FI	lotocoupler isolatic	л I			
		Non-is	olated				Non-isolated				
Between external pov	ver supply	_	_			т	ransformer isolation	2			
and analog output						"	ansionner isolation	11			
No. of occupied points 32 points				16 points							
Connected terminal bloc	k	20-point ter	minal block	18-point terminal block							
Current consumption		0.8	5A	0.38A							
External power supply	Voltage	-	-			2	4VDC +20%, -15%	Ó			
External power supply	Current	-				0.27A					

### Notes

- 4. For □ areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

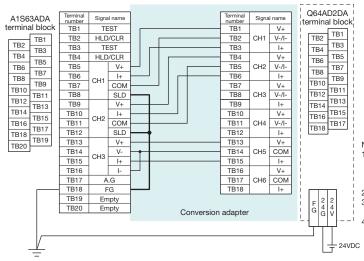
  5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of
- the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### Program precautions

With A1S68DAV/A1S68DAI and Q68DAVN/Q68DAIN, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

## 6) ERNT-ASQT63ADA Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT63ADA	A1S63ADA	Input: 2 channels Output: 1 channels	Q64AD2DA



- Notes
  1. Q64AD2DA does not have an offset/gain setting terminal or analog output hold/clear setting terminal. Analog output hold/clear setting needs to be performed using Q64AD2DA intelligent function module switch settings. For offset/gain and analog output hold/clear settings, refer to the Q64AD2DA user's manual
- 2. Be sure to ground the FG terminal (TB18) of A1563ADA.
  3. The 24VDC power supply and FG need to be connected to the external power supply connector located below the Q64AD2DA module.
- 4. Q64AD2DA does not have an AG terminal. The wiring that connects the AG terminal (TB17) and the SDL terminal (TB12) on the MELSEC-AnS side, therefore, is not required. However, leaving the connection as is causes no problem because those wires are not connected in the conversion adapter.

#### [Specification comparison chart]

[Opo.	Mication	n comparison cl Model	iai ij	NA	ELSEC-A	AnS seri	ies				MEL	SEC-Q series			
Spec	ification	Iviodei		IVI	A1S63		103					64AD2DA			
opec		alog input points			2 char						-	channels			
	Analog	Voltage			Z Cilai	IIIIeis	-10	0 to 0 to 10VDC (I	nnut	rocistanco: 1N		CHAIIIEIS			
	input	Current		-20 to 0 to 20n	nA DC (Ir	nnut roc			0 to 20mA DC (Input resistance: 250Ω)						
	прис	Current		096 to 4095 (W							0 to 2011A DC	(ITIPUL TESISLAI	to 4095, -1096 to 4 16384 to 16383, -32  High resolution Digital Noutput value re 0 to 16000 ( -16000 to 16000 ( -3000 to 13500 ( 0 to 12000 ( -3000 to 13500 ( 0 to 12000 ( -3000 to 13500 ( 0 to 55°C ( ±0.4% ( ±64 digits) ( ±40.4% ( ±48 digits) ( ±40.4% ( ±48 digits) ( ±5, -4096 to 4095 ( -16384 to 16383 ( Ee: 1kΩ to 1MΩ)  High resolution Digital Noutput value re 0 to 12000 ( -16000 to 16000 ( -16000 to 12000 ( -16000 to		
	Digital au	tput value		192 to 8191 (W				,		Normal reso	lution mode: -96	to 4095, -409	6 to 4095, -1096	to 4595	
	Digital ou	itput value		88 to 12287 (W					High	resolution mod	e: -384 to 16383, -	-288 to 12287,	-16384 to 16383,	-3288 to 1378	
			-122	.00 to 12207 (VI	viieli set		output value				NI	attender of a	Little bear a both		
			Analog inp	ut 1//	1000	$\overline{}$	<u> </u>		Input	Analog	Normal resol	Maximum		on mode Maximum	
			10V		4000 000		1/8000 8000	1/12000 12000	- d	input range	Digital		_		
	I/O chara	ataulatia a	5V or 20m.		000		4000	6000		0 to 101/	output value	resolution 2.5mV	-	resolution 0.625mV	
	I/O chara	cteristics					0		-	0 to 10V	0.4- 4000		0 10 16000		
			0V or 4mA		0			0	- je	0 to 5V	0 to 4000	1.25mV	0 to 12000	0.416mV	
			-5V or -12m		000		-4000	-6000	Voltage	1 to 5V	4000 1 4000	1.0mV	10000   10000	0.333mV	
			-10V	-4	000		-8000	-12000	- 8	-10 to 10V	-4000 to 4000	2.5mV	-16000 to 16000	0.625mV	
				1/4	4000		1/8000	1/12000		1 to 5V	-1000 to 4500	1.0mV	-3000 to 13500	0.333mV	
_									-	(Extended mode)					
Sio	Maximum	n resolution	Voltage	2.5	5mV	1	1.25mV	0.83mV	ŧ	0 to 20mA	0 to 4000	5µA	0 to 12000	1.66µA	
Ve			Current	10	0μΑ		5μΑ	3.33µA	Current	4 to 20mA		4µA		1.33µA	
A/D conversion							- 1		- Co	4 to 20mA	-1000 to 4500	4µA	-3000 to 13500	1.33µA	
Õ										(Extended mode)					
₹	Conversion	on speed	1ms (When set t		,,	,		solution of 1/8000),			500	Dµs/channel			
				3ms (When	set to a re	esolution	n of 1/12000)					<u> </u>	ı		
									Input	Analog	Normal resol				
									므	input range	0 to 55°C	25±5°C		25±5°C	
										0 to 10V				±0.1%	
					±11	%			Φ	-10 to 10V			(±64 digits)	(±16 digits)	
		all accuracy	_						Voltage	0 to 5V					
	Overall ad						on of 1/4000)		No	1 to 5V					
	Overan ac	Jourday		±80 (When s	set to a re	esolutio	on of 1/8000)		1	1 to 5V	±0.4%	±0.1%			
				±120 (When s	set to a re	esolutio	on of 1/12000	0)		(Extended mode)	(±16 digits)	(±4 digits)	±0.4%	±0.1%	
									1	0 to 20mA			(±48 digits)	(±12 digits)	
									Current	4 to 20mA					
									Ju.	4 to 20mA					
										(Extended mode)					
	Absolute	maximum input						Voltage: ±15V,	Curr	rent: ±30mA					
	No. of an	alog output points			1 cha	nnel					2	channels			
						Voltaç	ge output	Current output							
	District issue		When set to a	resolution of 1	/4000	-4000	0 to 4000	0 to 4000		Norm	al resolution mo	de: -96 to 409	95, -4096 to 409	5	
	Digital inp	out	When set to a	resolution of 1	/8000	-8000	0 to 8000	0 to 8000		High re	solution mode:	-288 to 12287	7, -16384 to 163	83	
			When set to a	resolution of 1/	/12000	-12000	0 to 12000	0 to 12000		-					
	Analog	Voltage	-10	to 10VDC (Exte	ernal load	d resista	ance: 2kΩ to	1MΩ)		-10 to	10VDC (Externa	l load resista	nce: 1kΩ to 1MΩ	2)	
_	output	Current					0 to 20n	nA DC (External lo	oad r	esistance: 0Ω	to 600Ω)				
J/A conversion	·						Analog	output value	Ħ		Normal resol	ution mode	High resolution	on mode	
/ers			1/4000	1/8000	1/120	000		out Current outpu	Output	Analog	Digital	Maximum		Maximum	
0			4000	8000	120		10V	20mA	õ	output range	input value	resolution	"	resolution	
Α	I/O chara	cteristics	2000	4000	600		5V	12mA	Ф	0 to 5V	·	1.25mV	·	0.416mV	
0	., o onara	0.001100	0	0	0		0V	4mA	Voltage	1 to 5V	0 to 4000	1.0mV	0 to 12000	0.333mV	
			-2000	-4000	-600		-5V	-	0	-10 to 10V	-4000 to 4000	2.5mV	-16000 to 16000	0.625mV	
			-4000	-8000	-120		-3V -10V		1 1	0 to 20mA		2.5πV 5μA		1.66µA	
			-4000	-0000	-120		ge output	Current output	Current	4 to 20mA	0 to 4000	5μA 4μA	0 to 12000	1.33µA	
			Whon set to a	resolution of 1	/4000		.5mV	5µA	0	- to ZuniA		- +μΛ	l	1.55μΑ	
	Maximum	resolution		resolution of 1			.5mv 25mV								
								2.5µA							
			vviien set to a	resolution of 1/	12000	0.8	83mV	1.7µA	1						

(Continued from previous page)								
Model			MELSEC-AnS series		MELSEC-Q series			
Spe	Specification		A1S63ADA			Q64AD2DA		
	Conversion speed		1ms (When set to a resolution of 1/4000), 2ms (When set to a resolution of 1/8000), 3ms (When set to a resolution of 1/12000)	500µs/channel				
_					Analog	Normal resolution mode	High resolution mode	
ior				ir	nput range	0 to 55°C	25±5°C	
A conversion	Overall a	ccuracy	Voltage output: ±1% (±0.1V) Current output: ±1% (±0.2mA)	Voltage	0 to 5V 1 to 5V -10 to 10V	±0.3% (±30mV)	±0.1% (±10mV)	
D/A				Current	0 to 20mA 4 to 20mA	±0.3% (±60µA)	±0.1% (±20µA)	
	Absolute maximum output		Voltage: ±12V, Current: +28mA	Voltage: ±12V, Current: +21mA			21mA	
	Output sh	nort-circuit protection	Υ	Yes				
Isolation method		I/O terminal and mable controller apply	Photocoup	oler is	solation			
o	Between	channels	Non-isolated					
Isolati	Between e	external power supply g I/O	-	Non-isolated				
	. \	/oltage	-	24VDC ±15%				
Exte		Rush current	-	2.5A 150µs or less				
powe	er supply (	Current consumption	-	0.19A				
No.	of occupie	ed I/O points	32 points	16 points				
Con	nection me	ethod	20-point terminal block	18-point terminal block				
Inter	nal current	consumption (5VDC)	0.8A	0.17A				

#### Notes

- 5. For mareas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment
- 6. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### Program precautions

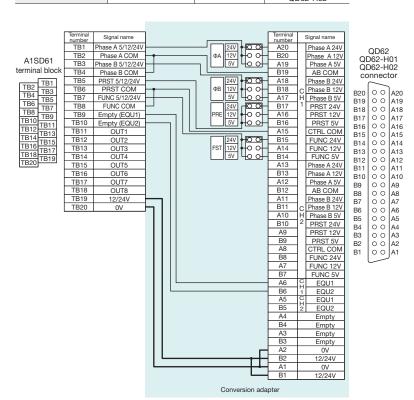
- 1) With A1S63ADA and Q64AD2DA, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) Q64AD2DA has a faster conversion speed than A1S63ADA. As a result, the possibility exists that noise not introduced in A1S63ADA will be introduced as analog signals in
- 2) Q64AD2DA has a faster conversion speed than A1S63ADA. As a result, the possibility exists that noise not introduced in A1S63ADA will be introduced as analog signals in Q64AD2DA. In such a case, use an averaging processing function to remove the impact of the noise.
- 3) Use Q64AD2DA CH5 for analog output CH3 of A1S63ADA.

# For High-Speed Counter Modules

## 1-slot type

## 1) ERNT-ASQTD61 Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
			QD62
ERNT-ASQTD61	A1SD61	1 channel	QD62-H01
			QD62-H02



### Notes

- 1. Set the short bar of the setting pin located inside the conversion adapter to 24V during [24V]input, to 12V during [12V]input, and to 5V during [5V] input, in accordance with the input voltage of the phase A pulse input [6A], the phase B pulse input [6B], the preset input [7E], and the function start input [7E]. Note that, at the time of factory shipment, all channels are set to [24V].
- 2. QD62/QD62-H01/QD62-H02 does not have an A1SD61 limit switch output function. The OUT1 (TB11) to OUT8 (TB18) terminals therefore cannot be used. In a case where a substitution is to be made using a QD62 matching output function [CH1 EQU1 terminal (A6), CH1 EQU2 terminal (B6)], use the A1SD61 empty terminals [EQU1 terminal (TB9), EQU2 terminal (TB10)]. Note that specifications will differ, such as a fewer number of settings, etc.

	TB9	Empty (EQU1)
	TB10	Empty (EQU2)
	TB11	OUT1
	TB12	OUT2
	TB13	OUT3
	TB14	OUT4
	TB15	OUT5
	TB16	OUT6
	TB17	OUT7
	TB18	OUT8
<u>+</u>	TB19	12/24V
τ	TB20	0V

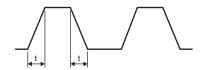
3. After setting the voltage setting pin, connect the external wiring.

### [Specification comparison chart]

[Specification comparison chart]						
	Model	MELSEC-AnS series	MELSEC-Q series			
Specification		A1SD61	QD62			
		Switched by setting pin	Switched by intelligent function module switch setting			
Counting speed switch settings		50k side 10k side	200k 100k 10k			
		Suk side Tok side	(100k to 200kPPS) (10k to 100kPPS) (10kPPS or less)			
No. of channe	ls	1 channel	2 channels			
		1-phase input	1-phase input (1x/2x)			
Count	Phase	2-phase input	2-phase input (1x/2x/4x)			
input signal	0: 11 1	, p.	CW/CCW input 5/12/24VDC			
	Signal level		5/12/24VDC 2 to 5mA			
	(ΦA, ΦB) Maximum	1-phase input: 50kPPS 1-phase input: 10kPPS	2 to SITIA			
	counting speed	2-phase input: 50kPPS 2-phase input: 7kPPS	200kPPS (*1) 100kPPS (*1) 10kPPS (*1)			
		2 phase input control	32-bit signed binary			
	Counting range		-2147483648 to 2147483647			
	Model	UP/DOW	/N preset counter + Ring counter function			
		100μs				
		- 100μ3				
			5us 10us 100us			
		20µs	5μs   10μs   100μs			
Counter		50µs 50µs				
	Minimum count	(1-phase input)				
	pulse width (duty ratio: 50%)					
			2.5µs 2.5µs 50µs 50µs			
		10µs 10µs	Curing 2-phase input Curing 2-			
			Minimum phase difference: Minimum phase difference: Minimum phase difference:			
		(1- or 2-phase input)	1.25µs			
		71µs 71µs				
		(2-phase input)				
Limit switch	Comparison range	32-bit signed binary	-			
output	Comparison result	NO contact operation dog ON address ≤ Count value ≤ Dog OFF address	-			
	Comparison range	NC contact operation dog OFF address ≤ Count value ≤ Dog ON address				
Coincidence	Comparison range	_	32-bit signed binary Setting value < Count value			
output	Comparison result	_	Setting value = Count value			
output	Companson result		Setting value > Count value			
	Preset		5/12/24VDC			
External input	Function start		2 to 5mA			
	Limit quitab autaut	Transistor (open collector) output	_			
External output	Limit switch output	12/24VDC, 0.1A/point, 0.8A/common				
External output	Coincidence output	_	Transistor (sink type) output			
N. 6:12	<u>'</u>		12/24VDC, 0.5A/point, 2A/common			
No. of I/O occ	<u> </u>	32 points	16 points			
Connection m		20-point terminal block	40-pin connector			
Internal current consumption (5VDC)		0.35A	0.30A			

\*1: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below. When a pulse with a large rise/fall time is counted, miscounting may occur. Caution is required.

Common to 1-phase input and 2-phase input Rise/Fall time setting 200k 100k 10k 200kPPS 100kPPS 10kPPS t=1.25µs or less t=2.5µs or less 100kPPS 100kPPS 10kPPS 10kPPS 10kPPS t=25µs or less 500PPS



t=500µs

- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
   For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- 1) With A1SD61 and QD62, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) The QD62 coincidence output function is used as a substitute for the A1SD61 limit switch output function. The sequence program needs to be changed.
- 3) For QD62, use the CH1 input/output signals (X, Y) and buffer memory address. CH2 does not operate.
  4) The counting speed setting set using the setting pin with A1SD61 is set using the intelligent function module switch setting with QD62.

Model		MELSEC-AnS series	MELSEC-Q series	
Specification		A1SD61	QD62-H01	
		Switched by setting pin	Switched by intelligent function module switch setting	
Counting spee	d switch settings	50k side 10k side	Fixed to 50k	
No. of channel	S	1 channel	2 channels	
		1-phase input	1-phase input (1x/2x)	
Count	Phase	2-phase input	2-phase input (1x/2x/4x)	
input signal		·	CW/CCW input	
input signal	Signal level		2/24VDC	
	(ΦA, ΦB) Maximum	1-phase input: 50kPPS 1-phase input: 10kPPS	0 5mA 1-phase input: 50kPPS (*2)	
	counting speed	2-phase input: 50kPPS 2-phase input: 7kPPS	2-phase input: 50kPPS (2)	
	counting speed		igned binary	
	Counting range		8 to 2147483647	
	Model		nter + Ring counter function	
Counter	Minimum count pulse width (duty ratio: 50%)	20μs  20μs  50μs  (1-phase input)  142μs  (1- or 2-phase input)  71μs  (2-phase input)	20µs  20µs  10µs  10µs  (1- or 2-phase input)	
	Comparison range	32-bit signed binary	-	
Limit switch		NO contact operation dog ON address ≤ Count value ≤ Dog OFF address	S	
output	Comparison result	NC contact operation dog OFF address ≤ Count value ≤ Dog ON address	-	
	Comparison range	-	32-bit signed binary	
Coincidence	_		Setting value < Count value	
output	Comparison result	<del>-</del>	Setting value = Count value	
	Preset	5/12	Setting value > Count value 2/24VDC	
External input	Function start		o 5mA	
		Transistor (open collector) output	0.00	
Estamal autout	Limit switch output	12/24VDC, 0.1A/point, 0.8A/common	-	
External output	Coincidence output	•	Transistor (sink type) output	
·		_	12/24VDC, 0.5A/point, 2A/common	
No. of I/O occu		32 points	16 points	
Connection me		20-point terminal block	40-pin connector	
Internal current	consumption (5VDC)	0.35A	0.30A	
*2: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below. When a pulse larger than t=50µs is counted, miscounting may occur. Caution is required.  Rise/Fall time   Common to 1-phase input and 2-phase input				

t=5µs

t=50µs

- Notes
  5. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
  6. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- 1) With A1SD61 and QD62-H01, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) The QD62-H01 coincidence output function is used as a substitute for the A1SD61 limit switch output function. The sequence program needs to be changed.
  3) For QD62-H01, use the CH1 input/output signals (X, Y) and buffer memory address. CH2 does not operate.
  4) The counting speed setting set using the setting pin with A1SD61 is set using the intelligent function module switch setting with QD62-H01.

50kPPS

5kPPS

	Model	MELSEC-	AnS series	MELSEC-Q series	
Specification		A1S	SD61	QD62-H02	
Counting speed switch settings		Switched b	y setting pin	Switched by intelligent function module switch setting	
Counting spee	a switch settings	50k side	10k side	Fixed to 10k	
No. of channel	s	1 ch	annel	2 channels	
		1-nhas	se input	1-phase input (1x/2x)	
Count	Phase	·	se input	2-phase input (1x/2x/4x)	
input signal			<u> </u>	CW/CCW input	
	Signal level			24VDC	
	(ΦA, ΦB) Maximum	1-phase input: 50kPPS	1-phase input: 10kPPS	5mA	
	counting speed	2-phase input: 50kPPS	2-phase input: 7kPPS	2-phase input: 7kPPS (*3)	
		2 phase input: ooki 1 o		ned binary	
	Counting range		-	to 2147483647	
	Model		UP/DOWN preset counte	er + Ring counter function	
Counter	Minimum count pulse width (duty ratio: 50%)	20µs  20µs  10µs  (1- or 2-phase input)	100μs  50μs  (1-phase input)  142μs  71μs  (2-phase input)	100μs 50μs 50μs (1-phase input) 142μs 71μs (2-phase input)	
Limit switch	Comparison range	32-bit sign	· · · · · · · · · · · · · · · · · · ·	-	
output	Comparison result		ss ≤ Count value ≤ Dog OFF address	-	
	Comparison range	NC contact operation dog OFF address ≤ Count value ≤ Dog ON address  _		32-bit signed binary	
Coincidence	Companson range			Setting value < Count value	
output	Comparison result	_	-	Setting value = Count value	
				Setting value > Count value	
External input	Preset			24VDC	
LATETHAT HIPUL	Function start			5mA	
	Limit switch output		collector) output	_	
External output		12/24VDC, 0.1A/po	oint, 0.8A/common		
	Coincidence output	_		Transistor (sink type) output	
No. of I/O occu	· ·	00 -	ainta	12/24VDC, 0.5A/point, 2A/common	
No. of I/O occu	· · · · · · · · · · · · · · · · · · ·	32 p	oints minal block	16 points 40-pin connector	
	consumption (5VDC)	20-point ter 0.3		40-pin connector 0.30A	
3: The counting in the table b	g speed is affected below. When a pulse		e countable counting speed is as show	I .	

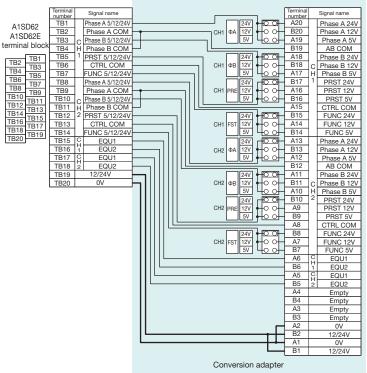


- Note.
  7. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
  8. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- 1) With A1SD61 and QD62-H02, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) The QD62-H02 coincidence output function is used as a substitute for the A1SD61 limit switch output function. The sequence program needs to be changed.
  3) For QD62-H02, use the CH1 input/output signals (X, Y) and buffer memory address. CH2 does not operate.
  4) The counting speed setting set using the setting pin with A1SD61 is set using the intelligent function module switch setting with QD62-H02.

## 2) ERNT-ASQTD62 Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQTD62	A1SD62	2 channels	QD62
ENNI-ASQID02	A1SD62E	2 Charmers	QD62E



OD62 QD62E connector

B19 B18 B17 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2

#### Notes

- Notes

  1. Set the short bar of the setting pin located inside the conversion adapter to 24V during [24V] input, to 12V during [12V] input, and to 5V during [5V] input, in accordance with the input voltage of the phase A pulse input [4A], the phase B pulse input [4B], the preset input [4B], and the function start input [4B]. Note that, at the time of factory shipment, all channels are set to [24V].

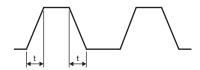
  2. After setting the voltage setting pin, connect the external wiring.

### [Specification comparison chart]

Specificatio	n comparison cl	nartj						
	Model	MELSEC-AnS s	series		MELSEC-Q series			
Specification		A1SD62	A1SD62		QD62			
		Switched by setti	ing pin	Switched by intelligent function module switch setting				
Counting speed switch settings		100k side	10k side	200k (100k to 200kPPS)	100k (10k to 100kPPS)	10k (10kPPS or less)		
No. of channels				2 channels	,			
Phase 1-phase in		1-phase inpi 2-phase inpi		1-phase input (1x/2x) 2-phase input (1x/2x/4x) CW/CCW input  5/12/24VDC 2 to 5mA				
	Maximum	1-phase input: 100kPPS 1-	-phase input: 10kPPS					
	counting speed		2-phase input: 7kPPS	200kPPS (*1)	100kPPS (*1)	10kPPS (*1)		
	Counting range	24-bit binar 0 to 167772	y		32-bit signed binary -2147483648 to 2147483647			
	Model			N preset counter + Ring counte				
Counter	Minimum count pulse width (duty ratio: 50%)	10µs  5µs  5µs  (1- or 2-phase input)	100 μs  50 μs  50 μs  (1-phase input)  142 μs  71 μs  71 μs  (2-phase input)	2.5µs 2.5µs During 2-phase input Minimum phase difference: 1.25µs	10µs  10µs	100µs  50µs  50µs  During 2-phase input Minimum phase difference: 25µs		
	Comparison range	24-bit binar	у		32-bit signed binary			
Coincidence output Comparison result		Setting value < Count value Setting value = Count value Setting value > Count value						
External input Preset Function start		5/12/24VDC 2 to 5mA						
External output	Coincidence output		12	Transistor (sink type) output ½/24VDC, 0.5A/point, 2A/common				
No. of I/O occu	upied points	32 points			16 points			
Connection me	ethod	20-point terminal	l block	40-pin connector				
Internal current consumption (5VDC)		0.1A		0.30A				

\*1: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below. When a pulse with a large rise/fall time is counted, miscounting may occur. Caution is required.

Counting speed switch	Common to 1-phase input and 2-phase input			
Rise/Fall time setting	200k	100k	10k	
t=1.25µs or less	200kPPS	100kPPS	10kPPS	
t=2.5µs or less	100kPPS	100kPPS	10kPPS	
t=25µs or less	-	10kPPS	10kPPS	
t=500µs	_	_	500PPS	



- 2. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

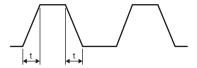
  3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- Program precautions
  1) With A1SD62 and QD62, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) The counting speed setting set using the setting pin with A1SD62 is set using the intelligent function module switch setting with QD62.

Model		MELSEC-AnS series		MELSEC-Q series			
Specification		A1SE	D62E		QD62E		
оростоанон		Switched by setting pin		Switched by intelligent function module switch setting			
Counting spee	d switch settings	100k side	10k side	200k	100k	10k	
		Took side	TOK Side	(100k to 200kPPS)	(10k to 100kPPS)	(10kPPS or less)	
No. of channels				2 channels			
Count input signal	Phase	•	e input e input		1-phase input (1x/2x) 2-phase input (1x/2x/4x)		
	Signal level			5/12/24VDC	CW/CCW input		
	(ΦA, ΦB)			2 to 5mA			
	Maximum	1-phase input: 100kPPS	1-phase input: 10kPPS			101 PPO (40)	
	counting speed	2-phase input: 100kPPS	2-phase input: 7kPPS	200kPPS (*2)	100kPPS (*2)	10kPPS (*2)	
	Counting range	Binary with			32-bit signed binary		
		0 to 16			-2147483648 to 2147483647		
	Model		UP/DOW	/N preset counter + Ring counter	er function		
Counter	Minimum count pulse width (duty ratio: 50%)	10μs 5μs 5μs (1- or 2-phase input)	100µs  50µs  50µs  (1-phase input)  142µs  71µs  71µs  (2-phase input)	5μs  2.5μs  2.5μs  2.5μs  During 2-phase input  Minimum phase difference:  1.25μs	10μs  5μs 5μs  During 2-phase input Minimum phase difference: 2.5μs	100µs  50µs 50µs  During 2-phase input Minimum phase difference: 25µs	
	Comparison range	24-bit	binary		32-bit signed binary		
Coincidence output Comparison resu		Setting		Setting value < Count value Setting value = Count value Setting value > Count value			
External in	Preset			5/12/24VDC			
External input	Function start			2 to 5mA			
External output Coincidence output			12	Transistor (source type) output /24VDC, 0.1A/point, 0.4A/comm			
No. of I/O occi	· · ·	32 p	oints		16 points		
Connection me		20-point ter		40-pin connector			
Internal current	consumption (5VDC)	0.	1A		0.33A		

\*2: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below. When a pulse with a large rise/fall time is counted, miscounting may occur. Caution is required.

Counting speed switch	Common to 1-phase input and 2-phase input			
Rise/Fall time setting	200k	100k	10k	
t=1.25µs or less	.25µs or less 200kPPS		10kPPS	
t=2.5µs or less	100kPPS	100kPPS	10kPPS	
t=25µs or less	_	10kPPS	10kPPS	
t=500µs	_	_	500PPS	



### Notes

- 4. For a reas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

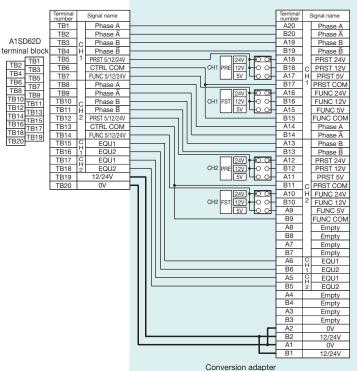
- Program precautions

  1) With A1SD62E and QD62E, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

  2) The counting speed setting set using the setting pin with A1SD62E is set using the intelligent function module switch setting with QD62E.

## 3) ERNT-ASQTD62D Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQTD62D	A1SD62D	2 channels	QD62D



QD62D connector 0 0 A20 0 0 A19 0 0 A18 0 0 A16 0 0 A16 0 0 A16 0 0 A11 0 0 A11 0 0 A11 0 0 A10 0 0 A3 0 0 A4 0 0 A3 0 0 A4 0 0 A3 0 0 A3 B20 B19 B18 B17 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1

- Set the short bar of the setting pin located inside the conversion adapter to 24V during 24V input, to 12V during 12V input, and to 5V during 5V input, in accordance with the input voltage of the preset input PRE and the function start input FST. Note that, at the time of factory shipment, all channels are set to 24V.

  2. After setting the voltage setting pin, connect the external wiring.
- When the A1SD62D terminal block is used for sink load type, change the common type of the terminals for CTRL COM (TB6 and TB13) to

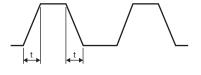
### [Specification comparison chart]

Lobcomoatio	specification comparison chart								
	Model	MELSEC-A	AnS series						
Specification		A1SD62D		QD62D					
		Switched by	setting pin	Switched by intelligent function module switch setting					
Counting spee	ed switch settings	200k side	10k side	500k	200k	100k	10k		
		200K Side	TOK SIGE	(200k to 500kPPS)	(100k to 200kPPS)	(10k to 100kPPS)	(10kPPS or less)		
No. of channel	s			2 cha	annels				
		1-phase	e innut		•	put (1x/2x)			
Count	Phase	2-phase	•			ut (1x/2x/4x)			
input signal	0: 11 1		·	F/A		W input			
	Signal level		Differentia		rd RS-422-A	a a construction and a second			
-	(ФА, ФВ)	1-phase input: 200kPPS	1-phase input: 10kPPS	l line driver level (Alvi26LS	33I (Texas Instruments) or	equivalentj			
	Maximum	2-phase input: 200kPPS	2-phase input: 7kPPS	500kPPS (*1)	200kPPS (*1)	100kPPS (*1)	10kPPS (*1)		
	counting speed	24-bit			32 bit sig	l ned binary			
	Counting range	0 to 167	•		•	to 2147483647			
	Model	0 10 107	111213	UP/DOWN preset counte	er + Ring counter function	10 2 147 403047			
Counter	Minimum count pulse width (duty ratio: 50%)	2.5µs 2.5µs (1- or 2-phase input)	100µs  50µs  50µs  (1-phase input)  142µs  71µs  (2-phase input)	2µs  2µs  1µs  1µs  During 2-phase input Minimum phase difference: 0.5µs	2.5µs 2.5µs During 2-phase input Minimum phase difference: 1.25µs	10µs    5µs   5µs      During 2-phase input   Minimum phase   difference: 2.5µs	100µs    50µs   50µs    During 2-phase input   Minimum phase   difference: 25µs		
	Comparison range	24-bit	binary			ned binary			
Coincidence				-	< Count value				
output	Comparison result			-	= Count value				
	Donast			Setting value > Count value 5/12/24VDC					
Futamal innut	Preset	5/12/24	4VDC						
External input	Function start	2 to 5	5mA	(Con		5mA RS-422-A differential line of	drivar		
					nectable to EIA standard i ik type) output	no-422-A dillerential line (	uriver)		
External output	Coincidence output			•	ooint, 2A/common				
No. of I/O occi	<u> </u>	32 pc			16 p	oints			
Connection me		20-point ter	minal block		40-pin c	onnector			
Internal current	consumption (5VDC)	0.2	5A	0.38A					

\*1: The counting speed is affected by the pulse rise time and fall time t. The countable counting speed is as shown in the table below.

When a pulse with a large rise/fall time is counted, miscounting may occur. Caution is required.

Counting speed switch	Common to 1-phase input and 2-phase input							
Rise/Fall time setting	500k	200k	100k	10k				
t=0.5µs or less	500kPPS	200kPPS	100kPPS	10kPPS				
t=1.25µs or less	200kPPS	200kPPS	100kPPS	10kPPS				
t=2.5µs or less	_	100kPPS	100kPPS	10kPPS				
t=25µs or less	_	_	10kPPS	10kPPS				
t=500µs	_	_	_	500PPS				



- 2. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  3. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

- Program precautions

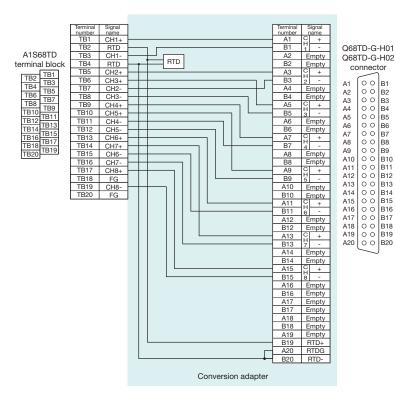
  1) With A1SD62 and QD62D, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) The counting speed setting set using the setting pin with A1SD62D is set using the intelligent function module switch setting with QD62D.

# For Temperature Input Modules

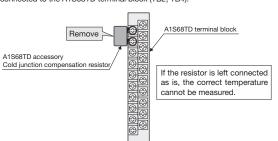
## 1-slot type

# 1) ERNT-ASQT68TD-H01 Terminal block (20P)→Connector (40P) ERNT-ASQT68TD-H02 Terminal block (20P)→Connector (40P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT68TD-H01	A1S68TD	O abannala	Q68TD-G-H01
ERNT-ASQT68TD-H02	AISOOID	8 channels	Q68TD-G-H02



1. The cold junction compensation resistor (RTD) is built into the conversion adapter. Be sure to remove the cold junction compensation resistor (RTD) connected to the A1S68TD terminal block (TB2, TB4).



2. Q68TD-G-H01/Q68TD-G-H02 does not have an FG terminal. The FG line connected to the FG terminals (TB18, TB20) on the MELSEC-AnS side, therefore, is not required. However, leaving the connection as is causes no problem because those wires are not connected in the conversion adapter.

## [Specification comparison chart]

Specif	fication comparison chart]							
	Model	MELSEC-AnS series	MELSEC-Q series					
Specific	cation	A1S68TD	Q68TD-G-H02	Q68TD-G-H01				
Input te	emperature	0 to 1700°C	-270 to	1820°C				
	Taman anatuma a anusamian walus	16-bit signed binary	16-bit sig	ned binary				
Output	Temperature conversion value	(0 to 17000: Value to first decimal place × 10)	(-2700 to 18200: Value to	o first decimal place × 10)				
Output	Scaling value	16-bit signed binary (0 to 2000)	16-bit sig	ned binary				
Thermo	couple compliance standards	JIS C1602-1981	JIS C 1602-1995, IEC 60584	-1 (1995), IEC 60584-2 (1982)				
Applicab	le thermocouple and conversion accuracy	See the table on the next page.	See the table on the next page.					
Cold jur	nction compensation accuracy	±1.0°C						
Overall	accuracy	Conversion accuracy + (Temperature characteristics × Operating ambient temperature change) + Cold junction compensation accuracy						
		B, R, S: 0.3°C B, R, S, N: 0.3°C						
Resolut	lion	K, E, J, T: 0.1°C	K, E, J,	T: 0.1°C				
Convers	sion speed	400ms / 8 channels	640ms / 8 channels	320ms / 8 channels				
No. of t	emperature input points	8 channels + Pt100 cold junction compensation / module						
Disconn	nection detection	Detected per channel None (*1)						
징 Bet	tween thermocouple input and							
₹ pro	ogrammable controller power supply	Transformer isolation						
E Bet	tween thermocouple input and channel							
solation method but Bet but Be	tween cold junction compensation and		Non-isolated					
programmable controller power supply			Non-isolated					
No. of c	occupied I/O points	32 points	16 p	oints				
Connec	ction method	20-point terminal block	40-pin connector					
Internal	current consumption (5VDC)	0.32A	0.65A	0.49A				

<sup>\*1:</sup> Q68TD-G-H01 is provided with a disconnection monitor function.

- 3. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

[Applicable thermocouples and conversion accuracy]

		ouples and conversion ac MELSEC-AnS seri		MELSEC-Q series						
		A1S68TD								
Thermocouple	Measured temperature range	Conversion accuracy (At an operating ambient temperature of 25±5°C)	Temperature characteristics (With a 1°C operating ambient temperature change)	Measured temperature range (*2)	Conversion accuracy (At an operating ambient temperature of 25±5°C)	Temperature characteristics (With a 1°C operating ambient temperature change)	Maximum temperature error at a 55°C ambient temperature			
	-			0 to 600°C	(*3)	(*3)	(*3)			
В		_	_	600 to 800°C	±3.0°C	±0.4°C	±13.0°C			
ь	800 to 1700°C	±2.5°C	±0.4°C	800 to 1700°C	±2.5°C	±0.4°C	±12.5°C			
	_	_	_	1700 to 1820°C	(*3)	(*3)	(*3)			
	_			-50 to 0°C	(*3)	(*3)	(*3)			
R		_	_	0 to 300°C	±2.5°C	±0.4°C	±12.5°C			
н	300 to 1600°C	±2°C	±0.3°C	300 to 1600°C	±2.0°C	±0.3°C	±9.5°C			
	-	-	-	1600 to 1760°C	(*3)	(*3)	(*3)			
				-50 to 0°C	(*3)	(*3)	(*3)			
S	_	_	_	0 to 300°C	±2.5°C	±0.4°C	±12.5°C			
3	300 to 1600°C	±2°C	±0.3°C	300 to 1600°C	±2.0°C	±0.3°C	±9.5°C			
	_	-	-	1600 to 1760°C	(*3)	(*3)	(*3)			
				-270 to -200°C	(*3)	(*3)	(*3)			
K	_	_	_	-200 to 0°C	±0.5°C or ±0.5% of measured	±0.06°C or ±0.2% of measured	±11.0°C			
				-200 to 0 C	temperature, whichever is greater	temperature, whichever is greater	±11.0 C			
	0 to 1200°C	±0.5°C or ±0.25% of measured	±0.07°C or ±0.02% of measured	0 to 1200°C	±0.5°C or ±0.25% of measured	±0.06°C or ±0.02% of measured	±9.0°C			
	0 to 1200 C	temperature, whichever is greater	temperature, whichever is greater	0 10 1200 C	temperature, whichever is greater	temperature, whichever is greater	±9.0 C			
	ı	_	-	1200 to 1370°C	(*3)	(*3)	(*3)			
				-270 to -200°C	(*3)	(*3)	(*3)			
	-	_	-	-200 to 0°C	±0.5°C or ±0.5% of measured	±0.06°C or ±0.15% of measured	±8.5°C			
Е					temperature, whichever is greater		±0.5 0			
_	0 to 800°C	±0.5°C or ±0.25% of measured	±0.07°C or ±0.02% of measured	0 to 900°C	±0.5°C or ±0.25% of measured	±0.06°C or ±0.02% of measured	±6.75°C			
	0 to 800 C	temperature, whichever is greater	temperature, whichever is greater	0 10 900 0	temperature, whichever is greater	temperature, whichever is greater	±0.75 C			
	_	_	_	900 to 1000°C	(*3)	(*3)	(*3)			
	_	_	_	-210 to -40°C	(*3)	(*3)	(*3)			
J	0 to 750°C	±0.5°C or ±0.25% of measured	±0.07°C or ±0.02% of measured	-40 to 750°C	±0.5°C or ±0.25% of measured	±0.06°C or ±0.02% of measured	±5.625°C			
Ü	0 10 730 0	temperature, whichever is greater	temperature, whichever is greater		temperature, whichever is greater	temperature, whichever is greater	10.020 0			
	_	_	_	750 to 1200°C	(*3)	(*3)	(*3)			
				-270 to -200°C	(*3)	(*3)	(*3)			
	-	_	_	-200 to 0°C	±0.5°C or ±0.5% of measured	±0.06°C or ±0.1% of measured	±6.0°C			
Т				-200 10 0 0	temperature, whichever is greater	temperature, whichever is greater	±0.0 0			
'	0 to 350°C	±0.5°C or ±0.25% of measured	±0.07°C or ±0.02% of measured	0 to 350°C	±0.5°C or ±0.25% of measured	±0.06°C or ±0.02% of measured	±2.625°C			
	0 10 050 0	temperature, whichever is greater	temperature, whichever is greater		temperature, whichever is greater	temperature, whichever is greater	12.025 0			
	_	_	_	350 to 400°C	(*3)	(*3)	(*3)			
				-270 to -200°C	(*3)	(*3)	(*3)			
				-200 to 0°C	±0.5°C or ±0.5% of measured	±0.06°C or ±0.2% of measured	±11.0°C			
N		Not applicable			temperature, whichever is greater	''	111.00			
14		inot applicable		0 to 1250°C	±0.5°C or ±0.25% of measured	±0.06°C or ±0.02% of measured	±9.375°C			
					temperature, whichever is greater					
				1250 to 1300°C	(*3)	(*3)	(*3)			

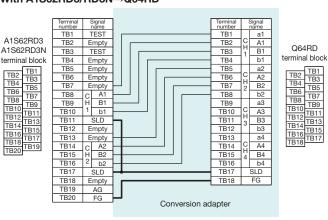
<sup>\*2:</sup> When a value outside the stated measured temperature range is input from the thermocouple, the value is treated as the maximum/minimum value of the measured temperature range.
\*3: The temperature is measurable, but the accuracy is not guaranteed.

- 1) With A1S68TD and Q68TD-G-H02/Q68TD-G-H01, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.
  2) Q68TD-G-H01 has a faster conversion speed than A1S68TD. As a result, the possibility exists that noise not introduced in A1S68TD will be introduced as analog signals in Q68TD-G-H01. In such a case, use an averaging processing function to remove the impact of the noise
  3) The thermocouple type set using a DIP switch with A1S68TD is set using the intelligent function module switch with Q68TD-G-H01/A68TD-G-H02.

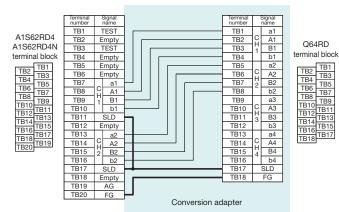
## 2) ERNT-ASQT62RD Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model	
	A1S62RD3 A1S62RD3N			
ERNT-ASQT62RD	A1S62RD4	2 channels	Q64RD	
	A1S62RD4N			

### With A1S62RD3/RD3N→Q64RD



### With A1S62RD4/RD4N→Q64RD



## Notes

- 1. When replacing a four-line module (A1S62RD4, A1S62RD4N), be sure to remove the wiring between the terminals below. If the wiring is left connected, the correct temperature cannot 1) When using 1 channel only ····· Wiring between terminal b1 (TB10) ↔ terminal b2 (TB16)
- be measured.
- 2) When using 2 channels ······· Wiring between terminal b1 (TB10) ↔ terminal a2 (TB13)
  2. Ground the FG terminal (TB18) of Q64RD using the FG terminal (TB20) of A1S62RD3/A1S62RD4/A1S62RD3N/A1S62RD4N.
- 3. The Q64RD side does not have an AG terminal. The wiring connected to the AG terminal (TB19) on the MELSEC-AnS side, therefore, is not required. However, leaving the connection as is causes no problem because those wires are not connected in the conversion adapter.

Q64RD

TB6 TB7 TB10 TB11 TB12 TB13 TB5

### [Specification comparison chart]

L-p	Model	-3	MELCEC	AmC namina		MELSEC O corrigo		
Specification	ivlodel	A1000DD0		AnS series	A4CCODD (N)	MELSEC-Q series		
•		A1S62RD3	A1S62RD4	A1S62RD3N	A1S62RD4N	Q64RD		
Measurement method		3-wire type	4-wire type	3-wire type	4-wire type	3-wire type / 4-wire type		
Applicable platinum RTD		(JIS C 16 DIN 437 JPt	Pt100 Pt100 Pt100 1604-1989, (JIS C 1604-1989, DIN 43760-1980, IS760-1980) JPt100 JPt100 11604-1981) (JIS C 1604-1981)		, DIN 43760-1980, 7, IEC 751-am2) 100	Pt100 (JIS C 1604-1997, IEC 751 1983) JPt100 (JIS C 1604-1981)		
Output current for temperadetection	ature		A (MIN) A (MAX)	1r	mA	1mA		
Measured temperature	Pt100		-180 to	o 600°C		-200 to 850°C		
range	JPt100		-180 to	o 600°C		-180 to 600°C		
Danas avvitahina	Pt100			_		-20 to 120°C/-200 to 850°C		
Range switching	JPt100			_		-20 to 120°C/-180 to 600°C		
			16-bit sig	ned binary		16-bit signed binary		
Output		(-180	0 to 6000: Value to	first decimal place	× 10)	(-2000 to 8500: Value to first decimal place × 10)		
(temperature conversion v	alue)		32-bit sig	ned binary		32-bit signed binary		
		(-180000	to 600000: Value t	o third decimal plac	ce × 1000)	(-200000 to 850000: Value to third decimal place × 1000)		
Accuracy		±1% (Accuracy to full scale)				Ambient temperature 0 to 55°C: ±0.25% [Accuracy to maximum value (*1)] Ambient temperature 24±5°C: ±0.08% [Accuracy to maximum value (*1)]		
Resolution			(Accuracy	to ruii scalej	25°C			
Conversion speed						/channel		
No. of temperature input p	noints		2 channe	els/module	401110/	4 channels/module		
Disconnection detection	,0,110	Detected per	Detection for	Detected per	Detection for	Detected per channel		
Between platinum RTD ir programmable controller  Between platinum R		cnannei	channel all channels channel all channels Photocoupler isolation					
Between platinum RTD input and channel			isolated					
No. of occupied I/O points	3		32 p	ooints		16 points		
Connection method			20-point te	rminal block		18-point terminal block		
Internal current consumpt	ion (5VDC)	0.54A	0.44A	0.49A	0.39A	0.60A		
** **								

<sup>\*1:</sup> Maximum value of set range.

### Notes

- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 5. For detailed and general specifications not described in the specification comparison chart, refer to the user's manual of the module used. Note that the areas where the specifications differ between the MELSEC-AnS series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## Program precautions

With A1S62RD3/A1S62RD4/A1S62RD3N/A1S62RD4N and Q64RD, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

The compliance standards of the applicable platinum RTD are different from those of the MELSEC-AnS series module. Use an RTD that can be used with Q64RD.

MELSEC-AnS series	Platinum RTD								
module	RTD applicable to Q64RD	RTD not applicable to Q64RD							
A1S62RD3/A1S62RD4	JPt100 (JIS C 1604-1981)	Pt100 (JIS C 1604-1989, DIN 43760-1980)	Needs to be changed to the						
A1S62RD3N/A1S63RD4N	Pt100 (JIS C 1604-1997), JPt100 (JIS C 1604-1981)	Pt100 (JIS C 1604-1989, DIN 43760-1980, IEC 751-am2)	applicable Q64RD platinum RTD.						

# For Temperature Control Modules

## 1-slot type

## 1) ERNT-ASQT64TCTT Terminal block (20P)—Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT64TCTT	A1S64TCTT-S1	4 channels	Q64TCTTN
ERNI-ASQ1641C11	A1S64TCTRT (standard control, thermocouple)	4 Charmers	Q041CTTN

A1S64TCTT-S1 A1S64TCTRT (standard control, thermocouple) terminal block

TB2 TB1 TB4 TB3 TB6 TB5 TB8 TB7 TB10 TB11 TB12 TB11 TB14 TB15 TB16 TB15 TB16 TB17 TB18 TB19

Signal name
L1
L2
L3 
 TB2
 L2

 TB3
 L3

 TB4
 L4

 TB5
 COM 

 TB6
 Empty

 TB7
 Empty

 TB8
 CH2+

 TB9
 CH1+

 TB10
 CH2 

 TB11
 CH1 

 TB12
 CJ

 TR13
 Empty
 TB2 L3 L4 COM-TB3 TB4 TB5 COMTB6 Empty
TB7 CH1+
TB8 CH2+
TB9 CH1TB10 CH2TB11 Empty
TB12 CJ
TB13 Empty
TB14 CJ
TB15 CH3+
TB16 CH4+
TB17 CH3TB18 CH4-TB12 CJ
TB13 Empty
TB14 CJ
TB15 Empty
TB16 Empty
TB17 CH3+
TB18 CH4+
TB19 CH3TB20 CH4-TB18 CH4-Conversion adapter

Q64TCTTN terminal block

TB2 TB3 TB2 TB3
TB4 TB5
TB6 TB7
TB8 TB9
TB10 TB11
TB12 TB11
TB14 TB15
TB16 TB15
TB18 TB17

#### Notes

1. If the cold junction temperature compensation resistor (CJ) connected to the MELSEC-AnS series module terminal block (TB12, TB14) contacts a neighboring module, replace it with the cold junction temperature compensation resistor (CJ) provided with this product. If the cold junction temperature compensation resistor (CJ) does not contact a neighboring module, replacement with the cold junction temperature compensation resistor (CJ) provided with this product is not

### [Specification comparison chart]

		Model	MELSEC-	AnS series	MELSEC-Q series				
			A1S64TCTT-S1	A1S64TCTRT	Q64TCTTN				
Spe	cification		A15041C11-51	(Under standard control)	(Under standard control)				
Cont	trol output			Transistor output					
No.	of temperature input p	ooints		4 channels					
Appl	icable thermocouples			See Table 1 on the following page.					
		Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit	,					
1	Indication precision	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)				
		Ambient temperature: 0°C to 55°C	Full scale × (±	0.7%) ±1 digit	Full scale × (±0.7%)				
ac /		Measured temperature value:			, , ,				
Accuracy	Cold junction temperature	-100°C or higher		Within ±1.0°C					
ا Ac	compensation accuracy	Measured temperature value:							
. (	Ambient temperature:	-150°C to -100°C		Within ±2.0°C					
- 1	0°C to 55°C)	Measured temperature value:							
	,	-200°C to -150°C		Within ±3.0°C					
Sam	pling cycle		500ms / 4 cha	nnels (constant regardless of the number of u	sed channels)				
	trol output cycle			1 to 100s					
	act per 1Ω wiring resis	tance		See Table 1 on the following page					
	t impedance		1ΜΩ						
Input filter				0 to 100s (0: Input filter OFF)					
			Software version A: -5.00 to 5.00%	`					
Sensor correction value setting			Software version B or later: -50.00 to 50.00%	-50.00 to	50.00%				
Operation during sensor input disconnection		put disconnection		Upscale processing					
	perature control metho		PID ON/OFF pulse or 2-position control						
		PID constant setting	Configurable by auto-tuning	Configurable by auto-tuning					
		Proportional band (P)	<u> </u>	<u> </u>					
PID	constant range	Integral time (I)	1 to 3	0.0 to 1000.0% (0: 2-position control)	0 to 3600s (0: P control, PD control)				
		Derivative time (D)	0 to 3600s (	0 to 3600s (0: P control, PI control)					
Tara	et value setting range		,	temperature range set by the used temperati					
_	d zone setting range		-	0.1 to 10.0%					
	<u> </u>	Output signal		ON/OFF pulse					
		Rated load voltage	10.2 to	30VDC	10 to 30VDC				
		Maximum load current	1012 10	0.1A/point, 0.4A/common	10 10 00120				
Tran	sistor output	Maximum inrush current		0.4A 10ms					
	olotor output	Leakage current at OFF		0.1mA or less					
		Maximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1 A					
		Response time	(	OFF→ON: 2ms or less ON→OFF: 2ms or less	<u> </u>				
Isolation method		пеэропэе шпе	Between input and ground: Transformer insulation	Between input terminal and programmable co					
			Between input and channel: Transformer insulation	Between input channels					
	of accurated I/O points		· · · · · · · · · · · · · · · · · · ·	oints	16 points				
Vo.	No. of occupied I/O points		ο ο Σ. μ	το μοιπιο					
	nection method		20-noint to	rminal block	18-point terminal block				

Table 1 Applicable Thermocouples and Impact per  $1\Omega$  Wiring Resistance

Thermocouple	unla °C					°F				
type	Measured temperature range	Data	Impact	per 1Ω wiring re		Measured temperature range	Data	Impact	per 1Ω wiring re	sistance
	Weasured temperature range	resolution	A1S64TCTT-S1	A1S64TCTRT	Q64TCTTN	Weasured temperature range	resolution	A1S64TCTT-S1	A1S64TCTRT	Q64TCTTN
R	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)
	0 to 500					0 to 1000				
	0 to 800	1				0 to 2400	1			
	0 to 1300					0.10.2.100				
K	-200.0 to 400.0				0.005 (°C/Ω)					0.008 (°F/Ω)
	0.0 to 400.0	0.1				0.0 to 1000.0	0.1			
	0.0 to 500.0									
	0.0 to 800.0									
	0 to 500					0 to 1000				
	0 to 800	1				0 to 1600	1			
J	0 to 1200				0.003 (°C/Ω)	0 to 2100				0.006 (°F/Ω)
	0.0 to 400.0									,
	0.0 to 500.0	0.1				0.0 to 1000.0	0.1			
	0.0 to 800.0									
	-200 to 400	1			0.004 (°C/Ω)		1			
	-200 to 200		1			0 to 700				
Т	0 to 200	•				-300 to 400				0.008 (°F/Ω)
	0 to 400				0.001(0/12)					0.000 (1732)
	-200.0 to 400.0	0.1				0.0 to 700.0	0.1			
	0.0 to 400.0		0.35μV/Ω	0.15μV/Ω				0.35μV/Ω 0.15μV/Ω		
S	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)
_	MELSEC-AnS 400 to 1800					MELSEC-AnS 800 to 3000				
В	series module	1			0.038 (°C/Ω)	series module	1			0.068 (°F/Ω)
(*1)	MELSEC-Q 0 to 1800	•			,	MELSEC-Q 0 to 3000				
	series module					series module		-		
_	0 to 400	1				0 to 1800	1			0.005 (°F/Ω)
Е	0 to 1000				0.003 (°C/Ω)					,
	0.0 to 700.0	0.1			( (-)	_	-			-
N	0 to 1300	1			0.006 (°C/Ω)	0 to 2300	1			0.011 (°F/Ω)
	0 to 400	1				0 to 700	1			0.009 (°F/Ω)
U	-200 to 200				0.004 (°C/Ω)	-300 to 400		-		· , ,
	0.0 to 600.0	0.1				_				
	0 to 400	1				0 to 800	1			0.006 (°F/Ω)
L	0 to 900				0.003 (°C/Ω)	0 to 1600		-		` <i>'</i>
	0.0 to 400.0	0.1			( ,	_	_			_
DLII	0.0 to 900.0				0.005 (00 (5)	0.1.0000	_	-		0.040 (05/5)
PLII	0 to 1200	1			0.005 (°C/Ω)	0 to 2300	1			0.010 (°F/Ω)
W5Re /W26Re	0 to 2300	1			0.017 (°C/Ω)	0 to 3000	1			0.021 (°F/Ω)

<sup>\*1:</sup> The measured temperature range differs for the MELSEC-AnS series module and MELSEC-Q series module. With the MELSEC-Q series module, temperature measurement is possible with ranges less than 400°C / less than 800°F, but accuracy is not guaranteed.

## •Program precautions

With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

# 2) ERNT-ASQT64TCRT Terminal block (20P) $\rightarrow$ Terminal block (18P)

Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT64TCRT	A1S64TCRT-S1		Q64TCRTN
ENNI-ASQ1041CNI	A1S64TCTRT (standard control, platinum RTD)	4 channels	Q041Chin

A1S64TCRT-S1 A1S64TCTRT (standard control, platinum RTD) terminal block

TB2	TB1
TR4	TB3
	TB5
TB6	TB7
TB8	TB9
TB10	TB11
TB12	TB13
TB14	TB15
TB16	TB17
TB18	TB19
TB20	

Terminal number	Signal name		Terminal number	Signal name
TB1	L1		TB1	L1
TB2	L2		TB2	L2
TB3	L3		TB3	L3
TB4	L4		TB4	L4
TB5	COM-		TB5	COM-
TB6	A2		TB6	Empty
TB7	A1		TB7	CH1 A
TB8	B2		TB8	CH2 A
TB9	B1		TB9	CH1 B
TB10	b2		TB10	CH2 B
TB11	b1		TB11	CH1 b
TB12	Empty		TB12	CH2 b
TB13	Empty		TB13	CH3 A
TB14	Empty		TB14	CH4 A
TB15	A3	_	TB15	CH3 B
TB16	A4		TB16	CH4 B
TB17	B3		TB17	CH3 b
TB18	B4		TB18	CH4 b
TB19	b3			
TB20	b4			
		Conversion	n adapter	

Q64TCRTN terminal block

	TB1
TB2	
TB4	TB3
TB6	TB5
	TB7
TB8	
TB10	TB9
	TB11
TB12	TB13
TB14	
TB16	TB15
	TB17
TB18	

[Specification	on comparison chart]				
	Model	MELSEC-A	AnS series	MELSEC-Q series	
		A1S64TCRT-S1	A1S64TCTRT	Q64TCRTN	
Specification		A15041CR1-51	(Under standard control)	(Under standard control)	
Control outpu	t		Transistor output		
No. of temper	ature input points		4 channels		
Applicable pla	atinum RTDs		See Table 2		
Indication	Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit	-	-	
	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)	
precision	Ambient temperature: 0°C to 55°C	Full scale × (±		Full scale × (±0.7%)	
Sampling cycl	le	500ms / 4 ch	annels (constant regardless of the number of us	sed channels)	
Control outpu	t cycle		1 to 100s		
Sensor curren	nt	Approx. 0.25mA	Approx. 0.3mA	_	
Impact of allow	able input conductor resistance	20Ω or less	10Ω or less	_	
Input impedar	nce	-	-	1ΜΩ	
Input filter			0 to 100s (0: Input filter OFF)		
Concer correc	tion value cotting	Software version A: -5.00 to 5.00%	-0.00 to 50.00%	-50.00 to 50.00%	
Sensor correction value setting		Software version B or later: -50.00 to 50.00%	-0.00 to 50.00%	-50.00 to 50.00%	
Operation duri	ing sensor input disconnection				
Operation during sensor input short circuit		_	Downscale processing	_	
Temperature of	control method	PID ON/OFF pulse or 2-position control			
	PID constant setting	Configurable by auto-tuning	Configurable by auto-tuning and self-tuning	Configurable by auto-tuning	
PID constant	Proportional band (P)		0.0 to 1000.0% (0: 2-position control)		
range	Integral time (I)	1 to 3	3600s	0 to 3600s (0: P control, PD control)	
	Derivative time (D)	0 to 3600s (	D: PI control)	0 to 3600s (0: P control, PI control)	
Target value s	etting range	Within th	e temperature range set by the used temperature	re sensor	
Dead zone se	tting range	0.1 to 10.0%			
	Output signal		ON/OFF pulse		
	Rated load voltage	10.2 to	30VDC	10 to 30VDC	
Transistor	Maximum load current		0.1A/point, 0.4A/common		
output	Maximum inrush current		0.4A 10ms		
σαιραί	Leakage current at OFF		0.1mA or less		
	Maximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1A		
Response time			OFF→ON: 2ms or less ON→OFF: 2ms or less		
Isolation meth	and	Between input and ground: Transformer insulation	Between input terminal and programmable co	ontroller power supply: Transformer insulation	
isolation metr	100	Between input and channel: Transformer insulation	Between input channels	: Transformer insulation	
No. of occupie	ed I/O points	32 p	oints	16 points	
Connection m	nethod	20-point ter	minal block	18-point terminal block	
Internal curren	nt consumption (5VDC)	0.3	3A	0.29A	

## Table 2 Applicable Platinum RTDs

Table 2. Applicable Flatifican FTF25							
Distingues DTD type	°C		°F				
Platinum RTD type	Measured temperature range	Data resolution	Measured temperature range	Data resolution			
Pt100	-200.0 to 600.0	0.1	-300 to 1100	1			
	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1			
ID4400	-200.0 to 500.0	0.1	-300 to 900	1			
JPt100	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1			

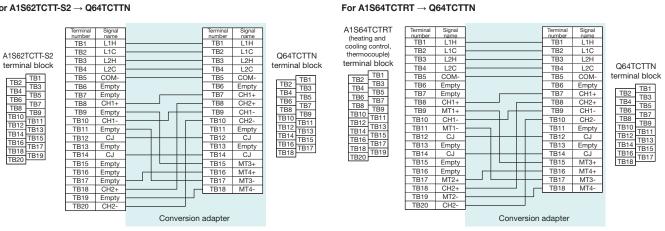
• Program precautions

With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

### 3) ERNT-ASQT62TCTT Terminal block (20P)→Terminal block (18P)

	Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model	
	EDNT ACOTOOTOTT	A1S62TCTT-S2	O abannala	Q64TCTTN	
ERNT-ASQT62TCTT	A1S64TCTRT (heating and cooling control, thermocouple)	2 channels	Q641CTIN		

### For A1S62TCTT-S2 $\rightarrow$ Q64TCTTN



#### Notes

1. If the cold junction temperature compensation resistor (CJ) connected to the MELSEC-AnS series module terminal block (TB12, TB14) contacts a neighboring module, replace it with the cold junction temperature compensation resistor (CJ) provided with this product. If the cold junction temperature compensation resistor (CJ) does contact a neighboring module, replacement with the cold junction temperature compensation resistor (CJ) provided with this product is not required.

### [Specification comparison chart]

		Model	MELSEC-	AnS series	MELSEC-Q series
			A1S62TCTT-S2	A1S64TCTRT	Q64TCTTN
Spe	cification		A15021C11-52	(Under heating and cooling control)	(Under heating and cooling control)
Cor	trol output			Transistor output	
No.	of temperature input	t points		2 channels	
Applicable thermocouples				See Table 3 on the following page	
		Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit		_
	Indication precision	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)
		Ambient temperature: 0°C to 55°C	Full scale × (±	0.7%) ±1 digit	Full scale × (±0.7%)
Accuracy	Cold junction temperature	Measured temperature value: e -100°C or higher		Within ±1.0°C	
Acc	compensation accuracy (Ambient temperature:	Measured temperature value: -150°C to -100°C		Within ±2.0°C	
	0°C to 55°C)	Measured temperature value: -200°C to -150°C		Within ±3.0°C	
San	npling cycle		500ms / 2 cha	nnels (constant regardless of the number of	used channels)
	ting control output c	vcle		,	,
	ling control output c	·		1 to 100s	
	act per 1Ω wiring res	•	See Table 3 on the following page.		
	ıt impedance		1ΜΩ		
	ıt filter		0 to 100s (0: Input filter OFF)		
Sen	Sensor correction value setting			-50.00 to 50.00%	
Operation during sensor input disconnection		input disconnection		Upscale processing	
Tem	perature control met	thod	PID ON/OFF pulse PID ON/OFF pulse or 2-position		
	PII	D constant setting		Configurable by auto-tuning	
	Pr	oportional band (P)	_	0.1 to 1000.0%	0.0 to 1000.0% (0: 2-position control)
חום	Не	eating proportional band (Ph)	0.11. 1000.007		
PID	constant range Co	poling proportional band (Pc)	0.1 to 1000.0%		_
	Int	egral time (I)	1 to 3	3600s	0 to 3600s (0: P control, PD control)
	De	erivative time (D)	0 to 3600s (	0: PI control)	0 to 3600s (0: P control, PI control)
Tarç	et value setting rang	je	Within the	temperature range set by the used temperat	ture sensor
Dea	d zone setting range	•	Air cooling /	Water cooling	Air cooling / Water cooling / Linear
	Ou	utput signal	-	ON/OFF pulse	
	Ra	ated load voltage	10.2 to	30VDC	10 to 30VDC
	Ma	aximum load current		0.1A/point, 0.4A/common	
Trar	sistor output Ma	aximum inrush current		0.4A 10ms	
	Le	akage current at OFF		0.1mA or less	
	Ma	aximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1A	
	Re	esponse time	C	DFF→ON: 2ms or less ON→OFF: 2ms or les	SS
		•	Between input and ground: Transformer insulation		ontroller power supply: Transformer insulation
Isol	ation method		Between input and channel: Transformer insulation		s: Transformer insulation
No. of occupied I/O points		nts	32 p	oints	16 points
No.	No. of occupied I/O points				
	nection method		20-point te	rminal block	18-point terminal block

Table 3 Applicable Thermocouples and Impact per  $1\Omega\mbox{ Wiring Resistance}$ 

			°C					°F																																												
Thermocouple	ple Data Impact per 10 wiring resistance				esistance	Data Impact per 10 wiring resistance				esistance																																										
type	Measured temperature range	resolution	A1S62TCTT-S2	A1S64TCTRTW	Q64TCTTN	Measured temperature range	resolution			Q64TCTTN																																										
R	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)																																										
	0 to 500	<u>.</u>			( 0,11)					(1,12)																																										
	0 to 800	1				0 to 1000	1																																													
	0 to 1300					0 to 2400																																														
K	-200.0 to 400.0				0.005 (°C/Ω)					0.008 (°F/Ω)																																										
	0.0 to 400.0	0.4			, ,		0.4			, ,																																										
	0.0 to 500.0	0.1				0.0 to 1000.0	0.1																																													
	0.0 to 800.0																																																			
	0 to 500					0 to 1000																																														
	0 to 800	1				0 to 1600	1																																													
J	0 to 1200				0.003 (°C/Ω)	0 to 2100				0.006 (°F/Ω)																																										
o o	0.0 to 400.0				0.003 ( C/52)					0.006 ( F/\$2)																																										
	0.0 to 500.0	0.1				0.0 to 1000.0	0.1																																													
	0.0 to 800.0																																																			
	-200 to 400																																																			
	-200 to 200	1			0.004 (°C/Ω)	0 to 700	1	0.1																																												
Т	0 to 200					-300 to 400				0.008 (°F/Ω)																																										
	0 to 400			0.15μV/Ω						0.000 (1732)																																										
	-200.0 to 400.0	0.1				0.0 to 700.0	0.1																																													
	0.0 to 400.0		0.35μV/Ω		0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω	0.15μV/Ω				0.35μV/Ω	0.15μV/Ω
S	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)																																										
_	MELSEC-AnS 400 to 1800					MELSEC-AnS 800 to 3000																																														
В	series module	1															0.038 (°C/Ω)	0.038 (°C/Ω)	series module	1			0.068 (°F/Ω)																													
(*1)	MELSEC-Q 0 to 1800															, í					MELSEC-Q 0 to 3000				, ,																											
	series module					series module																																														
-	0 to 400	1			0.000 (00.10)	0 to 1800	1			0.005 (°F/Ω)																																										
Е	0 to 1000	0.4			0.003 (°C/Ω)	_																																														
N	0.0 to 700.0	0.1			0.000 (90 (0)	0 to 2300	-			- 0.011 (°F/Ω)																																										
IN	0 to 1300 0 to 400				0.006 (°C/Ω)	0 to 2300 0 to 700	1			0.011 (17/52)																																										
U	-200 to 200	1			0.004 (°C/Ω)	-300 to 400	1			0.009 (°F/Ω)																																										
O	0.0 to 600.0	0.1			0.004 ( 0/32)	-300 to 400	_																																													
	0 to 400	0.1				0 to 800	_			_																																										
	0 to 900	1				0 to 1600	1			0.006 (°F/Ω)																																										
L	0.0 to 400.0				0.003 (°C/Ω)	0 10 1000																																														
	0.0 to 900.0	0.1				-	-			-																																										
PLII	0 to 1200	1			0.005 (°C/Ω)	0 to 2300	1			0.010 (°F/Ω)																																										
W5Re																																																				
/W26Re	0 to 2300	1			0.017 (°C/Ω)	0 to 3000	1			0.021 (°F/Ω)																																										
	urad tamparatura ranga diffara fe		050 4-0	mandula and MCI	CEC O series a	It I - MEH- H MELOEO O																																														

<sup>\*1:</sup> The measured temperature range differs for the MELSEC-AnS series module and MELSEC-Q series module. With the MELSEC-Q series module, temperature measurement is possible with ranges less than 400°C / less than 800°F, but accuracy is not guaranteed.

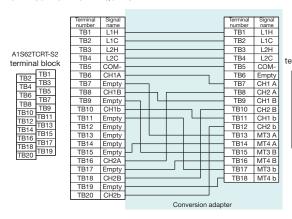
•Program precautions
With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

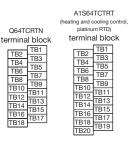
## 4) ERNT-ASQT62TCRT Terminal block (20P)→Terminal block (18P)

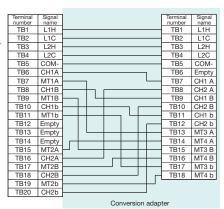
Conversion adapter model	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model	
ERNT-ASQT62TCRT	A1S62TCRT-S2	2 channels	Q64TCRTN	
ERNI-ASQ1621CR1	A1S64TCTRT (heating and cooling control, platinum RTD)	2 Charmers		

### For A1S62TCRT-S2 $\rightarrow$ Q64TCRTN

## For A1S64TCTRT $\rightarrow$ Q64TCRTN







Q64TCRTN terminal block 

[Specification	on comparison chart]						
	Model	MELSEC-A	AnS series	MELSEC-Q series			
		A1S62TCRT-S2	A1S64TCTRT	Q64TCRTN			
Specification		A15021CR1-52	(Under heating and cooling control)	(Under heating and cooling control)			
Control output			Transistor output				
No. of temper	ature input points		2 channels				
Applicable pla	tinum RTDs		See Table 4				
Indication	Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit	-	_			
	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)			
precision	Ambient temperature: 0°C to 55°C	Full scale × (±	0.7%) ±1 digit	Full scale × (±0.7%)			
Sampling cycl	е	500ms / 2 ch	annels (constant regardless of the number of us	sed channels)			
leating contro	ol output cycle		1 to 100s				
Cooling contro	ol output cycle		I to IUUs				
Sensor curren	t	Approx. 0.25mA	Approx. 0.3mA	-			
mpact of allow	able input conductor resistance	20Ω or less	10Ω or less	_			
nput impedar	ce	-	-	1ΜΩ			
nput filter			0 to 100s (0: Input filter OFF)				
Sensor correc	tion value setting	-50.00 to 50.00%					
Operation during	ng sensor input disconnection	Upscale processing					
Operation duri	ng sensor input short circuit	-	Downscale processing	_			
Temperature control method		PID ON/O	OFF pulse	PID ON/OFF pulse or 2-position control			
	PID constant setting	Configurable by auto-tuning					
	Proportional band (P)	_	0.1 to 1000.0%	0.0 to 1000.0% (0: 2-position control)			
PID constant	Heating proportional band (Ph)	0.1 to 1000.0%					
ange	Cooling proportional band (Pc)	0.1 to 1000.0%	-	_			
	Integral time (I)	1 to 3	3600s	0 to 3600s (0: P control, PD control)			
	Derivative time (D)	0 to 3600s (0	0 to 3600s (0: PI control)				
arget value s	etting range	Within the temperature range set by the used temperature sensor					
Cooling metho	od setting	Air cooling / \	Air cooling / Water cooling				
	Output signal		ON/OFF pulse				
	Rated load voltage	10.2 to	30VDC	10 to 30VDC			
ransistor	Maximum load current		0.1A/point, 0.4A/common				
output	Maximum inrush current		0.4A 10ms				
output	Leakage current at OFF		0.1mA or less				
	Maximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1 A				
Response time		OFF→ON: 2ms or less ON→OFF: 2ms or less					
solation meth	od	Between input and ground: Transformer insulation	Between input terminal and programmable co	,			
SOIALIOIT ITIELLI	ou	Between input and channel: Transformer insulation	Between input channels	: Transformer insulation			
No. of occupie	ed I/O points	32 p	oints	16 points			
Connection m	ethod	20-point ter	minal block	18-point terminal block			
nternal currer	t consumption (5VDC)	0.19A	0.33A	0.29A			

### Table 4 Applicable Platinum RTDs

Platinum RTD type	℃		°F				
riatilium nib type	Measured temperature range	Data resolution	Measured temperature range	Data resolution			
Pt100	-200.0 to 600.0	0.1	-300 to 1100	1			
P1100	-200.0 to 200.0		-300.0 to 300.0	0.1			
ID#100	-200.0 to 500.0	0.1	-300 to 900	1			
JPt100	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1			

With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

# For Temperature Control Modules with Disconnection Detection Function

## 1-slot type + Disconnection detection connector conversion cable

# 1) ERNT-ASQT64TCTTBW Terminal block (20P) + Connector (8P) $\rightarrow$ Terminal block (18P) × 2

TB18 CH4-

Conve

Set model	Conversion adapter model	Disconnection detection connector conversion cable	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model	
ERNT-ASQT64TCTTBW	ERNT-ASQT64TCTT	Yes	A1S64TCTTBW-S1	4 abannala	OCATOTTDWAL	
ERNI-ASQ1641C11BW	ERNI-ASQ1641C11	les	A1S64TCTRTBW (standard control, thermocouple)	4 channels	Q64TCTTBWN	

## Conversion adapter (ERNT-ASQT64TCTT)

TB20 CH4-

#### A1S64TCTTBW-S1 A1S64TCTRTBW L2 L3 L4 COM-TR2 TR2 (standard control. TB3 TB4 TB3 TB4 thermocouple) TB5 TB6 TB7 TB8 COMterminal block TB5 COM-Empty CH1+ CH2+ CH1-CH2-TB2 TB1 TB4 TB3 TB6 TB5 TB8 TB9 TB10 TB11 TB12 TB13 Empty Empty CH2+ TB8 TB9 TB10 TB11 TB12 TB9 TB10 TB11 TB12 CH1+ TB9 TB11 TB13 CH1-Empty IB12 CJ TB13 Empty TB14 CJ TB15 Empty TB16 Empty TB17 CH3+ TB18 CH4+ TB19 CH3-TB12 CJ TB13 Empty TB14 CJ TB15 CH3+ TB16 CH4+ TB17 CH3-TB14

Disconnection detection connector conversion cable A1S64TCTTBW-S1

(standard control, Q64TCTTBWN thermocouple) (right slot side) terminal block TB3 TB4 TB4 TB5
TB6 TB7
TB8 TB9
TB10
TB11 TB12 TB13 TB14 TB15

A1S64TCTRTBW

disconnection detection connector Termina number TB1 TB2 TB3 TB4 TB5 TB6 TB7 1 2 3 4 5 6 7 8 BW1 BW2 BW2 BW3 BW3 TB8 TB9 TB10 TB11 TB12 TB13 TB14

terminal block TB2 TB3
TB4 TB5
TB6 TB7
TB10 TB10
TB12 TB13
TB14 TB15
TB16 TB15

TB18

Q64TCTTBWN

(left slot side)

	Model	MELSEC-	AnS series	MELSEC-Q series	
		A1S64TCTTBW-S1	A1S64TCTRTBW	Q64TCTTBWN	
Specification		A15041C11BW-51	(Under standard control)	(Under standard control)	
Control output		Transistor output			
No. of temperature input points		4 channels			
Applicable thermocouples		See Table 5 on the following page.			
Indication precision  Cold junction temperature compensation accuracy (Ambient temperature: 0°C to 55°C)	Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit	<del>_</del>		
	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)	
	Ambient temperature: 0°C to 55°C	Full scale $\times$ (±0.7%) ±1 digit Full scale $\times$ (±0		Full scale × (±0.7%)	
	Measured temperature value:	Within +1.0°C			
	100 0 01 111g1101	Within ±2.0°C			
	Measured temperature value:				
	-150°C to -100°C				
	Measured temperature value: -200°C to -150°C	Within ±3.0°C			
Sampling cycle		500ms / 4 channels (constant regardless of the number of used channels)			
Control output cycle		1 to 100s			
Impact per $1\Omega$ wiring resistance		See Table 5 on the following page			
Input impedance		1ΜΩ			
Input filter		0 to 100s (0: Input filter OFF)			
Sensor correction value setting		Software version A: -5.00 to 5.00% Software version B or later: -50.00 to 50.00%	-50.00 to	0.00 to 50.00%	
Operation during sensor input disconnection		Upscale processing			
Temperature control method		PID ON/OFF pulse or 2-position control			
PID constant range	PID constant setting	Configurable by auto-tuning	Configurable by auto-tuning and self-tuning	Configurable by auto-tuning	
	Proportional band (P)	0.0 to 1000.0% (0: 2-position control)			
	Integral time (I)	1 to 3600s 0: P control, PD control			
	Derivative time (D)	0 to 3600s (	0 to 3600s (0: Pl control) 0 to 3600s (0: P control, Pl contr		
Target value setting range		Within the temperature range set by the used temperature sensor			
Dead zone setting range		0.1 to 10.0%			
Transistor output	Output signal	ON/OFF pulse			
	Rated load voltage	10.2 to 30VDC 10 to 30VDC			
	Maximum load current	0.1A/point, 0.4A/common			
	Maximum inrush current	0.4A 10ms			
	Leakage current at OFF	0.1mA or less			
	Maximum voltage drop at ON	1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1 A			
	Response time	OFF→ON: 2ms or less ON→OFF: 2ms or less			
Isolation method		Between input and ground: Transformer insulation Between input terminal and programmable controller power supply: Transformer insulation			
		Between input and channel: Transformer insulation	Between input channels:	Transformer insulation	
Heater disconnection detection specifications	Current sensor			U.R.D., Ltd	
		U.R.D., Ltd		CTL-12-S36-8 (0.0 to 100.0A)	
		CTL-12-S36-8 (0.0 to 100.0A)		CTL-12-S36-10 (0.0 to 100.0A)	
		CTL-6-P(-H) (0.00 to 20.00A)		CTL-12-S56-10 (0.0 to 100.0A)	
				CTL-6-P(-H) (0.00 to 20.00A)	
	Input method		d: A/D conversion	-	
	Input accuracy	-	Full-scale >	(±1.U%)	
No. of warning delays		3 to 255			
No. of occupied I/O points		32 points			
Connection method		· · · · · · · · · · · · · · · · · · ·	ck + 8-pin connector	18-point terminal block × 2	
Internal current consumption (5VDC)		0.42A	0.39A	0.33A	

<sup>1.</sup> Be sure to install the disconnection detection connector conversion cable on the left side and the conversion adapter on the right side of the MELSEC-Q series module. Use of the module with the cable and adapter installed in the reverse causes MELSEC-Q series module damage.

Table 5 Applicable Thermocouples and Impact per  $1\Omega$  Wiring Resistance

Thermocouple			°C					°F				
type	Measured temperature range	Data	Impact	per $1\Omega$ wiring re	esistance	Measured temperature range	Data	Impact	per $1\Omega$ wiring re	esistance		
-5/2-5	Measured temperature range	resolution	A1S64TCTTBW-S1	A1S64TCTRTBW	Q64TCTTBWN	Measured temperature range	resolution	A1S64TCTTBW-S1	A1S64TCTRTBW	Q64TCTTBWN		
R	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)		
	0 to 500					0 to 1000						
	0 to 800	1				0 to 2400	1					
	0 to 1300					0 10 2400						
K	-200.0 to 400.0				0.005 (°C/Ω)					0.008 (°F/Ω)		
	0.0 to 400.0	0.1				0.0 to 1000.0	0.1					
	0.0 to 500.0	0.1				0.0 to 1000.0	0.1					
	0.0 to 800.0											
	0 to 500					0 to 1000						
	0 to 800	1				0 to 1600	1					
J	0 to 1200				0.003 (°C/Ω)	0 to 2100				0.006 (°F/Ω)		
Ü	0.0 to 400.0				0.000 ( 0/32)					0.000 (1732)		
	0.0 to 500.0	0.1				0.0 to 1000.0	0.1					
	0.0 to 800.0											
	-200 to 400											
	-200 to 200	1				0 to 700	1					
Т	0 to 200				0.004 (°C/Ω)	-300 to 400	'			0.008 (°F/Ω)		
	0 to 400				0.004 ( 0/32)					0.008 (*Ε/Ω)		
	-200.0 to 400.0	0.1				0.0 to 700.0	0.1					
	0.0 to 400.0	0.1	0.35μV/Ω	0.15μV/Ω		0.0 to 700.0	0.1	0.35μV/Ω	0.15μV/Ω			
S	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)		
	MELSEC-AnS 400 to 1800					MELSEC-AnS 800 to 3000						
В	series module	4	1	1			0.038 (°C/Ω)	series module	1			0.068 (°F/Ω)
(*1)	MELSEC-Q 0 to 1800	'			0.038 ( 0/32)	MELSEC-Q 0 to 3000	'			0.000 (1/52)		
	series module					series module						
	0 to 400	1				0 to 1800	1			0.005 (°F/Ω)		
Е	0 to 1000				0.003 (°C/Ω)	0 10 1000	<u>'</u>			0.000 (1732)		
	0.0 to 700.0	0.1				_	_			_		
N	0 to 1300	1			0.006 (°C/Ω)	0 to 2300	1			0.011 (°F/Ω)		
	0 to 400	1				0 to 700	1			0.009 (°F/Ω)		
U	-200 to 200				0.004 (°C/Ω)	-300 to 400				0.000 (1732)		
	0.0 to 600.0	0.1				_				_		
	0 to 400	1				0 to 800	1			0.006 (°F/Ω)		
L	0 to 900				0.003 (°C/Ω)	0 to 1600	<u>'</u>			0.000 (1732)		
_	0.0 to 400.0	0.1			0.000 ( 0/32)	_	_			_		
	0.0 to 900.0											
PLII	0 to 1200	1			0.005 (°C/Ω)	0 to 2300	1	1		0.010 (°F/Ω)		
W5Re /W26Re	0 to 2300	1			0.017 (°C/Ω)	0 to 3000	1			0.021 (°F/Ω)		

<sup>\*1:</sup> The measured temperature range differs for the MELSEC-AnS series module and MELSEC-Q series module. With the MELSEC-Q series module, temperature measurement is possible with ranges less than 400°C / less than 800°F, but accuracy is not guaranteed.

•Program precautions
With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

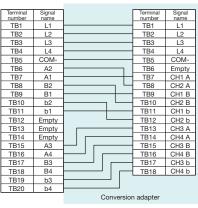
# 2) ERNT-ASQT64TCRTBW Terminal block (20P) + Connector (8P) - Terminal block (18P) × 2

Set model	Conversion adapter model	Disconnection detection connector conversion cable	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model	
ERNT-ASQT64TCRTBW	ERNT-ASQT64TCRT	Yes	A1S64TCTTBW-S1	4 abannala	Q64TCRTBWN	
ERNI-ASQ1041CR1BW	ERNI-ASQ1641CR1	les	A1S64TCTRTBW (standard control, platinum RTD)	4 channels	Q041CRIBWN	

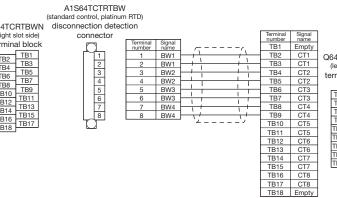
A1S64TCRTBW-S1

# Conversion adapte (ERNT-ASQT64TCRT)

# Disconnection detection connector conversion cable



CH3 b CH4 b	TR16 TB15	CH1 b IB12 TB13	CH2 B TB10 TB11	CH2 A TB8 TB7	CHIA TB5	Empty TB2 TB3	COM- TR1			L1	Signal name
UN4 D	CH4 A TB18 IB17	CH2 B TB15  CH3 A TB16  TB17	CH1 b TB12 TB13 TB14 TB15 CH3 A TB16 TB17	CH2 B TB10 TB11 TB13 TB14 TB15 TB15 TB15 TB17	CH1 B TB8 TB9 CH2 B TB10 TB11 CH1 b TB12 TB11 CH2 b TB15 CH3 A TB16 TB7 TB8 TB9 TB11 TB15 TB15 TB16 TB17	CH1 A TB6 TB7 CH2 B TB10 TB11 CH1 b TB12 CH2 B TB14 CH2 B TB14 CH2 CH3 A TB16 TB17	Empty TB2 TB3 CH1 A TB4 TB5 CH2 A TB6 TB7 CH2 B TB10 CH2 B TB10 CH2 B TB10 CH2 B TB10 CH2 B TB12 CH2 B TB14 TB13 CH2 CH2 B TB14 TB15 CH3 A TB16 TB17 TB17 TB17 TB17 TB17 TB17 TB17 TB17	COM- Empty CH1 A CH2 A CH2 A CH2 B CH2 B CH2 B CH2 B TB8 TB8 TB8 TB9 TB10 TB11 TB11 TB12 TB13 TB13 TB13 TB14 TB7 TB8 TB7 TB10 TB11 TB11 TB13 TB13 TB13 TB14 TB13 TB15 TB11 TB11 TB13 TB13 TB13 TB14 TB15 TB17 TB17 TB18 TB17 TB18 TB18 TB18 TB18 TB18 TB18 TB19 TB19 TB19 TB19 TB19 TB19 TB19 TB19	COM- Empty CH1 A CH2 A CH2 A CH2 B CH3 B CH4 B CH4 B CH4 B CH4 B CH2 B CH2 B CH3 A TB4 TB5 TB7 TB8 TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1	L3 (right slot side) terminal block COM- Empty CH1 A TB4 TB3 CH2 A TB6 TB7 CH1 B TB10 TB10 CH2 B TB10 TB11 CH2 b TB14 TB13 CH2 b TB14 TB13 CH2 b TB14 TB15 CH2 b TB16 TB17 TB17 TB17 TB17 TB17 TB17 TB17 TB17	L2 G64TCRTBWM (right slot side) L4 terminal block t
CH3 B		TR16 TB15	CH1 b TB12 TB13 TB15 TB15	CH2 B TB10 TB11 TB12 TB13 CH2 b TB14 TB15	CH2 A TB8 TB9 CH2 B TB10 TB11 CH1 b TB12 TB13 CH2 b TB14 TB15	CH2 A TB6 TB7 CH2 B TB10 TB11 CH1 b TB12 TB13 CH2 b TB14 TB15	Empty TB2 TB3 CH1 A TB6 TB5 CH2 A TB6 TB7 CH1 B TB8 TB9 CH2 B TB10 CH1 b TB12 CH2 b TB14 TB15	COM- Empty CH1 A CH2 A CH2 A CH1 B CH2 B CH2 B CH2 B CH2 B CH2 B CH2 B CH2 B CH3 B TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB1 TB	L4   COM-   First   TB1   TB	L3 (right slot side) terminal block COM- Empty CH1 A TB2 TB1 CH2 A TB6 TB5 CH2 B TB1 TB9 CH2 B TB10 TB11 TB12 TB11 TB12 TB11 TB12 TB11 TB12 TB13 CH2 B TB15 TB16 TB17 TB16 TB17 TB16 TB17 TB17 TB17 TB17 TB17 TB17 TB17 TB17	L2 Q64TCRTBWN (right slot side) terminal block term



Q64TCRTBWN (left slot side) terminal block

#### TB2 TB4 TB4 TB6 TB8 TB10 TB10 TB12 TB14 TB16 TB18 TB15 TB17

#### Notes

1. Be sure to install the disconnection detection connector conversion cable on the left side and the conversion adapter on the right side of the MELSEC-Q series module. Use of the module with the cable and adapter installed in the reverse causes MELSEC-Q series module damage.

#### [Specification comparison chart]

	Model	MELSEC-	AnS series	MELSEC-Q series
			A1S64TCTRTBW	Q64TCRTBWN
Specification		A1S64TCRTBW-S1	(Under standard control)	(Under standard control)
Control output			Transistor output	
No. of tempera	ature input points		4 channels	
Applicable pla	tinum RTDs		See Table 6 on the following page.	
l	Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit	-	_
Indication	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)
orecision	Ambient temperature: 0°C to 55°C	Full scale × (±	0.7%) ±1 digit	Full scale × (±0.7%)
Sampling cycle	9	500ms / 4 ch	annels (constant regardless of the number of us	sed channels)
Control output	cycle		1 to 100s	·
Sensor current	t	Approx. 0.25mA	Approx. 0.3mA	_
Impact of allowa	able input conductor resistance	20Ω or less	10Ω or less	_
Input impedan	ce	-	_	1ΜΩ
Input filter			0 to 100s (0: Input filter OFF)	
Sensor correct	tion value setting	Software version A: -5.00 to 5.00% Software version B or later: -50.00 to 50.00%	-50.00 to	50.00%
Operation durin	ng sensor input disconnection	Software version b or later50.00 to 50.00%	Upscale processing	
	ng sensor input alsconnection	_	Downscale processing	_
•	· .	_	PID ON/OFF pulse or 2-position control	_
remperature c	PID constant setting	Configurable by auto-tuning	Configurable by auto-tuning and self-tuning	Configurable by auto-tuning
	Proportional band (P)	Cornigurable by auto-turning	0.0 to 1000.0% (0: 2-position control)	Oornigurable by auto-turning
PII) constant $\vdash$	Integral time (I)	1 to 3	3600s	0 to 3600s (0: P control, PD control)
range	Derivative time (D)		0: PI control)	0 to 3600s (0: P control, PI control)
Target value se		,	e temperature range set by the used temperature	
		VVICINITO	0.1 to 10.0%	6 361301
Dead Zone Set	Output signal		ON/OFF pulse	
	Rated load voltage	10.2 to	30VDC	10 to 30VDC
	Maximum load current	10.2 to	10 10 30 4 20	
Transistor	Maximum inrush current		0.1A/point, 0.4A/common 0.4A 10ms	
output	Leakage current at OFF		0.1mA or less	
	Maximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1 A	
Temperature co PID constant range Target value set Dead zone settii Transistor output	Response time		OFF→ON: 2ms or less ON→OFF: 2ms or less	
		Between input and ground: Transformer insulation	Between input terminal and programmable co	ontroller power supply: Transformer insulation
Isolation methor	od	Between input and channel: Transformer insulation		s: Transformer insulation
				U.R.D., Ltd.
		U.R.D	) Ltd.	CTL-12-S36-8 (0.0 to 100.0A)
Heater	Current sensor	CTL-12-S36-8	(0.0 to 100.0A)	CTL-12-S36-10 (0.0 to 100.0A)
disconnection			0.00 to 20.00A)	CTL-12-S56-10 (0.0 to 100.0A)
detection		, , ,	,	CTL-6-P(-H) (0.00 to 20.00A)
specifications	Input method	Multiplexer metho	od: A/D conversion	_
	Input accuracy	-	Full scale	× (±1.0%)
	No. of warning delays		3 to 255	
No. of occupie	<u> </u>		32 points	
Connection me	ethod	20-point terminal blo	ock + 8-pin connector	18-point terminal block × 2
Internal curren	t consumption (5VDC)	0.42A	0.39A	0.33A

Table 6 Applicable Platinum RTDs

Platinum RTD type	°C		°F	
rialinum nib type	Measured temperature range	Data resolution	Measured temperature range	Data resolution
D1400	-200.0 to 600.0	0.4	-300 to 1100	1
Pt100	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1
IDIAGO	-200.0 to 500.0	0.4	-300 to 900	1
JPt100	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1

#### Program precautions

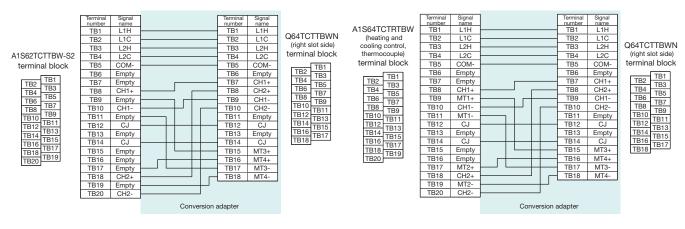
With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

# 3) ERNT-ASQT62TCTTBW Terminal block (20P) + Connector (8P)→Terminal block (18P) × 2

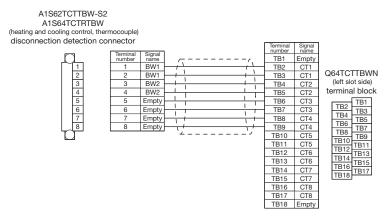
Set model	Conversion adapter model	Disconnection detection connector conversion cable	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT62TCTTBW	ERNT-ASQT62TCTT	Yes	A1S62TCTTBW-S2	O abannala	Q64TCTTBWN
ERNI-ASQ1621C11BW	ERNI-ASQ1621C11	165	A1S64TCTRTBW (heating and cooling control, thermocouple)	2 channels	Q041CTTBWN

# Conversion adapter (ERNT-ASQT62TCTT) With A1S62TCTTBW-S2→Q64TCTTBWN

# With A1S64TCTRTBW→Q64TCTTBWN



# Disconnection detection connector conversion cable



## Notes

1. Be sure to install the disconnection detection connector conversion cable on the left side and the conversion adapter on the right side of the MELSEC-Q series module.

Use of the module with the cable and adapter installed in the reverse causes MELSEC-Q series module damage.

# [Specification comparison chart]

		Model	MELSEC	AnS series	MELSEC-Q series		
			A1CCOTCTTDW CO	A1S64TCTRTBW	Q64TCTTBWN		
Specification	on		A1S62TCTTBW-S2	(Under heating and cooling control)	(Under heating and cooling control)		
Control out	tput			Transistor output			
No. of temp	perature input	points		2 channels			
Applicable t	thermocouple	es		See Table 7 on the following page.			
		Ambient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit		_		
Indicati	ion precision	Ambient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)		
		Ambient temperature: 0°C to 55°C	Full scale × (±	0.7%) ±1 digit	Full scale × (±0.7%)		
acy		Measured temperature value:		Within 11 000			
Cold jund compens	ction temperature	-100°C or higher		Within ±1.0°C			
S compens	sation accuracy	Measured temperature value:		Within ±2.0°C			
(Ambient	nt temperature:	-150°C to -100°C		WINIT ±2.0 C			
0°C to 55	5°C)	Measured temperature value:		Within 12.000			
		-200°C to -150°C		Within ±3.0°C			
Sampling c	cycle		500ms / 2 cha	nnels (constant regardless of the number of	used channels)		
Heating cor	ntrol output cy	ycle		1 to 1000			
Cooling cor	ntrol output cy	ycle		1 to 100s			
Impact per	1Ω wiring res	istance		See Table 7 on the following page.			
Input imped	dance			1ΜΩ			
Input filter				0 to 100s (0: Input filter OFF)			
Sensor corr	rection value s	setting		-50.00 to 50.00%			
Operation of	during sensor	input disconnection		Upscale processing			
Temperatur	re control met	hod	PID ON/0	OFF pulse	PID ON/OFF pulse or 2-position control		
	PI	O constant setting		Configurable by auto-tuning			
	Pro	oportional band (P)	_	0.1 to 1000.0%	0.0 to 1000.0% (0: 2-position control)		
DID consta	He	ating proportional band (Ph)	0.1 to 1000 00/				
PID constar	Co	oling proportional band (Pc)	0.1 to 1000.0%	_			
	Int	egral time (I)	1 to 3	3600s	0 to 3600s (0: P control, PD control)		
	De	rivative time (D)	0 to 3600s (	0 to 3600s (0: P control, PI control)			
Target value	e setting range	e	Within the	temperature range set by the used temperat	ture sensor		
Cooling me	ethod setting		Air cooling /	Water cooling	Air cooling / Water cooling / Linear		
	Ou	tput signal	ON/OFF pulse				
	Ra	ted load voltage	10.2 to	10 to 30VDC			
	Ma	aximum load current		0.1A/point, 0.4A/common			
Transistor o	output Ma	aximum inrush current		0.4A 10ms			
	Lea	akage current at OFF		0.1mA or less			
	Ma	aximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1 A			
	Re	sponse time	C	DFF→ON: 2ms or less ON→OFF: 2ms or les	SS		
Isolation me	othod		Between input and ground: Transformer insulation	Between input terminal and programmable c	ontroller power supply: Transformer insulation		
130Iation III	ieti iod		Between input and channel: Transformer insulation	Between input channels	s: Transformer insulation		
					U.R.D., Ltd.		
			U.R.D	)., Ltd.	CTL-12-S36-8 (0.0 to 100.0A)		
Heater	Cu	rrent sensor	CTL-12-S36-8	(0.0 to 100.0A)	CTL-12-S36-10 (0.0 to 100.0A)		
disconnecti	tion		CTL-6-P(-H) (0	0.00 to 20.00A)	CTL-12-S56-10 (0.0 to 100.0A)		
detection					CTL-6-P(-H) (0.00 to 20.00A)		
specificatio	ons Inp	out method	Multiplexer metho	pd: A/D conversion	_		
	Inp	out accuracy	_	Full-scale	× (±1.0%)		
	No	o. of warning delays		3 to 255			
No. of occu	upied I/O poin	ts		32 points			
Connection	n method		20-point terminal blo	ock + 8-pin connector	18-point terminal block × 2		
Internal cur	rrent consump	otion (5VDC)	0.28A	0.39A	0.33A		

Table 7 Applicable Thermocouples and Impact per  $1\Omega$  Wiring Resistance

			°C					°F		
Thermocouple	Measured temperature range	Data	Impact	per 1Ω wiring re	esistance	Measured temperature range	Data	Impact	per 1Ω wiring re	esistance
type	ivieasured temperature range	resolution	A1S62TCTTBW-S2	A1S64TCTRTBW	Q64TCTTBWN	ivieasured temperature range	resolution	A1S62TCTTBW-S2	A1S64TCTRTBW	Q64TCTTBWN
R	0 to 1700	1			0.030 (°C/Ω)	0 to 3000	1			0.054 (°F/Ω)
	0 to 500					0 to 1000				
	0 to 800	1				0 to 2400	1			
	0 to 1300					0 10 2400				
K	-200.0 to 400.0				0.005 (°C/Ω)					0.008 (°F/Ω)
	0.0 to 400.0	0.1				0.0 to 1000.0	0.1			
	0.0 to 500.0									
	0.0 to 800.0									
	0 to 500					0 to 1000				
	0 to 800	1				0 to 1600	1			
J	0 to 1200				0.003 (°C/Ω)	0 to 2100				0.006 (°F/Ω)
	0.0 to 400.0				,					,
	0.0 to 500.0	0.1				0.0 to 1000.0	0.1			
	0.0 to 800.0									
	-200 to 400					0.1.700				
	-200 to 200	1				0 to 700	1			
T	0 to 200				0.004 (°C/Ω)	-300 to 400				0.008 (°F/Ω)
	0 to 400								0.45.1//0	
	-200.0 to 400.0	0.1	0.05.440	0.15.4//0		0.0 to 700.0	0.1	0.05.4//0		
S	0.0 to 400.0 0 to 1700	1	0.35μV/Ω	0.15μV/Ω	0.030 (°C/Ω)	0 to 3000	1	0.35μV/Ω	0.15μV/Ω	0.054 (°F/Ω)
	MELSEC-AnS	ı ı			0.030 ( 0/52)	MELSEC-AnS				0.054 ( F/\$2)
В	series module 400 to 1800					series module 800 to 3000				
(*1)	MELSEC-Q	1			0.038 (°C/Ω)	MELSEC-Q	1			0.068 (°F/Ω)
( 1)	series module 0 to 1800					series moduled 0 to 3000				
	0 to 400							-		
Е	0 to 1000	1			0.003 (°C/Ω)	0 to 1800	1			0.005 (°F/Ω)
	0.0 to 700.0	0.1			0.000 ( 0/32)	_	_			_
N	0 to 1300	1			0.006 (°C/Ω)	0 to 2300	1			0.011 (°F/Ω)
	0 to 400				, ,	0 to 700				, ,
U	-200 to 200	1			0.004 (°C/Ω)	-300 to 400	1			0.009 (°F/Ω)
	0.0 to 600.0	0.1			, ,	_	_			_
	0 to 400	1				0 to 800	1	1		0.006 (°F/Ω)
L	0 to 900	'			0.003 (°C/Ω)	0 to 1600	1			0.006 (17/52)
_	0.0 to 400.0	0.1			0.003 (*C/\$2)					
	0.0 to 900.0	0.1				_				
PLII	0 to 1200	1			0.005 (°C/Ω)	0 to 2300	1	]		0.010 (°F/Ω)
W5Re	0 to 2300	1			0.017 (°C/Ω)	0 to 3000	1			0.021 (°F/Ω)
/W26Re	0 10 2000				0.017 ( 0/52)	0 10 0000				0.021 (1/52)

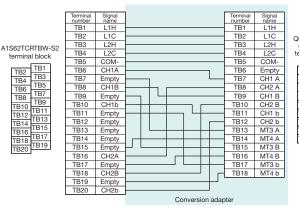
<sup>\*1:</sup> The measured temperature range differs for the MELSEC-AnS series module and MELSEC-Q series module. With the MELSEC-Q series module, temperature measurement is possible with ranges less than 400°C / less than 800°F, but accuracy is not guaranteed.

•Program precautions
With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

# 4) ERNT-ASQT62TCRTBW Terminal block (20P) + Connector (8P)→Terminal block (18P) × 2

Set model	Conversion adapter model	Disconnection detection connector conversion cable	MELSEC-AnS series module model	No. of channels	MELSEC-Q series module model
ERNT-ASQT62TCRTBW	ERNT-ASQT62TCRT	Yes	A1S62TCRTBW-S2	2 channels	Q64TCRTBWN
			A1S64TCTRTBW (heating and cooling control, platinum RTD)		

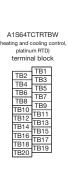
# Conversion adapter (ERNT-ASQT62TCRT) With A1S62TCRTBW-S2→Q64TCRTBWN

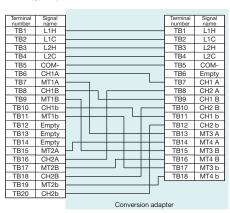


Q64TCRTBWN (right slot side) terminal block

TB2	TB1
	TB3
TB4	TB5
TB6	TB7
TB8	TB9
TB10	TB11
TB12	TB13
TB14	
TB16	TB15
TB18	TB17

# With A1S64TCTRTBW→Q64TCRTBWN

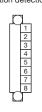




Q64TCRTBWN (right slot side) terminal block terminal block terminal block TB2 TB1 TB3 TB4 TB5 TB6 TB7 TB8 TB7 TB1 TB11 TB12 TB13 TB14 TB15 TB15 TB15 TB15 TB15 TB18

# Disconnection detection connector conversion cable

A1S62TCRTBW-S2
A1S64TCTRTBW
(heating and cooling control, platinum RTD)
disconnection detection onnector



0	nnector				
				Terminal number	Signal
	Terminal	Signal		TB1	name
	number	name	~		
	1	BW1	1	TB2	CT1
	2	BW1	1	TB3	CT1
	3	BW2	1	TB4	CT2
	4	BW2	1 1	TB5	CT2
	5	Empty		TB6	CT3
	6	Empty		TB7	CT3
	7	Empty	11	TB8	CT4
	8	Empty	1	TB9	CT4
				TB10	CT5
				TB11	CT5
				TB12	CT6
				TB13	CT6
				TB14	CT7
				TB15	CT7
				TD16	CTO

+				
	(	left slo	RTBW ot side)	
		TB2 TB4 TB6 TB8 TB10 TB12 TB14 TB16 TB18	TB1 TB3 TB5 TB7 TB9 TB11 TB13 TB15 TB17	

## Notes

1. Be sure to install the disconnection detection connector conversion cable on the left side and the conversion adapter on the right side of the MELSEC-Q series module.

Use of the module with the cable and adapter installed in the reverse causes MELSEC-Q series module damage.

# [Specification comparison chart]

	Model	MELSEC-A	AnS series	MELSEC-Q series		
		A1S62TCRTBW-S2	A1S64TCTRTBW	Q64TCRTBWN		
Specification		A13021Ch1bW-32	(Under heating and cooling control)	(Under heating and cooling control)		
Control output			Transistor output			
No. of tempera	ture input points	2 channels				
Applicable plat	inum RTDs	See Table 8.				
	bient temperature: 23°C±5°C	Full scale × (±0.3%) ±1 digit		_		
Am	bient temperature: 25°C±5°C	_	Full scale × (±0.3%) ±1 digit	Full scale × (±0.3%)		
Am	bient temperature: 0°C to 55°C	Full scale × (±0	0.7%) ±1 digit	Full scale × (±0.7%)		
Sampling cycle	)	500ms / 2 cha	annels (constant regardless of the number of u	sed channels)		
Heating control	I output cycle		1 to 100s			
Cooling control	l output cycle		1 to 1005			
Sensor current		Approx. 0.25mA	Approx. 0.3mA	_		
mpact of allowa	able input conductor resistance	20Ω or less	10Ω or less	_		
nput impedand	ce	_	-	1ΜΩ		
nput filter			0 to 100s (0: Input filter OFF)			
Sensor correcti	ion value setting		-50.00 to 50.00%			
Operation durin	ng sensor input disconnection		Upscale processing			
Operation durin	ng sensor input short circuit	_	Downscale processing	_		
Temperature co	ontrol method	PID ON/C	PFF pulse	PID ON/OFF pulse or 2-position control		
	PID constant setting		Configurable by auto-tuning			
	Proportional band (P)	_	0.1 to 1000.0%	0.0 to 1000.0% (0: 2-position control)		
PID constant range	Heating proportional band (Ph)	0.1 to 1000.0%				
	Cooling proportional band (Pc)	0.1 to 1000.070				
	Integral time (I)	1 to 3600s		0 to 3600s (0: P control, PD control)		
	Derivative time (D)	0 to 3600s (0: PI control)		0 to 3600s (0: P control, PI control)		
Target value se	tting range	Within the	e temperature range set by the used temperat	ure sensor		
Cooling method	d setting	Air cooling / V	Vater cooling	Air cooling / Water cooling / Linear		
	Output signal					
	Rated load voltage	10.2 to	30VDC	10 to 30VDC		
Fransistor	Maximum load current		0.1A/point, 0.4A/common			
output	Maximum inrush current		0.4A 10ms			
Juipui	Leakage current at OFF		0.1mA or less			
	Maximum voltage drop at ON		1.0VDC (TYP) 0.1A, 2.5VDC (MAX) 0.1 A			
	Response time		OFF→ON: 2ms or less ON→OFF: 2ms or less			
Isolation metho	od.	Between input and ground: Transformer insulation		controller power supply: Transformer insulatio		
isolation metric		Between input and channel: Transformer insulation	Between input channe	ls: Transformer insulation		
				U.R.D., Ltd.		
		U.R.D.	., Ltd.	CTL-12-S36-8 (0.0 to 100.0A)		
Heater	Current sensor	CTL-12-S36-8	(0.0 to 100.0A)	CTL-12-S36-10 (0.0 to 100.0A)		
disconnection		CTL-6-P(-H) (0	.00 to 20.00A)	CTL-12-S56-10 (0.0 to 100.0A)		
detection				CTL-6-P(-H) (0.00 to 20.00A)		
specifications	Input method	Multiplexer method: A/D conversion		_		
	Input accuracy	_	Full scale	e × (±1.0%)		
	No. of warning delays		3 to 255			
No. of occupied	d I/O points		32 points			
Connection me	ethod	20-point terminal bloo	ck + 8-pin connector	18-point terminal block × 2		
Internal current consumption (5VDC)		0.28A	0.39A	0.33A		

# Table 8 Applicable Platinum RTDs

Distinction DTD to us a	°C		°F	
Platinum RTD type	Measured temperature range	Data resolution	Measured temperature range	Data resolution
Pt100	-200.0 to 600.0	0.1	-300 to 1100	1
P1100	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1
IDI400	-200.0 to 500.0	0.1	-300 to 900	1
JPt100	-200.0 to 200.0	0.1	-300.0 to 300.0	0.1

• Program precautions
With the AnS series module and Q series module, the input/output signals (X, Y) and buffer memory address assignments differ. The sequence program needs to be changed.

# **Base Adapter**

# **Specifications**

The base adapter allows installation of the MELSEC-Q series using the mounting holes of the MELSEC-AnS series (Additional drilling of holes is not required). With the ERNT-ASQB \Box \n\S1 base adapter, the main base unit and the QA extension base unit QA1S51B can be both installed.

	Specifica	ations		
Base adapter model	MELSEC-AnS series compatible module	MELSEC-Q series compatible module	Remark	
ERNT-ASQB38N	A1S38B/A1S38HB/A1S38HBEU	Q38B		
ERNT-ASQB35N	A1S35B	Q35B		
ERNT-ASQB33N	A1S33B	Q33B		
ERNT-ASQB32N	A1S32B	Q33B		
ERNT-ASQB00JN	A1SJCPU A1SJCPU-S3 A1SJHCPU Q00JCPU Q00UJCPU		When using Q7BAT-SET, mount Q7BAT-SET to the CPU module with the CPU module (prior to Q7BAT-SET mounting) mounted to the base adapter installed.	
ERNT-ASQB68N	A1S68B	Q68B		
ERNT-ASQB65N	A1S65B	Q65B		
ERNT-ASQB58N	A1S58B	Q68B (*)		
ERNT-ASQB55N	A1S55B	Q55B		
ERNT-ASQB52N	A1S52B	Q52B		

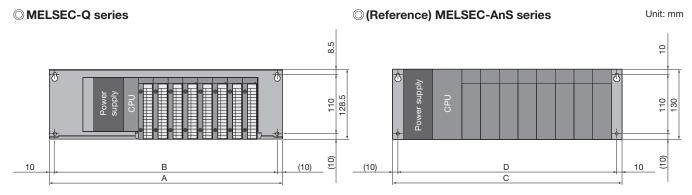
<sup>\*</sup>Base unit when power supply module mounting is required.

	Specific	ations			
Base adapter model	MELSEC-AnS series MELSEC-Q series		tible module	Remark	
	compatible module	Main	Extension		
ERNT-ASQB38N-S1	A1S38B/A1S38HB/A1S38HBEU	Q38B/Q35B/Q33B		When using Q7BAT-SET, mount Q7BAT-SET to the CPU	
ERNT-ASQB35N-S1	A1S35B	Q35B/Q33B	QA1S51B	module with the CPU module (prior to Q7BAT-SET	
ERNT-ASQB33N-S1	A1S33B	Q33B	]	mounting) mounted to the base adapter installed.	

# **Mounting Dimensions**

# When replacing the module using the ERNT-ASQB $\square$ $\square$ N base adapter

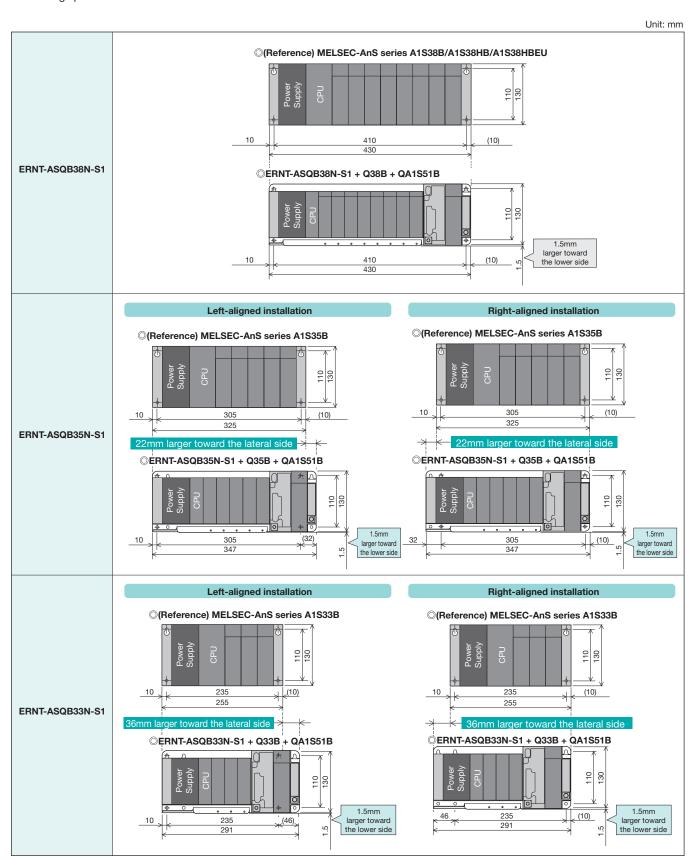
- •The base adapter mounting holes (four) share the same dimensions as those for the MELSEC-AnS series base unit. There is no need to drill additional holes on the control panel.
- •When replacing the MELSEC-AnS series with the MELSEC-Q series, the slot positions where the module is mounted are different. Adjust the wiring length prior to use.



Base adapter model	А	В	MELSEC-AnS series base unit model	С	D
ERNT-ASQB38N	430	410	A1S38B/A1S38HB	430	410
ERNT-ASQB35N	325	305	A1S35B	325	305
ERNT-ASQB33N	255	235	A1S33B	255	235
ERNT-ASQB32N	220	200	A1S32B	220	200
	330	310	A1SJCPU	330	310
ERNT-ASQB00JN			A1SJCPU-S3		
			A1SJHCPU		
ERNT-ASQB68N	420	400	A1S68B	420	400
ERNT-ASQB65N	315	295	A1S65B	315	295
ERNT-ASQB58N	365	345	A1S58N	365	345
ERNT-ASQB55N	260	240	A1S55B	260	240
ERNT-ASQB52N	155	135	A1S52B	155	135

# When replacing the module using the ERNT-ASQB□□N-S1 base adapter

- •The base adapter mounting holes (four) share the same dimensions as those for the MELSEC-AnS series base unit. There is no need to drill additional holes on the control panel.
- •When replacing the MELSEC-AnS series with the MELSEC-Q series, the slot positions where the module is mounted are different. Adjust the wiring length prior to use.
- •ERNT-ASQB35N-S1 has a 22mm larger lateral width, and ERNT-ASQB33N-S1 has a 36mm larger lateral width. Be sure to verify the mounting space.



# **Conversion Adapter DIN Rail Mounting Bracket**

# **Specifications**

When mounting the conversion adapter to a DIN rail, you can use a conversion adapter\*1 with a fixed base and a disconnection detection connector conversion cable for a temperature control module\*2.

\*1: Conversion adapter with support flange

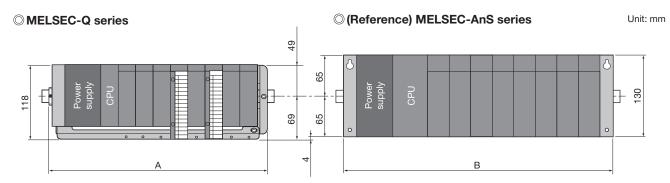
	Conversion adapter model
Analog input	ERNT-ASQT68AD-G
High-speed counter	ERNT-ASQTD61, ERNT-ASQTD62, ERNT-ASQTD62D
Temperature input	ERNT-ASQT68TD-H01, ERNT-ASQT68TD-H02

\*2: Disconnection detection connector conversion cable

		Conversion adapter model			
	Temperature control	ERNT-ASQT64TCTTBW, ERNT-ASQT64TCRTBW,			
iem	remperature control	ERNT-ASQT62TCTTBW, ERNT-ASQT62TCRTBW			

Conversion adapter DIN rail	Compatible MELSEC-Q series base unit		Damanda	
mounting bracket model	Main	Extension	Remarks	
ERNT-ASQDIN3868	Q38B Q68B		A DIN adapter manufactured by Mitsubishi Electric is	
	Q35B		separately required.	
ERNT-ASQDIN356500J	Q00JCPU	Q65B	· When using Q7BAT-SET, mount Q7BAT-SET to the	
	Q00UJCPU		CPU module with the CPU module (prior to	
ERNT-ASQDIN3355	Q33B	Q55B	Q7BAT-SET mounting) mounted to the base adapter installed.	
ERNT-ASQDIN52	-	Q52B	motaneu.	

# **Mounting Dimensions**



MELSEC-Q series base unit model	А	MELSEC-AnS series base unit model	В
Q38B	352	A1S38B/A1S38HB/A1S38HBEU	430
Q35B	268.5	A1S35B	325
Q33B	010	A1S33B	255
QSSB	213	A1S32B	220
Q00JCPU		A1SJCPU	
Q00UJCPU	268.4	A1SJCPU-S3	330
40000010		A1SJHCPU	
Q68B	350	A1S68B	420
QOOD	330	A1S58B	365
Q65B	266.5	A1S65B	315
Q55B	211	A1S55B	260
Q52B	127.5	A1S52B	155

Restriction: When installing the MELSEC-Q series without changing the position of the DIN rail, the lower dimension increases by 4mm.

# **Usage Precautions**

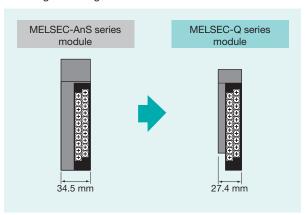
The conversion adapter is used to compensate the difference of the pin assignment when the MELSEC-AnS series module is replaced with the MELSEC-Q series module.

When replacing MELSEC-AnS series with MELSEC-Q series, be sure to refer to the manual of each module of the MELSEC-Q series to verify the differences in performance, function, CPU input/output signals, buffer memory addresses, and the like prior to use.

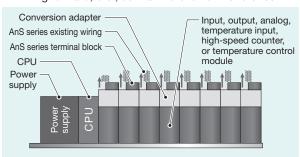
We also recommend that you refer to the "Transition from MELSEC-AnS/QnAS (Small Type) Series to Q Series Handbook" published by Mitsubishi Electric.

# **Module Width**

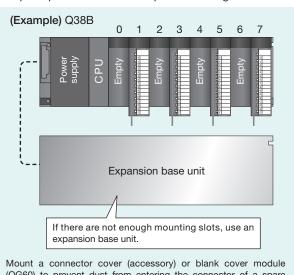
1) The module width dimension is smaller (34.5 mm→ 27.4 mm) and the wiring area is smaller, requiring verification during mounting.



2) If the wiring interferes with a mounted module, lift the wiring forward, etc., so that there is no interference.



3) If interference still occurs even when you lift the wiring, open up a slot to secure a space for wiring.



(QG60) to prevent dust from entering the connector of a spare space where a module is not mounted.

4) In consideration of wiring areas, the number of replaceable modules is as follows.

		Replacement	
MELSEC-AnS series base unit model	MELSEC-Q series base unit model	Mounting method	No. of replaceable modules
A1S38B A1S38HB A1S38HBEU	Q38B	0 1 2 3 4 5 6 7	4 modules
A1S35B	Q35B	O 1 2 3 4 Addus Addus Addus Addus Addus	2 modules
A1S33B A1S32B	Q33B	O 1 2 CANA CANA CANA CANA CANA CANA CANA CA	1 modules
A1S68B A1S58B	Q68B	0 1 2 3 4 5 6 7  Addus Jamod d	4 modules
A1S65B	Q65B	0 1 2 3 4 Addug	2 modules
A1S55B	Q55B	0 1 2 3 4	3 modules
A1S52B	Q52B	O 1	1 modules
A1SJCPU A1SJCPU-S3 A1SJHCPU	Q00JCPU Q00UJCPU	0 1 2 3 4 Addug Addug Addug Addug Addug Addug	2 modules

5) If replacement is not possible based on 2) or 3) or 4) on the left, investigate using the Mitsubishi Electric AnS-size Q series large type base unit. ► 3-2

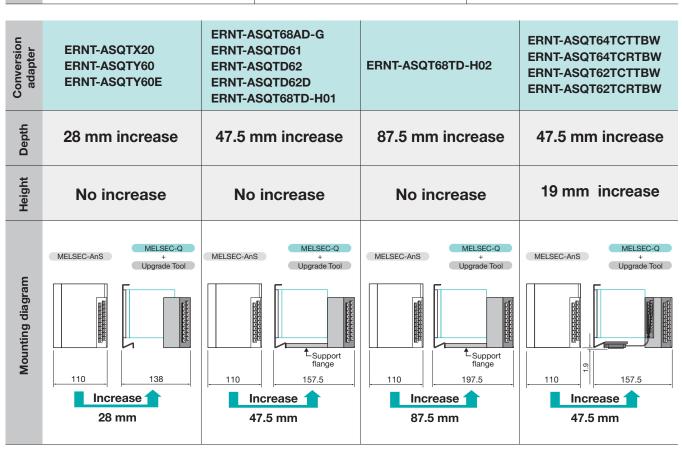
# **Depth / Height**

# When using the base adapter

The depth increases by 25.5 to 87.5 mm.

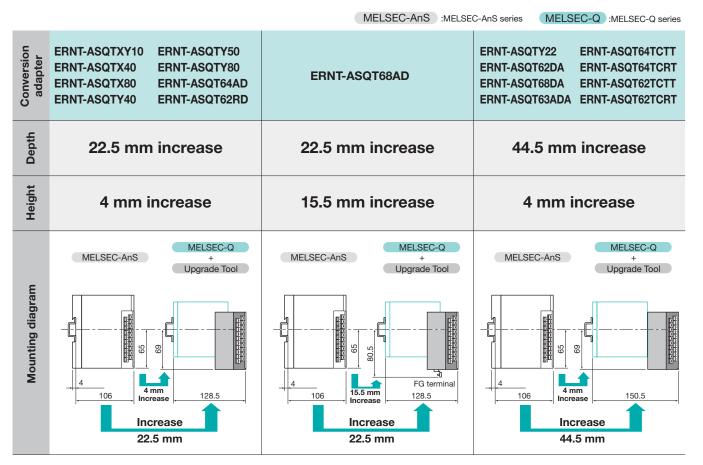
The height of ERNT-ASQT68AD is 11 mm larger toward the lower side, and the height of ERNT-ASQT6 $\square$ TC $\square$ BW is 1.9 mm larger toward the lower side.

		MELSEC-AnS :MELSE	C-AnS series MELSEC-Q :MELSEC-Q series	
Conversion adapter	ERNT-ASQTXY10 ERNT-ASQTY50 ERNT-ASQTX40 ERNT-ASQTY80 ERNT-ASQTX80 ERNT-ASQT64AD ERNT-ASQTY40 ERNT-ASQT62RD	ERNT-ASQT68AD	ERNT-ASQTY22 ERNT-ASQT64TCTT ERNT-ASQT62DA ERNT-ASQT64TCRT ERNT-ASQT68DA ERNT-ASQT62TCTT ERNT-ASQT63ADA ERNT-ASQT62TCRT	
Depth	25.5 mm increase	25.5 mm increase	47.5 mm increase	
Height	No increase	11 mm increase	No increase	
	MELSEC-Q + Upgrade Tool	MELSEC-AnS + Upgrade Tool	MELSEC-AnS + Upgrade Tool	
Mounting diagram	110	FG terminal 135.5	110 157.5	
	Increase 🛖	Increase	Increase	
	25.5 mm	25.5 mm	47.5 mm	



# When using the DIN rail

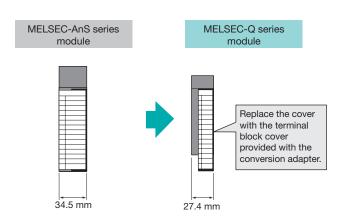
The depth increases by 25.5 to 84.5 mm, and the height increases by 4 to 15.5 mm toward the lower side.



Conversion adapter	ERNT-ASQTX20 ERNT-ASQTY60 ERNT-ASQTY60E	ERNT-ASQT68AD-G ERNT-ASQTD61 ERNT-ASQTD62 ERNT-ASQTD62D ERNT-ASQT68TD-H01	ERNT-ASQT68TD-H02	ERNT-ASQT64TCTTBW ERNT-ASQT64TCRTBW ERNT-ASQT62TCTTBW ERNT-ASQT62TCRTBW
Depth	25 mm increase	44.5 mm increase	84.5 mm increase	44.5 mm increase
Height	4 mm increase	4 mm increase	4 mm increase	5.9 mm increase
Mounting diagram	MELSEC-Q + Upgrade Tool  Upgrade Tool  Increase 25 mm	MELSEC-AnS  MELSEC-Q  Upgrade Tool  Locrease  Locrease  44.5 mm	MELSEC-AnS  WELSEC-Q  Upgrade Tool  Locrease  Increase  84.5 mm	MELSEC-AnS  MELSEC-Q  + Upgrade Tool  150.5  Increase  44.5 mm

# **Terminal Block Cover**

The terminal block cover of the MELSEC-AnS series is larger than the MELSEC-Q series module width, and therefore needs to be replaced with the terminal block cover provided with the conversion adapter (excluding 2-slot types).



# **Base Adapter / Conversion Adapter DIN Rail Mounting Bracket**

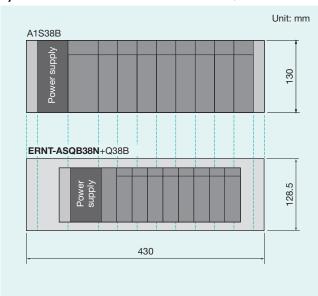
When using the base adapter with a support flange, the base adapter or conversion adapter DIN rail mounting bracket is required. Note that when mounting the MELSEC-Q series base unit to a DIN rail, the DIN adapter manufactured by Mitsubishi Electric is separately required.

Mounting method	Conversion adapter	Disconnection detection connector conversion cable	Base adapter ERNT-ASQB [N	Conversion adapter DIN rail mounting bracket ERNT-ASQDIN	Remarks
Panel surface	Support flange	Support	Required	_	-
mounting	No support flange	No support	Required *	-	*Not required when not using the mounting holesof the MELSEC-AnS series base unit.
DIN rail mounting	Support flange	Support	-	Required *	*A DIN adapter manufactured by Mitsubishi Electric is separately required.
mounting	No support flange	No support	-	No required	-

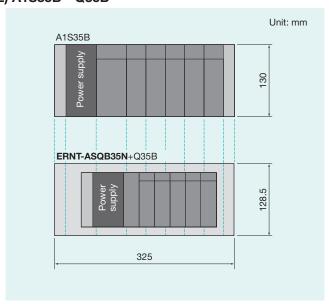
# **Slot Positions**

When you replace the MELSEC-AnS series with the MELSEC-Q series, the slot positions are different. Change the slot positions where modules are mounted (if there are open slots) and adjust the wiring lengths prior to use.

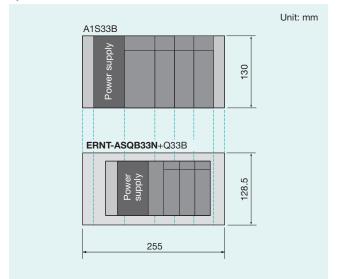
# 1) A1S38B/A1S38HB/A1S38HBEU→Q38B



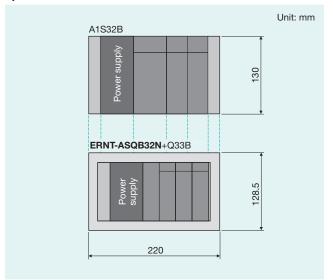
# 2) A1S35B→Q35B



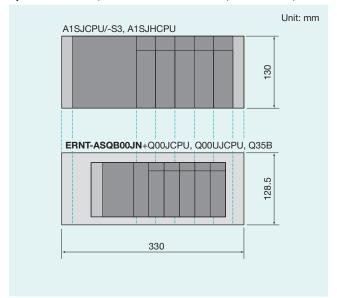
# 3) A1S33B→Q33B



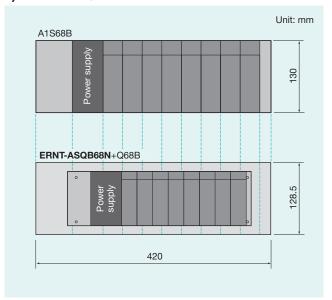
# 4) A1S32B→Q33B



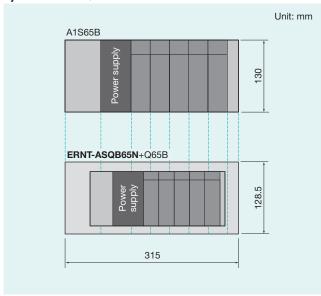
# 5) A1SJCPU/-S3, A1SJHCPU→Q00JCPU, Q00UJCPU, Q35B



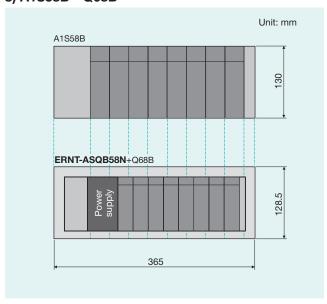
# 6) A1S68B→Q68B



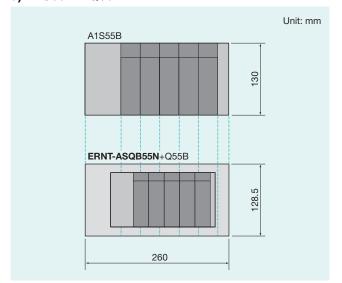
# 7) A1S65B→Q65B



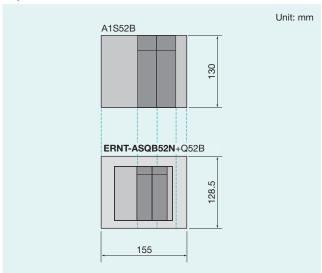
# 8) A1S58B→Q68B



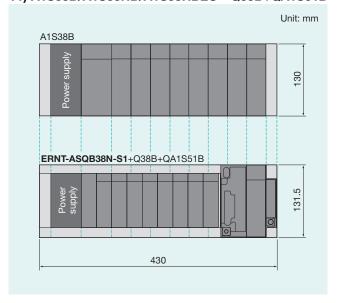
# 9) A1S55B→Q55B



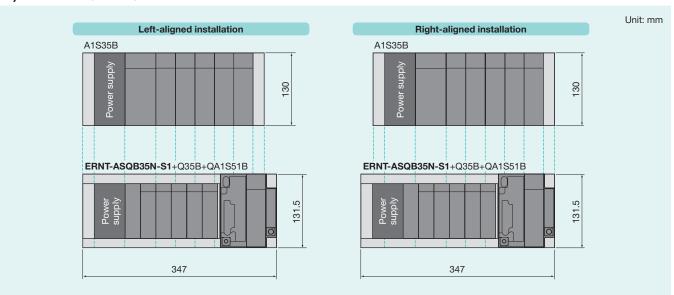
# 10) A1S52B→Q52B



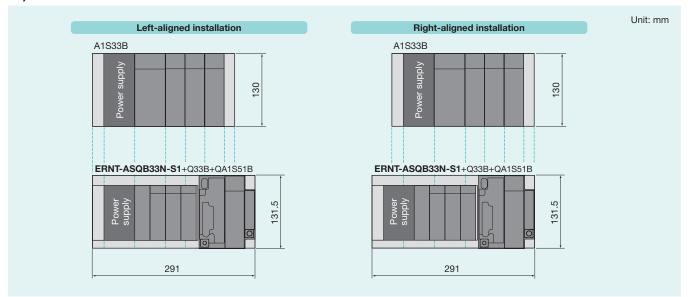
# 11) A1S38B/A1S38HB/A1S38HBEU→Q38B+QA1S51B



# 12) A1S35B→Q35B+QA1S51B



# 13) A1S33B→Q33B+QA1S51B



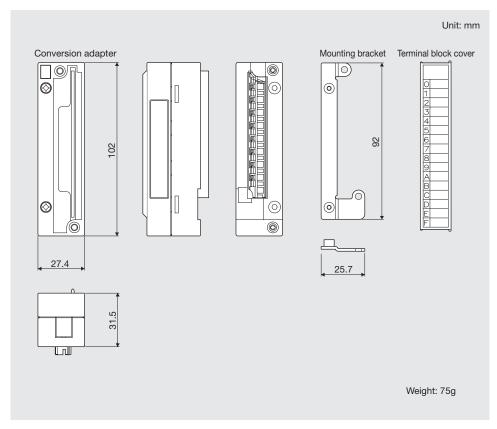
# **External Dimensions**

# **Conversion Adapter**



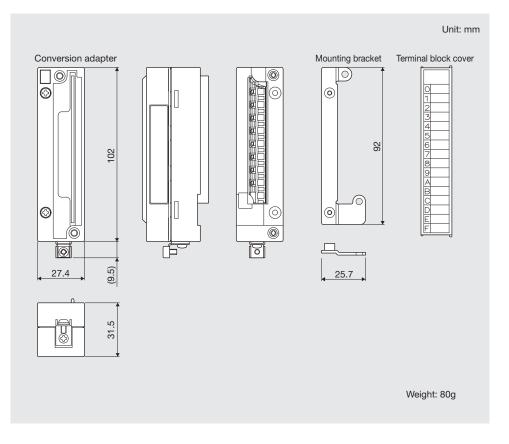
Model names:

**ERNT-ASQTXY10 ERNT-ASQTX40 ERNT-ASQTX80 ERNT-ASQTY22 ERNT-ASQTY40 ERNT-ASQTY50 ERNT-ASQTY80 ERNT-ASQT64AD ERNT-ASQT62DA ERNT-ASQT68DA ERNT-ASQT63ADA ERNT-ASQT62RD** 



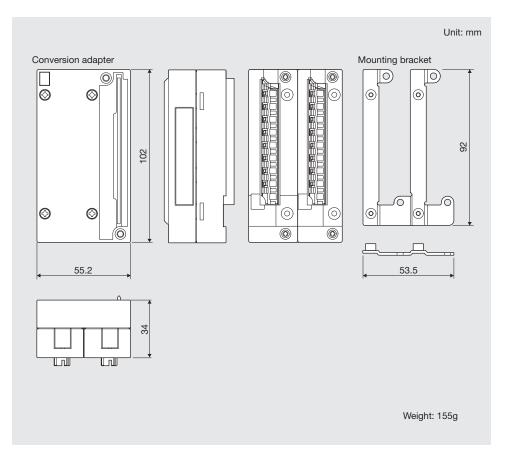


Model name: **ERNT-ASQT68AD** 



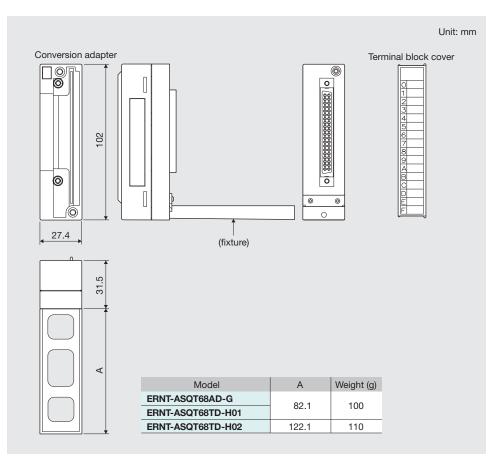


Model names: ERNT-ASQTX20 ERNT-ASQTY60 ERNT-ASQTY60E



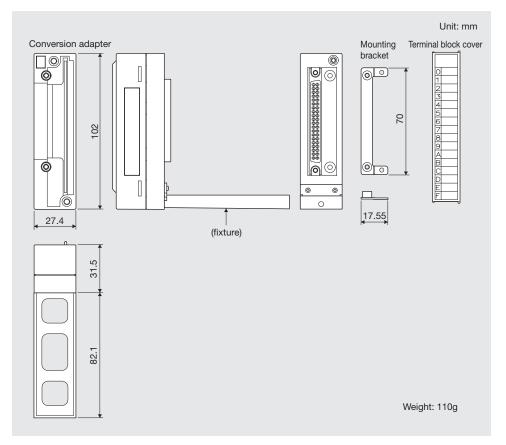


Model names: ERNT-ASQT68AD-G ERNT-ASQT68TD-H01 ERNT-ASQT68TD-H02



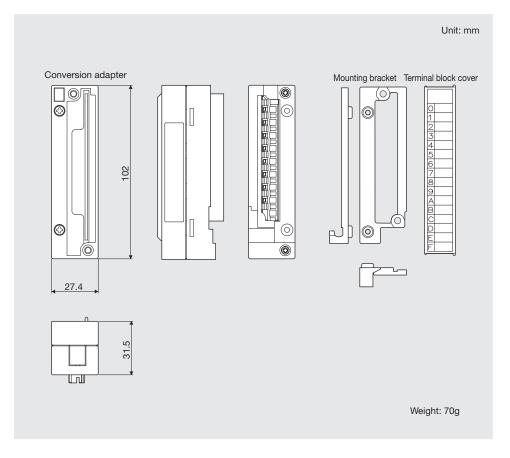


Model names: **ERNT-ASQTD61 ERNT-ASQTD62 ERNT-ASQTD62D** 



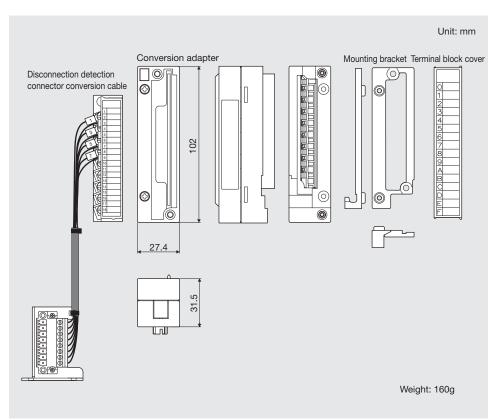


Model names: **ERNT-ASQT64TCTT ERNT-ASQT64TCRT ERNT-ASQT62TCTT ERNT-ASQT62TCRT** 





Model names: **ERNT-ASQT64TCTTBW ERNT-ASQT64TCRTBW ERNT-ASQT62TCTTBW ERNT-ASQT62TCRTBW** 

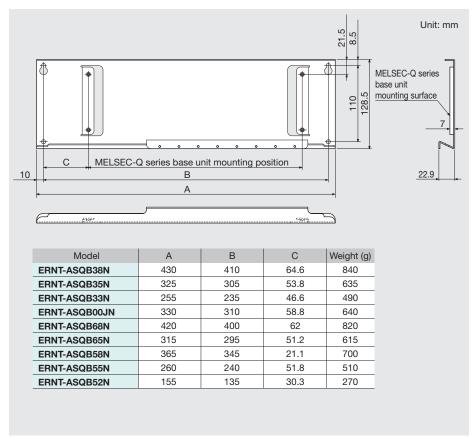


# **Base Adapter**



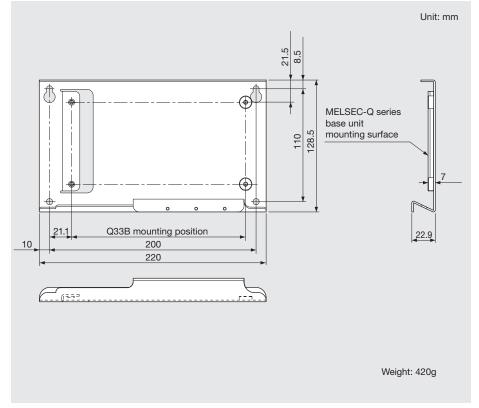
Model names:

**ERNT-ASQB38N ERNT-ASQB35N ERNT-ASQB33N ERNT-ASQB00JN ERNT-ASQB68N ERNT-ASQB65N ERNT-ASQB58N ERNT-ASQB55N ERNT-ASQB52N** 



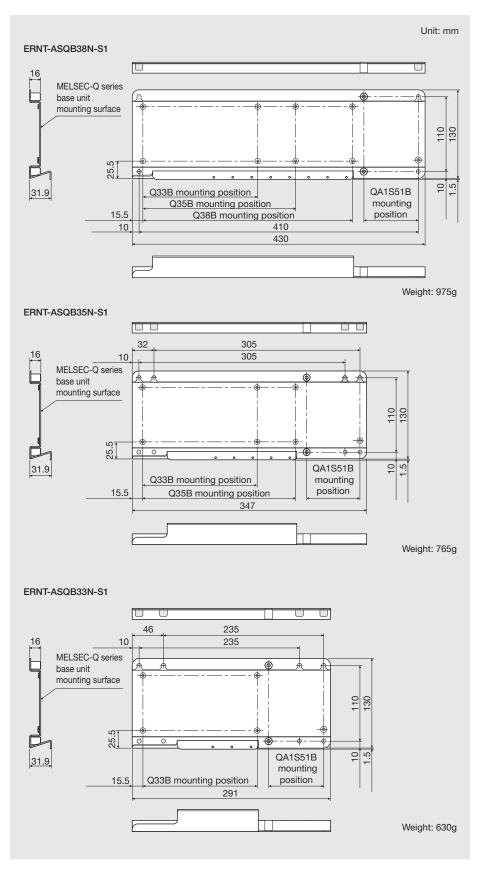


Model names: **ERNT-ASQB32N** 

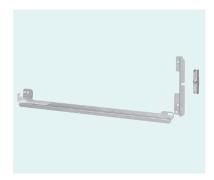




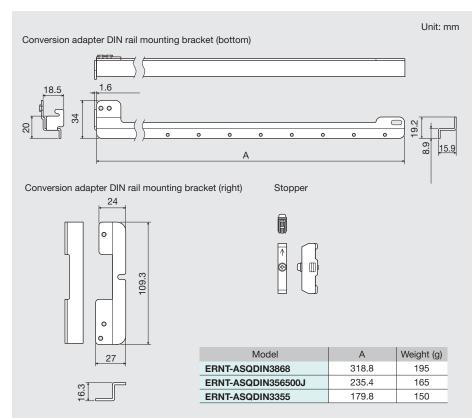
Model names: **ERNT-ASQB38N-S1 ERNT-ASQB35N-S1 ERNT-ASQB33N-S1** 



# **Conversion Adapter DIN Rail Mounting Bracket**

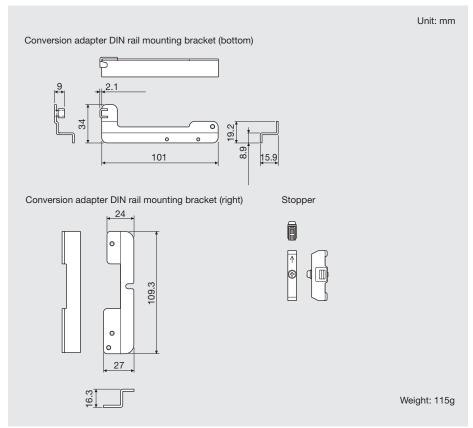


Model names: **ERNT-ASQDIN3868 ERNT-ASQDIN356500J ERNT-ASQDIN3355** 





Model names: **ERNT-ASQDIN52** 



Memo



# SYSMAC C Series $\Rightarrow$ MELSEC-Q Series Upgrade Tool

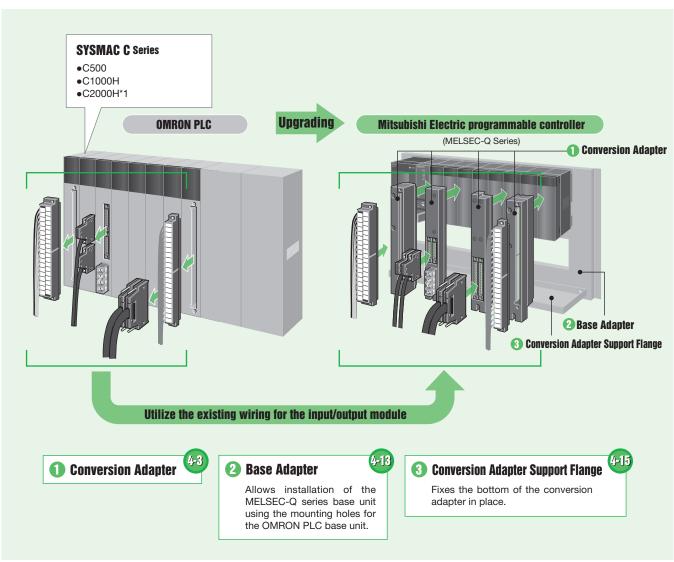
# Upgrading from the SYSMAC C series to the MELSEC-Q Series

- Simplifies replacement with the MELSEC-Q series

  The upgrade tool makes it easy to replace the OMRON SYSMAC C series programmable controller with the Mitsubishi Electric MELSEC-Q series.
- Significantly shortens the time required for input and output module wiring, and significantly reduces wiring errors
  - •The upgrade tool allows you to connect the wiring connected to the SYSMAC C series input/output modules as is to the MELSEC-Q series using a conversion adapter. (Some power supply and common terminal connection changes required.)
  - By using a base adapter, the MELSEC-Q series can be installed using the SYSMAC C series mounting holes. (Additional drilling of holes is not required.)

# **Product Overview**

This upgrade tool comprises a "conversion adapter" that changes the existing wiring connected to OMRON PLC SYSMAC C series input and output modules to wiring applicable to the modules of the MELSEC-Q series, a "conversion adapter support flange" for fixing the bottom of the conversion adapter in place, a "base adapter" that makes it possible to install the MELSEC-Q series base unit using the mounting holes of the SYSMAC C series base unit, and a "program converter" for converting the sequence program.



<sup>\*1</sup> The conversion adapters are only for the C500.

# **Model List**

# **1** Conversion Adapter

# [1-slot type]

Input/	SYSMAC C series MELSEC-Q series		Conversion adapter				
Output	module model	module model	Model	Shape		No. of input/	Page
Output	before replacement	after replacement	Model	SYSMAC C series	MELSEC-Q series	output points	
	C500-IA121	QX10	ERNT-CQTX121	Terminal block (20 points)	Terminal block		4-3
	C500-ID112	QX70	ERNT-CQTX112213		(18 points)	16 points	4-3
	C500-ID213	QX40, QX40-S1	ENVI-OQIATIZZIS	(20 points)	(10 points)		
	C500-ID215	QX41	ERNT-CQTX215218	Terminal block	Connector (40D)		4-4
Input	C500-ID218	QX41, QX41-S1	ERN1-CQ1X215218	(38 points)	Connector (40P)	32 points	4-4
iliput	C500-ID218CN	QX41, QX41-S1	EDNE OO OVOTOEOT	Connector (24P) × 2	0 (107)	32 points	4-4
	C500-ID501CN	QX71	ERNT-CQCX218501	+ Terminal block (4 points)	Connector (40P)		4-4
	C500-ID114	QX72	ERNT-CQCX114219	Connector (40P) × 2	Connector (40P) × 2	64 points	4-5
	C500-ID219	QX42, QX42-S1, QX82	LINT-OQUATI-219				
	C500-OC221	QY10	ERNT-CQTY221	Terminal block (20 points)			4-6
	C500-OA121	QY22			Terminal block (18 points)	16 points	i
	C500-OA222	QY22	ERNT-CQTY226				4-6
	C500-OA226	QY22					
	C500-OD219	QY40P, QY50	ERNT-CQTY219217				4-7
	C500-OD217	QY40P, QY50	ENN1-CQ11219217				<del></del>
	C500-OD411	QY40P, QY50	ERNT-CQTY411				4-7
Output	C500-OD412	QY41P	ERNT-CQTY412	Terminal block			4-8
Output	C500-OD414	QY41P	ERNT-CQTY414218	(38 points)	Connector (40P)	32 points	4-8
	C500-OD218	QY41P	(*1)	(30 points)	4 		
	C500-OD415CN	QY41P	ERNT-CQCY415	Connector (24P) × 2	0 (107)	32 points	4-9
	C500-OD501CN	QY71	ERNT-CQCY501	Terminal block (4 points)	Connector (40P)		4-9
	C500-OD213	QY42P	ERNT-CQCY213	Connector (40P) × 2	Connector (40P) × 2	64 points	4-10

# [2-slot type]

	-						
l	SYSMAC C series	MELSEC-Q series	Conversion adapter				
Input/ Output	module model	module model		Shape		No. of input/	Page
Output	before replacement	after replacement	Model	SYSMAC C series	MELSEC-Q series	output points	
Input	C500-IA122	QX10 × 2 modules	ERNT-CQTX122		 		4-11
	C500-OC224	QY10 × 2 modules	ERNT-CQTY224	Terminal block	Terminal block		4-11
Output	C500-OA225	QY22 × 2 modules	ERNT-CQTY225	(38 points)	(18 points)	32 points	4-12
Output	C500-OD218	QY50 × 2 modules	ERNT-CQTY218	(36 points)	× 2		4-12
	C500-OD414	Q150 x 2 modules	(*1)				7-12

<sup>\*1:</sup> In a case where the switching capacity (load current) cannot be satisfied with a 1-slot type (QY41P), satisfaction can be achieved using a 2-slot type (QY50 × 2 modules). [Point] The universal conversion adapter (see 7-6) can be used for replacing modules not listed above (C500-IA222/IA223/OC223/OD215/OD212/OA223).

# 2 Base Adapter

SYSMAC C series module model before replacement	MELSEC-Q series module model after replacement	Base adapter model	Mountable conversion adapter support flange	Page
C500-BC091 C2000-BC091 C2000-BC061 C500-BI081 C2000-BI083	Q312B Q38B Q612B, Q68B	ERNT-CQB081	Conversion adapter support flanges ERNT-QF12 and ERNT-QF8	4-13 to 4-14
C500-BC051/052 C500-BC061 C500-BI051	Q38B, Q35B Q68B, Q65B, Q55B	ERNT-CQB051	Conversion adapter fixtues ERNT-QF8 and ERNT-QF5	4-14
C500-BC031	Q35B, Q33B	ERNT-CQB031	Conversion adapter support flange ERNT-QF5	

# **3** Conversion Adapter support flange

Conversion adapter support flange model	Description	Remarks	Page
ERNT-QF12	12-slot conversion adapter support flange	A conversion adenter support flance is always required	
ERNT-QF8	8-slot conversion adapter support flange	A conversion adapter support flange is always required with conversion adapter use.	4-15
ERNT-QF5	5-slot conversion adapter support flange	mar convolois adaptor doci	

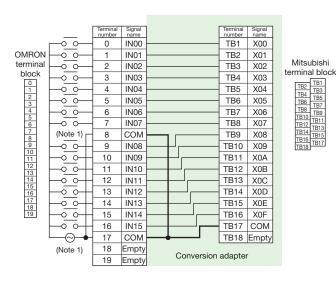
# **Conversion Adapter**

# **Specifications**

# 1-slot type

# 1) ERNT-CQTX121 Terminal block (20p)→Terminal block (18p)

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model
ERNT-CQTX121	C500-IA121	16 points	QX10



Impat moad	[mpat module opcomeduon companion on and					
	Model	SYSMAC C series	MELSEC-Q series			
Specification		C500-IA121	QX10			
No. of input pe	oints	16 points	16 points			
Input voltage		100 to 120VAC	100 to 120VAC			
Input current		10mA/100VAC	Approx. 8mA/100VAC			
Operating	ON voltage	60VAC or more	80VAC or more			
voltage	OFF voltage	20VAC or less	30VAC or less			
Input response	ON response time	35ms or less	15ms or less			
time	OFF response time	55ms or less	20ms or less			
Isolation meth	od	Photocoupler isolation	Photocoupler isolation			
External connection		20P terminal block	18P terminal block			
No. of points per common (Note 1)		8 points (2 circuits)	16 points (1 circuit)			
Internal currer	nt consumption	180mA or less	50mA			

[Input module specification comparison chart]

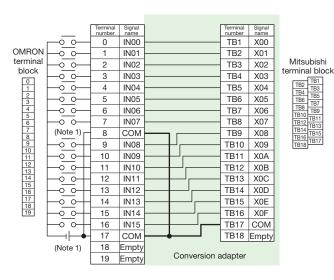
[Input module specification comparison chart]

- 1. In a case where the number of points per common changes from eight (two circuits) to 16 and the terminal numbers 8 and 17 on the SYSMAC C series side are used separately, a wiring change is required.

  2. For areas, verify the
- $\square$  areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used

# 2) ERNT-CQTX112213 Terminal block (20p)-Terminal block (18p)

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model
EDIT 0.0TV///00/0	C500-ID112	16 points	QX70
ERNT-CQTX112213	C500-ID213	16 points	QX40, QX40-S1



	Model	SYSMAC C series	MELSEC-Q series
		C500-ID112	QX70
Specificati	on	(Sink type)	(Sink/Source common type)
No. of inpu	it points	16 points	16 points
Input volta	ge	5 to 12VDC	5VDC/12VDC
Input curre	nt	16mA/12VDC	Approx. 3.3mA/12VDC
Operating	ON voltage	4VDC or more	3.5VDC or more
voltage	OFF voltage	1.5VDC or less	1VDC or less
Input	ON response time	1.5ms or less	1/5/10/20/70ms or less
time	OFF response time	1.5ms or less	1/5/10/20/70ms or less
Isolation m	ethod	Photocoupler isolation	Photocoupler isolation
External connection		20P terminal block	18P terminal block
No. of poin	ts per common	8 points (2 circuits)	16 points (1 circuit)
Internal curr	ent consumption	10mA or less	55mA

	Model	SYSMAC C series	MELSEC	-Q series
		C500-ID213	C500-ID213 QX40 C	
Specificati	on	(Sink type)	(Sink type)	(Sink type)
No. of inpu	ıt points	16 points	16 points	16 points
Input volta	ge	12 to 24VDC	24VDC	24VDC
Input curre	nt	10mA/24VDC	Approx. 4mA/24VDC	Approx. 6mA/24VDC
Operating	ON voltage	10.2VDC or more	19VDC or more	19VDC or more
voltage	OFF voltage	3VDC or less	11VDC or less	11VDC or less
Input	ON response time	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms
response	OFF response time	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms
Isolation m	ethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
External connection		20P terminal block	18P terminal block	18P terminal block
No. of poin (Note 1)	ts per common	8 points (2 circuits)	16 points (1 circuit)	16 points (1 circuit)
Internal curr	ent consumption	20mA or less	50mA	60mA

- 1. In a case where the number of points per common changes from eight (two circuits) to 16 and the terminal numbers 8 and 17 on the SYSMAC C series side are used separately, a wiring change is required.
- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  3. For detailed and general specifications not described in the input module specification
- comparison chart, refer to the user's manual of the input module used.

# 3) ERNT-CQTX215218 Terminal block (38P)→Connector (40P)

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model
ERNT-CQTX215218	C500-ID215	20 mainte	QX41
	C500-ID218	32 points	QX41, QX41-S1

# IN00 IN01 X04 X05 OMRON terminal Mitsubishi IN07 block connector A0 IN09 IN10 IN11 IN12 IN13 IN14 IN15 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1 INOO IN01 IN02 IN03 IN10 B12 IN11 IN12 B13 IN13 IN14 IN15 Empty Empty Empty Empty (Note 2) (Note 1) Conversion adapter

#### [Input module specification comparison chart]

	Model	SYSMAC C series	MELSEC-Q series
		C500-ID215	QX41
Specification	on	(Sink/Source common type)	(Sink type)
No. of inpu	t points	32 points	32 points
Input voltag	ge	12 to 24VDC	24VDC
Input curre	nt	10mA/24VDC	Approx. 4mA/24VDC
Operating	ON voltage	10.2VDC or more	19VDC or more
voltage	OFF voltage	3VDC or less	11VDC or less
Input	ON response time	15ms or less	1/5/10/20/70ms or less
response	OFF response time	15ms or less	1/5/10/20/70ms or less
Isolation method		Photocoupler isolation	Photocoupler isolation
External connection		38P terminal block	40P terminal block
No. of points p	er common (Note 1)	8 points (4 circuits)	32 points (1 circuit)
Internal curre	ent consumption	160mA or less	75mA

Model		SYSMAC C series	MELSEC	-Q series
	_	C500-ID218 QX41		QX41-S1
Specification	on	(Sink/Source common type)	(Sink type)	(Sink type)
No. of inpu	t points	32 points	32 points	32 points
Input voltag	ge	12 to 24VDC	24VDC	24VDC
Input curre	nt	10mA/24VDC	Approx. 4mA/24VDC	Approx. 4mA/24VDC
Operating	ON voltage	10.2VDC or more	19VDC or more	19VDC or more
voltage	OFF voltage	3VDC or less	11VDC or less	9.5VDC or less
Input	ON response	1.5ms or less	1/5/10/20/70ms	0.1/0.2/0.4/0.6/1ms
	time	1.31118 01 1688	or less	0.1/0.2/0.4/0.0/11118
response time	OFF response	1.5ms or less	1/5/10/20/70ms	0.1/0.2/0.4/0.6/1ms
ume	time	1.51115 01 1655	or less	0.1/0.2/0.4/0.0/11115
Isolation m	ethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
External connection		38P terminal block	40P terminal block	40P terminal block
No. of points p	er common (Note 1)	8 points (4 circuits)	32 points (1 circuit)	32 points (1 circuit)
Internal curre	ent consumption	260mA or less	75mA	75mA

### Notes

- 1. In a case where the number of points per common changes from eight (four circuits) to 32 and the terminal numbers A8, A17, B8 and B17 on the SYSMAC C series side are used separately, a wiring change is required.

[Input module specification comparison chart] Model SYSMAC C series

- Only the sink type is compatible.
   For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  4. For detailed and general specifications not described in the input module specification
- comparison chart, refer to the user's manual of the input module used

MELSEC-Q series

1/5/10/20/70ms or less

Photocoupler isolation

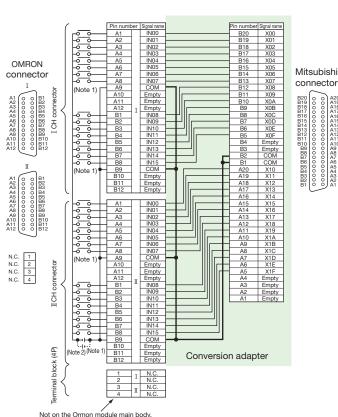
40P connector

32 points (1 circuit)

70mA

# 4) ERNT-CQCX218501 Connector (24P) × 2 + Terminal block (4P)→Connector (40P)

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model
EDUE 0000000000	C500-ID218CN	20 mainta	QX41, QX41-S1
ERNT-CQCX218501	C500-ID501CN	32 points	QX71



		C500-ID218CN	QX41	QX41-31
Specification		(Sink/Source common type)   (Sink type)		(Sink type)
No. of input points		32 points 32 points		32 points
Input volta	ge	12 to 24VDC	24VDC	24VDC
Input curre	ent	10mA/24VDC	Approx. 4mA/24VDC	Approx. 4mA/24VDC
Operating	ON voltage	10.2VDC or more	19VDC or more	19VDC or more
voltage	OFF voltage	3VDC or less	11VDC or less	9.5VDC or less
Input	ON response	1.5ms or less	1/5/10/20/70ms	0.1/0.2/0.4/0.6/1ms
•	time	1.31118 01 1688	or less	0.1/0.2/0.4/0.6/11115
response	OFF response	1.5ms or less	1/5/10/20/70ms	0.1/0.2/0.4/0.6/1ms
une	At	1.31115 01 1655		0.1/0.2/0.4/0.0/11118

	time		or less		
Isolation method		Photocoupler isolation	Photocoupler isolation		Photocoupler isolation
External connection		24P connector × 2	40P connector		40P connector
No. of points p	er common (Note 1)	8 points (4 circuits)	32 points (1 circuit)		32 points (1 circuit)
Internal curre	ent consumption	200mA or less	751	mA	75mA
	Model	SYSMAC C series		MELSEC-Q series	
	_	C500-ID501CN		QX71	
Specification	on	(Sink/Source common type)		(Sink/Source common type)	
No. of inpu	t points	32 points		32 points	
Input voltag	ge	5VDC		5	SVDC/12VDC
Input current		3.5mA/5VDC		Approx. 1.2mA/5VDC	
Operating	ON voltage	3VDC or mo	re	3.5VDC or more	
voltage	OFF voltage	1VDC or less			1VDC or less
Input	ON response	1.5ms or less		1/5/10	0/20/70ms or less

# Internal current consumption

OFF response

time Isolation method

External connection

No. of points per common (Note 1)

In a case where the number of points per common changes from eight (four circuits) to 32 and the terminal numbers A9 and B9 of I as well as A9 and B9 of II on the SYSMAC C

1.5ms or less

Photocoupler isolation

24P connector × 2

8 points (4 circuits)

200mA or less

- series side are used separately, a wiring change is required. 2. C500-ID218CN  $\rightarrow$  QX41/QX41-S1 conversion is sink type compatible only.
- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used.

# 5) ERNT-CQCX114219 Connector (40P) × 2→Connector (40P) × 2

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model
ERNT-CQCX114219	C500-ID114	C4 mainta	QX72
ENNI-CQCX114219	C500-ID219	64 points	QX42, QX42-S1, QX82

OMRON connector I/II 000000000000000000000 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20

# Mitsubishi connector /000000000000000000000 000000000000000000000 600000000000000000000 B20 B19 B18 B17 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B2 B1 A20 A19 A18 A17 A16 A15 A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1 B20 B19 B18 B17 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B7 B6 B5 B4 B3 B7

# [Input module specification comparison chart]

_	C500-ID114	QX72
		Q/(12
	(Sink/Source common type)	(Sink/Source common type)
	64 points	64 points
	12VDC	5/12VDC
	7mA/12VDC	Approx. 3.3mA/12VDC
age	8VDC or more	3.5VDC or more
tage	3VDC or less	1VDC or less
onse time	1.5ms or less	1/5/10/20/70ms or less
ponse time	1.5ms or less	1/5/10/20/70ms or less
	Photocoupler isolation	Photocoupler isolation
	40P connector × 2	40P connector × 2
te 1)	8 points (8 circuits)	32 points (2 circuits)
	340mA or less	85mA
3	age Itage Donse time Eponse time Sponse time Oute 1)	64 points  12VDC  7mA/12VDC  age 8VDC or more tage 3VDC or less conse time 1.5ms or less Photocoupler isolation  40P connector × 2 ote 1) 8 points (8 circuits)

Model		SYSMAC C series	MELSEC-Q series			
		C500-ID219	QX42	QX42-S1	QX82	
Specification		(Sink/Source common type)	(Sink type)	(Sink type)	(Source type)	
No. of input points		64 points	64 points	64 points	64 points	
Input voltage		24VDC	24VDC	24VDC	24VDC	
Input current		7mA/24VDC	Approx. 4mA/24VDC	Approx. 4mA/24VDC	Approx. 4mA/24VDC	
Operating voltage	ON voltage	16VDC or more	19VDC or more	19VDC or more	19VDC or more	
Operating voltage	OFF voltage	5VDC or less	11VDC or less	9.5VDC or less	11VDC or less	
Input rooponee time	ON response time	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms	1/5/10/20/70ms or less	
Input response time	OFF response time	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms	1/5/10/20/70ms or less	
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
External connection		40P connector × 2	40P connector × 2	40P connector × 2	40P connector × 2	
No. of points per con	nmon (Note 1)	8 points (8 circuits)	32 points (2 circuits)	32 points (2 circuits)	32 points (2 circuits)	
Internal current consu	umption	340mA or less	90mA	90mA	90mA	

Conversion adapter

- Notes

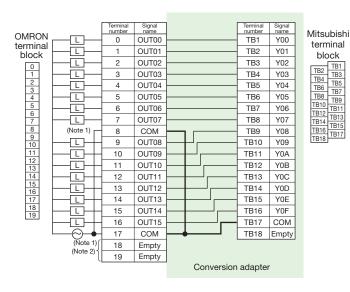
  1. In a case where the number of points per common changes from eight (eight circuits) to 32 (two circuits) and the terminal numbers A9 and A18 of I, B9 and B18 of IV on the SYSMAC C series side are used separately, a wiring change is required.

  2. For markers wifty that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

  3. For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used.

# 6) ERNT-CQTY221 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
ERNT-CQTY221	C500-OC221	16 points	QY10



### [Output module specification comparison chart]

[Output module specification comparison chart]				
	Model	SYSMAC C series	MELSEC-Q series	
Specification		C500-OC221	QY10	
No. of outp	out points	16 points	16 points	
Switching	capacity	250VAC/2A (COSΦ=1) 250VAC/0.5A (COSΦ=0.4)	240VAC/2A (COSΦ=1) 24VDC/2A (Resistance load)	
		24VDC/2A (8A/common, 16A/module)	(8A/common)	
Output	ON response time	15ms or less	10ms or less	
response	OFF response time	15ms or less	12ms or less	
External co	nnection	20P terminal block	18P terminal block	
No. of point (Note 1)	ts per common	8 points (2 circuits)	16 points (1 circuit)	
Leakage current		_	_	
Surge supp	oressor	No	No	
Fuse		No	No	
Internal curre	ent consumption	100mA or less	430mA	

#### Notes

TB1 TB3

TB9

TB5 TB7 TB9

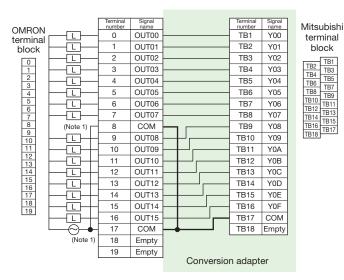
TB17

- 1. In a case where the number of points per common changes from eight (two circuits) to 16 (one circuit) and the terminal numbers 8 and 17 on the SYSMAC C series side are used separately, a wiring change is required.

  2. The external power supply connected to terminal numbers 18 and 19 on the SYSMAC C
- The external power supply connected to terminal numbers to and 19 on the 915 MAC of series side is not required.
   For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
   For detailed and general specifications not described in the output module specification
- comparison chart, refer to the user's manual of the output module used.

# 7) ERNT-CQTY226 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
	C500-OA121		
ERNT-CQTY226	C500-OA222	16 points	QY22
	C500-OA226		



# [Output module specification comparison chart]

Output module specification comparison chart				
	Model	SYSMAC C series	MELSEC-Q series	
Specification		C500-OA121	QY22	
No. of out	put points	16 points	16 points	
Switching	capacity	132VAC/1A	100 to 240VAC/0.6A	
Switching	Сараспу	(4A/common, 5A/module)	(4.8A/common)	
Output	ON response time	1ms or less	1ms + 0.5Hz or less	
response time	OFF response time	1/2 the load frequency or less	1ms + 0.5Hz or less	
External c	connection	20P terminal block	18P terminal block	
No. of points per common (Note 1)		8 points (2 circuits)	16 points (1 circuit)	
Leakage current		3mA or less/100VAC	1.5mA or less/120VAC 3mA or less/240VAC	
Surge suppressor		Yes	Yes	
Fuse		Yes	No	
Internal cur	rent consumption	300mA or less	250mA	

_			
	Model	SYSMAC C series	MELSEC-Q series
Specificat	ion	C500-OA222	QY22
No. of out	put points	16 points	16 points
Cusidadaina		250VAC/1A	100 to 240VAC/0.6A
Switching	capacity	(4A/common, 5A/module)	(4.8A/common)
Output	ON response time	1ms or less	1ms + 0.5Hz or less
response	OFF response time	1/2 the load frequency or less	1ms + 0.5Hz or less
External c	onnection	20P terminal block	18P terminal block
No. of poir (Note 1)	nts per common	8 points (2 circuits)	16 points (1 circuit)
Lookogo	urrant	3mA or less/100VAC	1.5mA or less/120VAC
Leakage o	urrent	6mA or less/200VAC	3mA or less/240VAC
Surge suppressor		Yes	Yes
Fuse		Yes	No
Internal cur	rent consumption	300mA or less	250mA

Internal current consumption		300mA or less	250mA
_			
	Model	SYSMAC C series	MELSEC-Q series
Specificat	tion	C500-OA226	QY22
No. of out	put points	16 points	16 points
Cusidadalaa		250VAC/1.2A	100 to 240VAC/0.6A
Switching	capacity	(4A/common, 5A/module)	(4.8A/common)
Output	ON response	1ms or less	1ms + 0.5Hz or less
response	time	TITIS OF IESS	11115 + 0.51 12 01 less
time	OFF response	1/2 the load frequency or less	1ms + 0.5Hz or less
unio	time	72 the load frequency of loss	11110 1 0.0112 01 1000
External c	connection	20P terminal block	18P terminal block
No. of poi	nts per common	8 points (2 circuits)	16 points (1 circuit)
(Note 1)		o points (2 circuits)	16 points (1 circuit)
Leakage current		1.5mA or less/120VAC	1.5mA or less/120VAC
		3.5mA or less/240VAC	3mA or less/240VAC
Surge suppressor		Yes	Yes
Fuse		Yes	No
Internal cur	rent consumption	450mA or less	250mA

# Notes

- In a case where the number of points per common changes from eight (two circuits) to 16 (one circuit) and the terminal numbers 8 and 17 on the SYSMAC C series side are used separately, a wiring change is required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used.

# 8) ERNT-CQTY219217 Terminal block (20P)—Terminal block (18P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
EDNIT COTYO10017	C500-OD219	1C mainta	QY40P. QY50
ERNT-CQTY219217	C500-OD217	16 points	Q140P, Q150

OMBON		Terminal number	Signal name		Terminal number	Signal name
terminal		0	OUT00		TB1	Y00
block		1	OUT01		TB2	Y01
0		2	OUT02		TB3	Y02
1		3	OUT03		TB4	Y03
3		4	OUT04		TB5	Y04
4		5	OUT05		TB6	Y05
5		6	OUT06		TB7	Y06
7		7	OUT07		TB8	Y07
8	(Note 1)	8	COM	<b>–</b>	TB9	Y08
9		9	OUT08	$\square$	TB10	Y09
11		10	OUT09	$\square$	TB11	Y0A
12		11	OUT10	$\square$	TB12	Y0B
14		12	OUT11	$\square$	TB13	Y0C
15 16	$-\Box$ +	13	OUT12		TB14	Y0D
17		14	OUT13		TB15	Y0E
18 19		15	OUT14		TB16	Y0F
13		16	OUT15	$\square$	TB17	12/24VDC
	(Nata 4)	17	COM		TB18	COM
	(Note 1)	18	+V	•		
		19	+V	⊢		L
	·			Conversion	n adap	ter

## [Output module specification comparison chart]

Model		SYSMAC C series	MELSEC	-Q series
Specification		C500-OD219	QY40P	QY50
No. of out	put points	16 points	16 points	16 points
Switching	oonooity	12 to 24VDC/2.1A	12 to 24VDC/0.1A	12 to 24VDC/0.5A
Switching	сарасну	(8A/common, 16A/module)	(1.6A/common)	(4A/common)
Output	ON response time	0.2ms or less	1ms or less	1ms or less
time	OFF response time	0.4ms or less	1ms or less	1ms or less
External c	onnection	20P terminal block	18P terminal block	18P terminal block
No. of poir (Note 1)	nts per common	8 points (2 circuits)	16 points (1 circuit)	16 points (1 circuit)
Leakage o	current	0.1mA or less	0.1mA or less	0.1mA or less
Surge suppressor		Yes	Yes	Yes
Fuse		Yes	No (with protection)	Yes
Internal cur	rent consumption	160mA or less	65mA	80mA

	Model	SYSMAC C series	MELSEC	-Q series
Specificat	ion	C500-OD217	QY40P	QY50
No. of out	put points	16 points	16 points	16 points
Switching	capacity	12 to 24VDC/1A (4A/common, 5A/module)	12 to 24VDC/0.1A (1.6A/common)	12 to 24VDC/0.5A (4A/common)
Output	ON response time	0.2ms or less	1ms or less	1ms or less
response	OFF response time	0.3ms or less	1ms or less	1ms or less
External c	onnection	20P terminal block	18P terminal block	18P terminal block
No. of poir (Note 1)	nts per common	8 points (2 circuits)	16 points (1 circuit)	16 points (1 circuit)
Leakage o	current	0.1mA or less	0.1mA or less	0.1mA or less
Surge suppressor		Yes	Yes	Yes
Fuse		Yes	No (with protection)	Yes
Internal cur	rent consumption	160mA or less	65mA	80mA

#### Notes

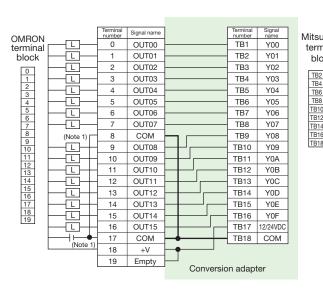
Mitsubishi terminal block

TB1
TB2
TB3
TB4
TB5
TB6
TB7

- In a case where the number of points per common changes from eight (two circuits) to 16
  and the terminal numbers 8 and 17 as well as 18 and 19 on the SYSMAC C series side are
  used separately, a wiring change is required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- For detailed and general specifications not described in the input module specification comparison chart, refer to the user's manual of the input module used.

# 9) ERNT-CQTY411 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
ERNT-CQTY411	C500-OD411	16 points	QY40P, QY50



# [Output module specification comparison chart]

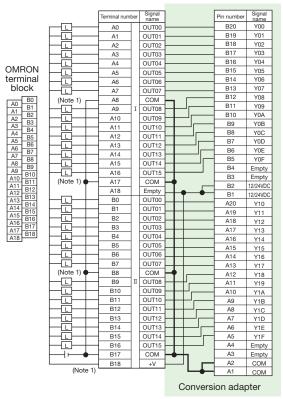
Model		SYSMAC C series	MELSEC-Q series	
Specificat	ion	C500-OD411	QY40P	QY50
No. of out	put points	16 points	16 points	16 points
Switching	consoity	12 to 48VDC/1A	12 to 24VDC/0.1A	12 to 24VDC/0.5A
Switching	Сараспу	(4A/common, 5A/module)	(1.6A/common)	(4A/common)
Output	ON response time	0.2ms or less	1ms or less	1ms or less
response	OFF response time	0.3ms or less	1ms or less	1ms or less
External c	onnection	20P terminal block	18P terminal block	18P terminal block
No. of poir (Note 1)	nts per common	16 points (1 circuit)	16 points (1 circuit)	16 points (1 circuit)
Leakage o	current	0.1mA or less	0.1mA or less	0.1mA or less
Surge sup	pressor	No	Yes	Yes
Fuse		Yes	No (with protection)	Yes
Internal cur	rent consumption	160mA or less	65mA	80mA

## Notes

- 1. Be sure to use terminal number 19 of the SYSMAC C series terminal block as an empty terminal (not connected). (Reason: Terminal numbers 18 and 19 are short-circuited inside the conversion adapter.)
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
   For detailed and general specifications not described in the output module specification.
- For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used.

# 10) ERNT-CQTY412 Terminal block (38P)→Connector (40P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
ERNT-CQTY412	C500-OD412	32 points	QY41P



Mitsubishi

connector B20 B19 B18 B17 B16 B15 B14 B13 B11 B10 B9 B8 B7 B6 B5 B4 B3 B4 B3 B2 B1 A19 A18 A17 A16 A15 A14 A13 A12 A11

### [Output module specification comparison chart]

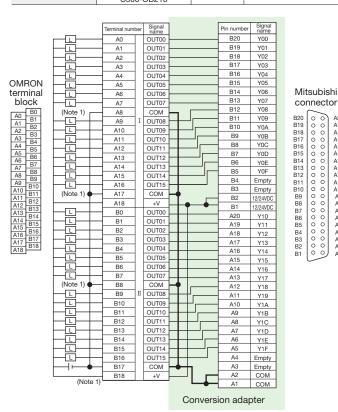
Model	SYSMAC C series	MELSEC-Q series
ion	C500-OD412	QY41P
put points	32 points	32 points
capacity	12 to 48VDC / 0.3A (4.8A/module)	12 to 24VDC / 0.1A (2A/common)
ON response time	0.2ms or less	1ms or less
OFF response time	0.3ms or less	1ms or less
onnection	38P terminal block	40P connector
nts per common	32 points (1 circuit)	32 points (1 circuit)
current	0.1mA or less	0.1mA or less
pressor	No	Yes
	Yes	No (with protection)
rent consumption	230mA or less	105mA
	put points capacity ON response time OFF response time onnection hts per common	capacity

#### Notes

- 1. Be sure to use terminal number A18 of the SYSMAC C terminal block series as an empty terminal (not connected). (Reason: Terminal numbers A18 and B18 are short-circuited inside the conversion adapter.)
- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used

# 11) ERNT-CQTY414218 Terminal block (38P)→Connector (40P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
ERNT-CQTY414218	C500-OD414	32 points	QY41P
ERN1-CQ11414218	C500_OD218	oz politis	QT4TF



[Output module specification comparison chart]

	Model	SYSMAC C series	MELSEC-Q series
Specification		C500-OD414	QY41P
No. of out	put points	32 points	32 points
Switching	capacity	12 to 48VDC / 0.3A (2.4A/common, 4.8A/module)	12 to 24VDC / 0.1A (2A/common)
Output	ON response time	0.2ms or less	1ms or less
response	OFF response time	0.3ms or less	1ms or less
External c	onnection	38P terminal block	40P connector
No. of poir (Note 1)	nts per common	16 points (2 circuits)	32 points (1 circuit)
Leakage o	current	0.1mA or less	0.1mA or less
Surge suppressor		No	Yes
Fuse		No	No (with protection)
Internal cur	rent consumption	230mA or less	105mA

Model		SYSMAC C series	MELSEC-Q series
Specification		C500-OD218	QY41P
No. of out	put points	32 points	32 points
Switching	capacity	12 to 24VDC / 0.3A (2.4A/common, 4.8A/module)	12 to 24VDC / 0.1A (2A/common)
Output	ON response time	0.2ms or less	1ms or less
response time	OFF response time	0.3ms or less	1ms or less
External c	onnection	38P terminal block	40P connector
No. of points per common (Note 1)		16 points (2 circuits)	32 points (1 circuit)
Leakage current		0.1mA or less	0.1mA or less
Surge suppressor		Yes	Yes
Fuse		Yes	No (with protection)
Internal cur	rent consumption	230mA or less	105mA

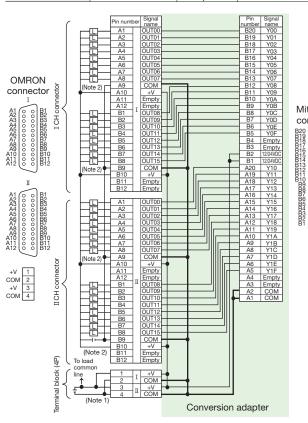
# Notes

\(\)

- In a case where the number of points per common changes from 16 (two circuits) to 32 (one circuit) and the terminal numbers A8, A17, B8, and B17 as well as A18 and B18 on the SYSMAC C series side are used separately, a wiring change is required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used.

# 12) ERNT-CQCY415 Connector (24P) × 2 + Terminal block (4P)→Connector (40P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
ERNT-CQCY415	C500-OD415CN	32 points	QY41P



# [Output module specification comparison chart]

Model		SYSMAC C series	MELSEC-Q series
Specification		C500-OD415CN	QY41P
No. of out	put points	32 points	32 points
Switching	capacity	12 to 48VDC / 0.3A (2.4A/common, 4.8A/module)	12 to 24VDC / 0.1A (2A/common)
Output	ON response time	0.2ms or less	1ms or less
response time	OFF response time	0.3ms or less	1ms or less
External c	onnection	24P connector × 2 + Terminal block	40P connector
No. of points per common (Note 1)		16 points (2 circuits)	32 points (1 circuit)
Leakage current		0.1mA or less	0.1mA or less
Surge suppressor		No	Yes
Fuse		No	No (with protection)
Internal cur	rent consumption	230mA or less	105mA

### Notes

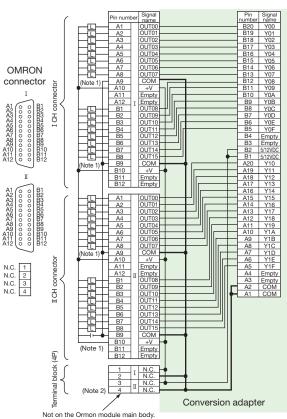
Mitsubishi

connector

- 1. In a case where the wiring of the power common line when C500-OD415CN is used uses a terminal block (4P), the power supply common line needs to be removed from the terminal block and rewired to the terminal block (4P) of this conversion adapter.
- In a case where the number of points per common changes from 16 (two circuits) to 32 (one circuit) and the pin numbers A9 and B9 of I, A9 and B9 of II, A10 and B10 of I, A10 and B10 of II, and 1 and 3 as well as 2 and 4 of the terminal block (4P) on the SYSMAC-C series side are used separately, a wiring change is required.
- areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used.

# 13) ERNT-CQCY501 Connector (24P) × 2 + Terminal block (4P)→Connector (40P)

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model
ERNT-CQCY501	C500-OD501CN	32 points	QY71
	Circuit		Din Cinnel



C500-OD501CN Specification No. of output points 32 points 5 to 12VDC / 16mA Switching capacity 5VDC / 35mA 512mA/common ON response 0.5ms or less Output 0.2ms or less time response OFF response time 0.3ms or less 0.5ms or less time External connection 24P connector × 2 40P connector No. of points per common 8 points (4 circuits) 32 points (1 circuit) (Note 1) 0.1mA or less Leakage current Surge suppressor No No Fuse No Yes 250mA or less Internal current consumption

SYSMAC C series

MELSEC-Q series

QY71

[Output module specification comparison chart]

Model

## Notes

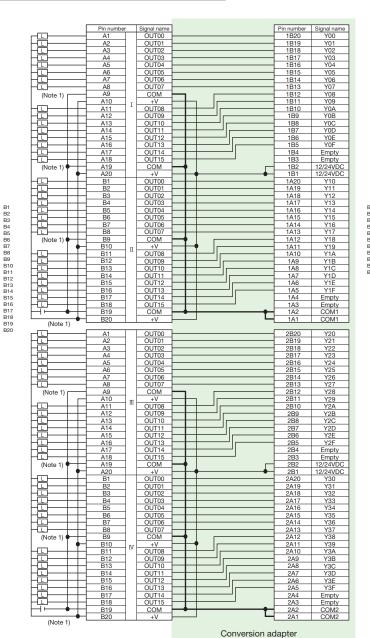
Mitsubishi

connector

- In a case where the number of points per common changes from 8 (four circuits) to 32 (one circuit) and the pin numbers A9 and B9 of I, A9 and B9 of II, A10 and B10 of I, as well as A10 and B10 of II on the SYSMAC C series side are used separately, a wiring change is reauired.
- 2. Be sure to use the terminal block (4P) of the SYSMAC C series of the conversion adapter as an empty terminal (not connected). (Reason: A short-circuit is created with the power supply common inside the conversion adapter.)
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 4. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used.

# 14) ERNT-CQCY213 Connector (40P) × 2 → Connector (40P) × 2

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model
ERNT-CQCY213	C500-OD213	64 points	QY42P



# Mitsubishi connector

		1			2	2	
220 119 118 117 116 115 114 113 112 111 110 110 111 110 111 110 111 110 111 110 111 110 111 110 111 110 111 110 111 11	000000000000000000000000000000000000000	(00000000000000000000000000000000000000	A20 A19 A18 A17 A16 A15 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1	B20 B19 B18 B17 B16 B15 B14 B13 B12 B11 B10 B9 B8 B7 B6 B5 B4 B3 B1	000000000000000000000000000000000000000	(00000000000000000000000000000000000000	A20 A19 A18 A17 A16 A15 A14 A13 A12 A11 A10 A9 A8 A7 A6 A5 A4 A3 A2 A1

# [Output module specification comparison chart]

OMRON connector

I/I

00000000000000000000

B1 B2 B3 B4 B5 B6 B7 B8 B9 B10 B11 B12 B13 B14 B15 B16 B17 B18 B19 B20 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20

	Model	SYSMAC C series	MELSEC-Q series
Specification		C500-OD213	QY42P
No. of output points		64 points	64 points
Switching capacity		4.5VDC / 16mA to 26.4V / 100mA	12 to 24VDC / 0.1A
Switching capacity		(800mA/common, 6.4A/module)	2A/common
Output vannamentines	ON response time	0.2ms or less	1ms or less
Output response time	OFF response time	0.3ms or less	1ms or less
External connection		40P connector × 2	40P connector × 2
No. of points per comr	non (Note 1)	8 points (8 circuits)	32 points (2 circuits)
Leakage current		0.1mA or less	0.1mA or less
Surge suppressor		No	Yes
Fuse		Yes	No (with protection)
Internal current consur	nption	460mA or less	150mA

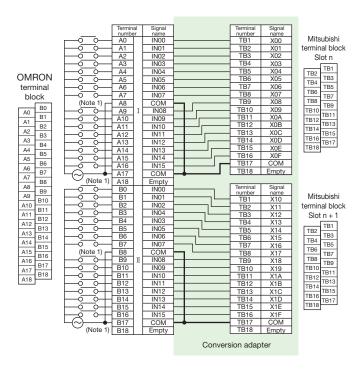
## Notes

- 1. In a case where the number of points per common changes from eight (eight circuits) to 32 (two circuits) and the pin numbers A9, A10, A19 and A20 of I, B9, B10, B19 and B20 of II, A9, A10, A19 and A20 of II, as well as B9, B10, B19, and B20 of IV on the SYSMAC C series side are used separately, a wiring change is required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.
- 3. For detailed and general specifications not described in the output module specification comparison chart, refer to the user's manual of the output module used

# 2-slot type

# 1) ERNT-CQTX122

Conversion adapter model	SYSMAC C series module model	No. of input points	MELSEC-Q series module model	No. of required modules
ERNT-CQTX122	C500-IA122	32 points	QX10	2 modules



### [Input module specification comparison chart]

Model		SYSMAC C series	MELSEC-Q series	
Specification		C500-IA122	QX10	
No. of inp	out points	32 points	16 points	
Rated inn	ut voltage	100 to 120VAC (+10/-15%)	100 to 120VAC (+10/-15%)	
riated inp	ut voitage	50/60Hz	50/60Hz (±3Hz)	
Patad inn	ut current	10mA TYP (100VAC)	Approx. 8mA (100VAC, 60Hz)	
nateu inp	ut current	TOTILA TTP (TOUVAC)	Approx. 7mA (100VAC, 50Hz)	
ON voltage		60VAC, minimum	80VAC or more	
OFF volta	age	20VAC, maximum	30VAC or less	
Response	OFF→ON	35ms or less	15ms or less (100VAC, 50Hz, 60Hz)	
time	ON→OFF	55ms or less	20ms or less (100VAC, 50Hz, 60Hz)	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Internal c	urrent	5VDC, 60mA or less	50mA (TYP. all points ON)	
consumption		SVDC, coma or less	John (FFF. all points ON)	
No. of points per		8 points/common	16 points/common	
common		o points/common	10 points/common	
External in	nterface	38-point terminal block	18-point terminal block	

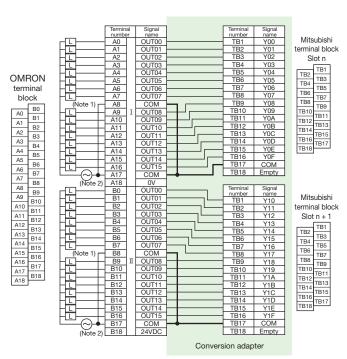
#### Notes

- In a case where the number of points per common changes from eight (four circuits) to 16 (two modules) and the terminal numbers A8 and A17 as well as B8 and B17 on the SYSMAC C series side are used separately, a wiring change is required.
- SYSMAC C series side are used separately, a wiring change is required.

  2. For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

# 2) ERNT-CQTY224 Connector (40P) × 2-Connector (40P) × 2

Conversion adapter model		No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-CQTY224	C500-OC224	32 points	QY10	2 modules



# [Output module specification comparison chart]

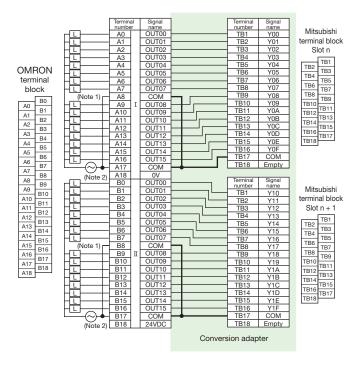
			-	
Model		SYSMAC C series	MELSEC-Q series	
Specification		C500-OC224	QY10	
No. of out	put points	32 points	16 points	
		250VAC/2A (COS Φ=1),	24VDC 2A/point (Resistance load)	
Switching	capacity	250VAC/0.5A (COS Φ=0.4)	240VAC 2A/point (COS Φ=1)	
		24VDC/2A (8A/common, 32A/common)	8A/common	
Response	OFF→ON	15ms or less	10ms or less	
time	ON→OFF	15ms or less	12ms or less	
Surge suppressor		No	No	
Fuse		No	No	
Leakage	current	_	_	
Internal current		5VDC. 200mA or less	430mA (TYP. all points ON)	
consumption		3VDO, 20011A 01 1633		
No. of points per		8 points/common	16 points/common	
common		o pointo, common	10 points/confinion	
External in	nterface	38-point terminal block	18-point terminal block	

## Notes

- In a case where the number of points per common changes from eight (four circuits) to 16 (two modules) and the terminal numbers A8 and A17 as well as B8 and B17 on the SYSMAC C series side are used separately, a wiring change is required.
- The external power supply connected to terminal numbers A18 and B18 on the SYSMAC C series side is not required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### 3) ERNT-CQTY225

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-CQTY225	C500-OA225	32 points	QY22	2 modules



#### [Output module specification comparison chart]

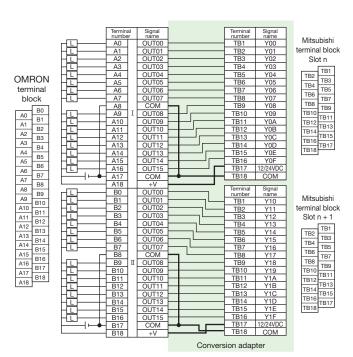
Lambar		opooniousion companious c		
Model		SYSMAC C series	MELSEC-Q series	
Specifica	ation	C500-OA225	QY22	
No. of out	put points	32 points	16 points	
Switching	capacity	250VAC/1A (with restrictions) 50/60Hz	100 to 240VAC (+10/-15%) 0.6A/point, 4.8A/common	
D	OFF→ON	1ms or less	1ms + 0.5Hz or less	
Response time	ON→OFF	1/2 the load frequency or less	1ms + 0.5Hz or less (Rated load, resistance load)	
Surge suppressor		_	CR absorber	
Fuse		Yes	No (Fuse installation with external wiring recommended)	
Leakage current		2mA (100VAC) or less, 5mA (200VAC) or less	1.5mA or less (at 120V, 60Hz) 3mA or less (at 240V, 60Hz)	
Internal current consumption		5VDC, 200mA or less	250mA (MAX. all points ON)	
No. of points per common		8 points/common	16 points/common	
External in	nterface	38-point terminal block	18-point terminal block	

#### Note

- 1. In a case where the number of points per common changes from eight (four circuits) to 16 (two modules) and the terminal numbers A8 and A17 as well as B8 and B17 on the SYSMAC C series side are used separately, a wiring change is required.
- The external power supply connected to terminal numbers A18 and B18 on the SYSMAC C series side is not required.
- For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.

#### **4) ERNT-CQTY218**

Conversion adapter model	SYSMAC C series module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-CQTY218	C500-OD218	20 mainta	QY50	0
ERNI-CQ11218	C500-OD414	32 points	QY50	2 modules



#### [Output module specification comparison chart]

	Model	SYSMAC C series		MELSEC-Q series
Specifica	ation	C500-OD218	C500-OD414	QY50
No. of out	put points	32 p	oints	16 points
		12 to 24VDC	12 to 48VDC	
Switching	oonooity	+10%, -15%	+10%, -15%	12 to 24VDC
Switching	Сарасну	0.3A (2.4A/common,	0.3A (2.4A/common,	0.5A/point, 4A/common
		4.8A/module)	4.8A/module)	
Response	OFF→ON	0.2ms	1ms or less	
time	ON→OFF	0.2ma	or less	1ms or less
ume	UN→UFF	0.31118	OI IESS	(Rated load, resistance load)
Surge suppressor Yes		No	Zener diode	
Fuse		N	0	Yes
Leakage current		0.1mA	or less	0.1mA or less
Internal current		5VDC, 230mA or less		80mA (TYP. all points ON)
consumption				BOTTA (TTF. all points ON)
No. of points per		16 nointe/eommen		16 points/common
common		16 points/common		TO POINTS/COMMON
External in	nterface	38-point ter	minal block	18-point terminal block

#### Notes

 For areas, verify that the MELSEC-Q series module specifications satisfy the specifications of the connected device/equipment.



#### **Base Adapter**

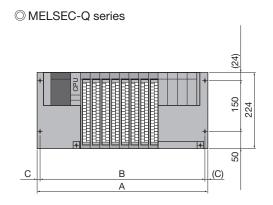
#### **Specifications**

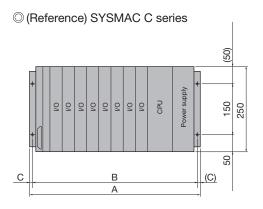
The base adapter allows installation of the MELSEC-Q series and conversion adapter support flange using the mounting holes for the SYSMAC C series base unit (additional drilling of holes is not required).

Daga adapter	Specifications			
Base adapter model	SYSMAC C series compatible module	MELSEC-Q series compatible module	Mountable conversion adapter support flange	
ERNT-CQB081	C500-BC081/082 C500-BC091 C2000-BC061 C500-BI081 C2000-BI083	Q312B Q38B Q612B Q68B	ERNT-QF12 ERNT-QF8	
ERNT-CQB051	C500-BC051/052 C500-BC061 C500-BI051	Q38B Q35B Q68B Q65B Q55B	ERNT-QF8 ERNT-QF5	
ERNT-CQB031	C500-BC031	Q35B Q33B	ERNT-QF5	

#### **Mounting Dimensions**

- •The vertical dimension is smaller than that of the SYSMAC C series. (For module width and depth dimensions, refer to the "Usage Precautions" on 4-16.)
- •The base adapter mounting holes (four) share the same dimensions as those of the SYSMAC C series base unit. There is no need to create additional holes on the control panel.
- •When replacing the SYSMAC C series with the MELSEC-Q series, the slot positions where the unit is mounted are different. Adjust the wiring length prior to use.





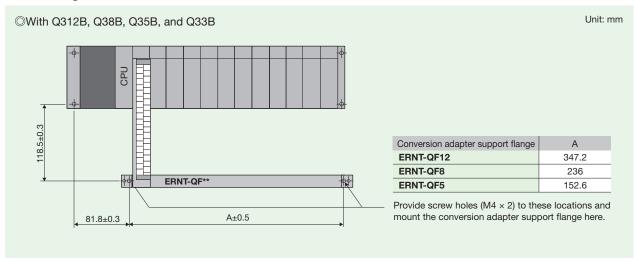
Unit: mm

Base adapter model	Α	В	С	OMRON base unit model	Α	В	С
				C500-BC081/082	480	465	7.5
				C2000-BC061	480	465	7.5
ERNT-CQB081	480	465	7.5	C500-BI081	480	465	7.5
				C2000-BI083	480	465	7.5
				C500-BC091	486	465	10.5
				C500-BC051/052	375	360	7.5
ERNT-CQB051	375	360	7.5	C500-BI051	375	360	7.5
				C500-BC061	381	360	10.5
ERNT-CQB031	276	255	10.5	C500-BC031	276	255	10.5

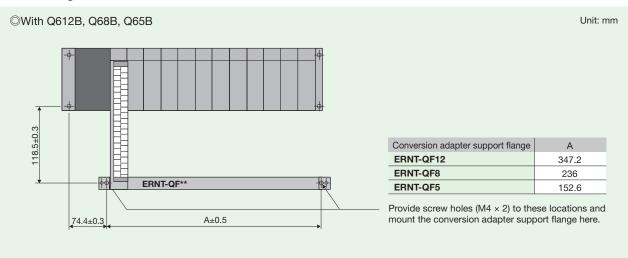
#### When Not Using a Base Adapter

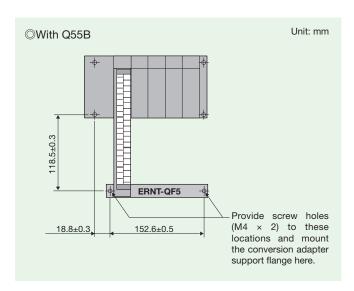
When a base adapter is not used, screw holes (M4  $\times$  2) need to be provided to mount the conversion adapter support flange as shown below. The conversion adapter support flange must be mounted.

#### When using a main base unit



#### When using an extension base unit





## **Conversion Adapter Support Flange**

#### Specifications

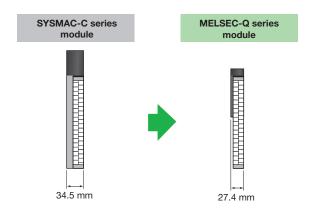
The conversion adapter support flange secures the bottom of the conversion adapter and is thus required during conversion adapter use. One support flange is required per base unit.

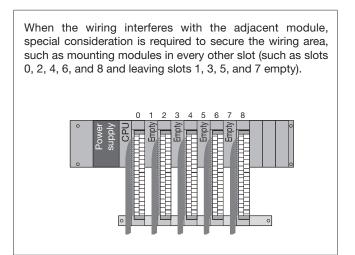
Conversion adapter support flange model	Specifications	
ERNT-QF12	Conversion adapter support flange for 12-slot MELSEC-Q series modules	
ERNT-QF8	Conversion adapter support flange for 8-slot MELSEC-Q series modules	
ERNT-QF5	Conversion adapter support flange for 5-slot MELSEC-Q series modules	

## **Usage Precautions**

#### **Module Width**

The module width is smaller (34.5 mm  $\to$  27.4 mm) and the wiring area is smaller, requiring verification during mounting.



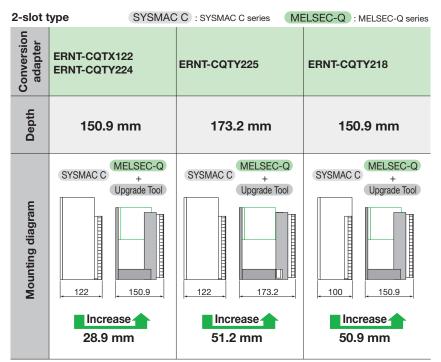


#### Depth

The depth is larger, requiring verification during mounting.

1-slot type SYSMAC C : SYSMAC C series MELSEC-Q : MELSEC					LSEC-Q : MELSEC-Q series
Conversion adapter	ERNT-CQTX121 ERNT-CQTX112213 ERNT-CQTY411 ERNT-CQTY219217 ERNT-CQTY221	ERNT-CQTY226	ERNT-CQTX215218 ERNT-CQTY412 ERNT-CQTY414218	ERNT-CQCX114219 ERNT-CQCY213	ERNT-CQCX218501 ERNT-CQCY415 ERNT-CQCY501
Depth	150.9 mm	173.2 mm	162.3 mm	174.2 mm	174.2 mm
Mounting diagram	SYSMAC C  MELSEC-Q  + Upgrade Tool  100  150.9  Increase  50.9 mm	SYSMAC C  WELSEC-Q  Upgrade Tool  100  173.2  Increase  73.2 mm	SYSMAC C  MELSEC-Q  + Upgrade Tool  100  162.3  Increase  62.3 mm	SYSMAC C  MELSEC-Q  + Upgrade Tool  146  174.2  Increase  28.2 mm	SYSMAC C MELSEC-Q Upgrade Tool  146 174.2  Increase 28.2 mm

<sup>\*:</sup> The above depth is from each panel surface. (SYSMAC C series: Base unit + Input/Output module + Terminal block; MELSEC-Q series + Upgrade Tool: Base adapter + Base unit + Input/Output module + Conversion adapter + Terminal block)



<sup>\*:</sup> The above depth is from each panel surface. (SYSMAC C series: Base unit + Input/Output module + Terminal block; MELSEC-Q series + Upgrade Tool: Base adapter + Base unit + Input/Output module + Conversion adapter + Terminal block)

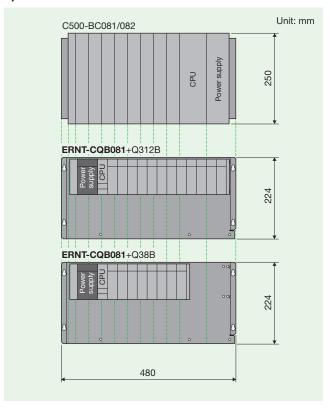
#### **Conversion Adapter Support Flange / Base Adapter**

When using a conversion adapter, the conversion adapter support flange is required. We recommend use of a base adapter that permits MELSEC-Q series installation using the mounting holes of the SYSMAC C series (additional drilling of holes is not required).

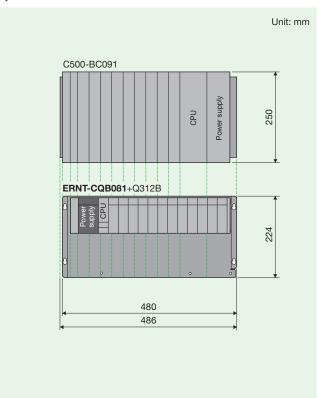
#### **Slot Positions**

When you replace the SYSMAC C series with the MELSEC-Q series, the slot positions are different. Change the slot positions where modules are mounted and adjust the wiring lengths prior to use.

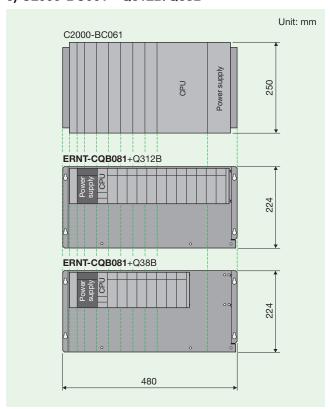
#### 1) C500-BC081/082-Q312B/Q38B



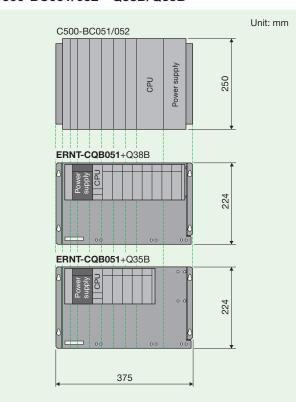
#### 2) C500-BC091→Q312B



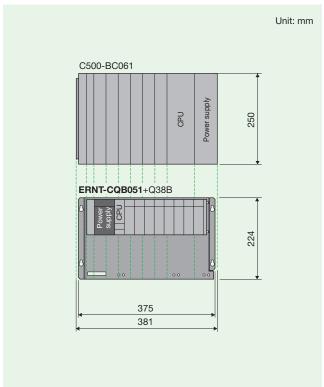
#### 3) C2000-BC061→Q312B/Q38B



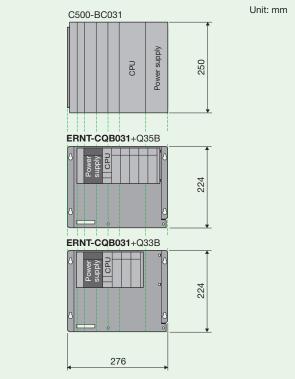
#### 4) C500-BC051/052→Q38B/Q35B



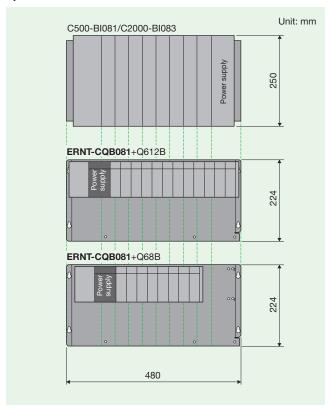
#### 5) C500-BC061→Q38B



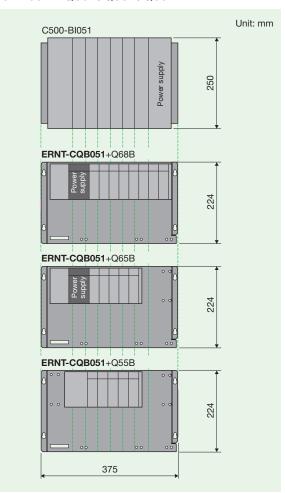
## 6) C500-BC031→Q35B/Q33B



#### 7) C500-BI081/C2000-BI083-Q612B/Q68B



#### 8) C500-BI051→Q68B/Q65B/Q55B

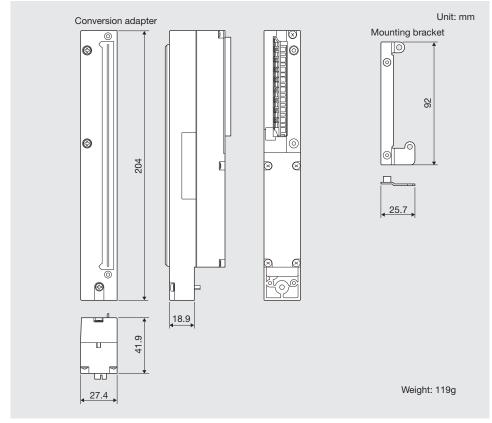


### **External Dimensions**

#### **Conversion Adapter**

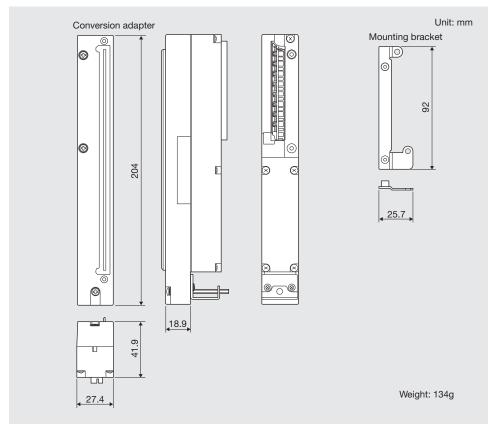


Model names: **ERNT-CQTX121 ERNT-CQTX112213 ERNT-CQTY411 ERNT-CQTY219217 ERNT-CQTY221** 



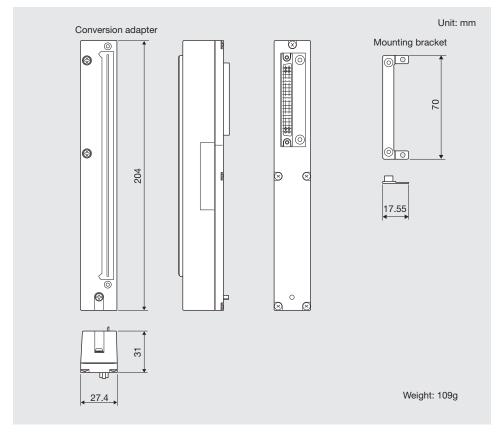


Model name: **ERNT-CQTY226** 



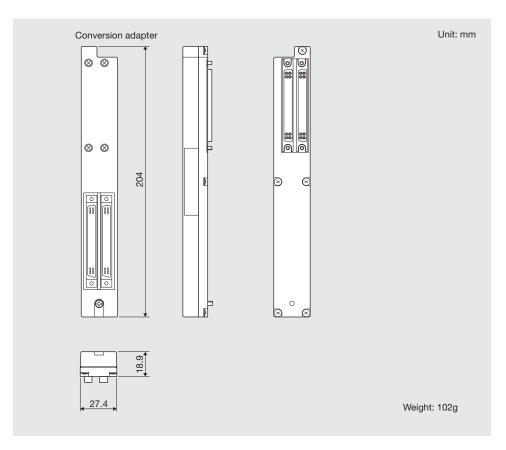


Model names: ERNT-CQTX215218 ERNT-CQTY412 ERNT-CQTY414218



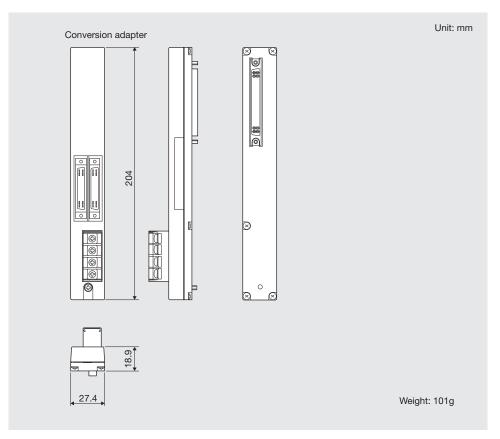


Model names: ERNT-CQCX114219 ERNT-CQCY213



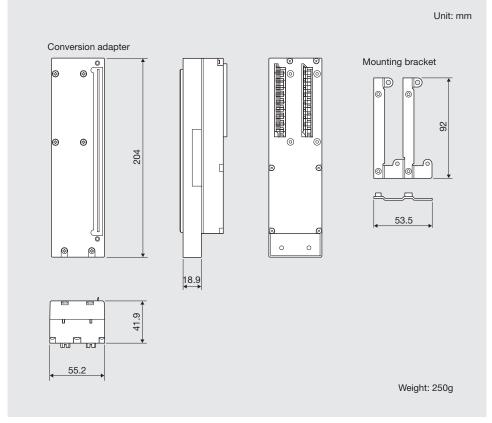


Model names: **ERNT-CQCX218501 ERNT-CQCY415 ERNT-CQCY501** 



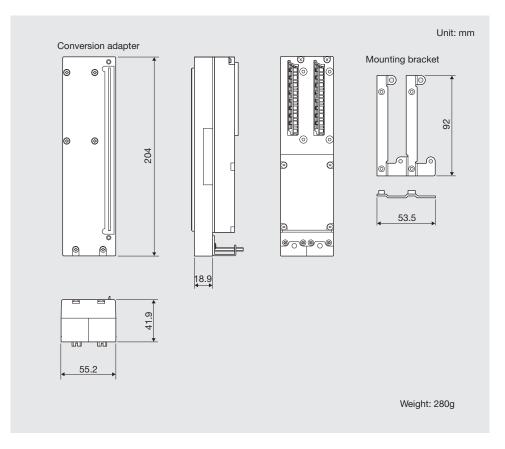


Model names: **ERNT-CQTX122 ERNT-CQTY224 ERNT-CQTY218** 





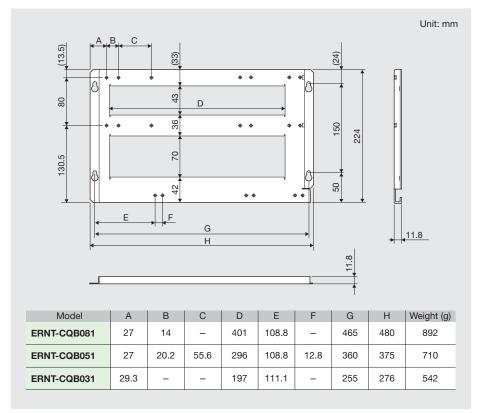
Model name: ERNT-CQTY225



#### Base Adapter



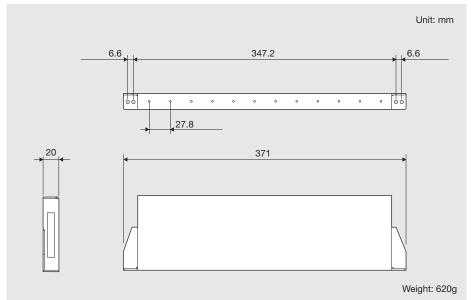
Model names: **ERNT-CQB081 ERNT-CQB051 ERNT-CQB031** 



#### **Conversion Adapter Support Flange**

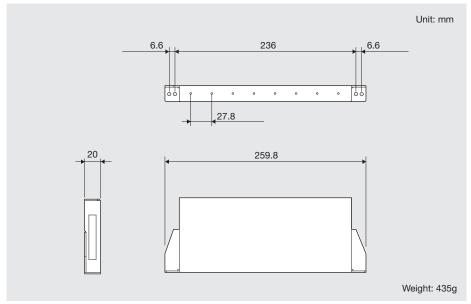


Model name: ERNT-QF12



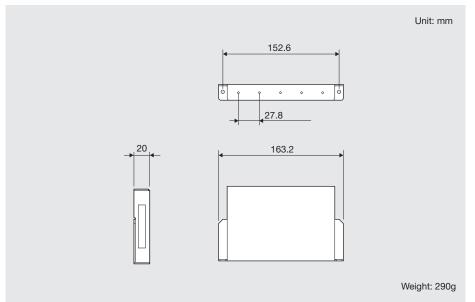


Model name: ERNT-QF8





Model name: ERNT-QF5



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# New Satellite JW Series > MELSEC-Q Series Upgrade Tool

## JW series large type (JW50H/70H/100H)

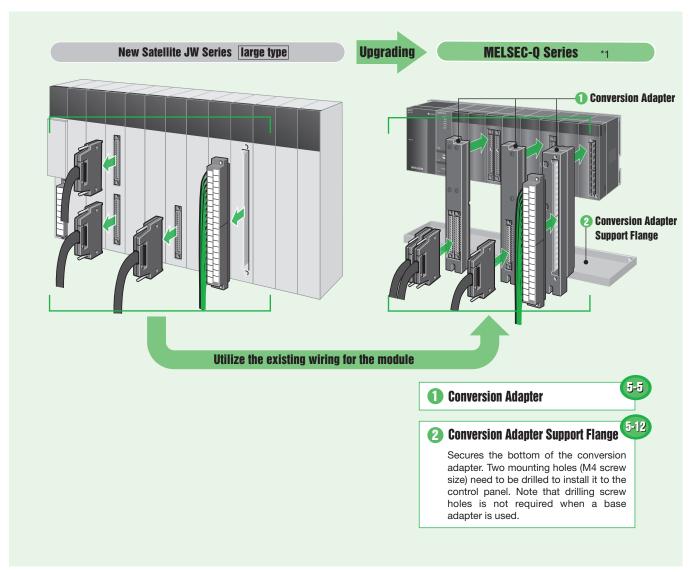
## Upgrading from the New Satellite JW series to the MELSEC-Q series

- Simplifies replacement with the MELSEC-Q series
  The upgrade tool makes it easy to replace the SHARP New Satellite JW Series programmable controller with the Mitsubishi Electric MELSEC-Q series.
- Significantly shortens the time required for input and output module wiring, and significantly reduces wiring errors

  The upgrade tool allows you to connect the wiring connected to the New Satellite JW Series input/output modules as is to the MELSEC-Q series using a conversion adapter. (Some power supply and common terminal connection changes required.)

#### **Product Overview**

This upgrade tool comprises a conversion adapter that is used to transfer the existing wiring of SHARP New Satellite JW Series programmable controller (large type: JW50H/70H/100H) input/output modules to the Mitsubishi programmable controller MELSEC-Q series input/output modules, and a "conversion adapter support flange" that is used to secure the conversion adapter at the bottom.



<sup>\*1:</sup> When replacing SHARP New Satellite JW Series programmable controller (large type: JW50H/70H/100H) with Mitsubishi programmable controller MELSEC-Q series, verification of the mounting is required due to the change in module width and depth dimensions. There may be a case that the terminal block of the conversion adapter interferes with the adjacent conversion adapter. For details, refer to "Usage Precautions" on page 5-24 in this catalog.

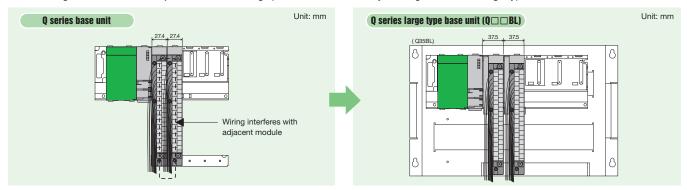
#### MITSUBISHI ELECTRIC CORPORATION

## **Upgrading using the Q series large type base unit**

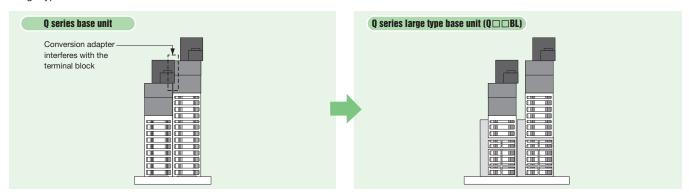
Using the Mitsubishi Electric Q series large type base unit (Q \( \subseteq \text{BL} \)) eliminates the need to secure wiring space and check for interference between adjacent conversion adapter terminal blocks.

Note that the pitch of mounting holes in some models are similar to that in the JW series, and therefore mounting positions must be reconsidered.

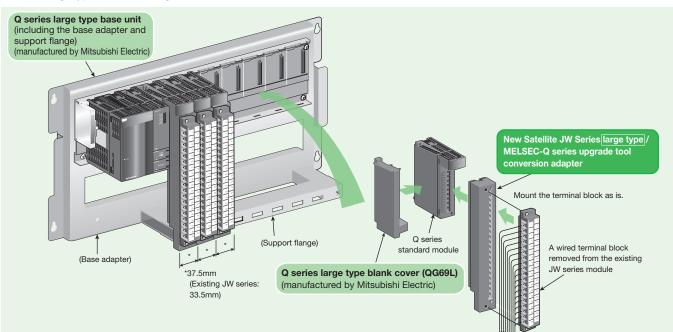
•If the wiring interferes with an adjacent module, wiring space can be secured by utilizing the Q series large type base unit.



•If the terminal block of a conversion adapter interferes with the adjacent conversion adapter, interference can be avoided by using the Q series large type base unit.



•Q series large type base unit configuration



- •The 2-slot type conversion adapter is not applicable.
- •For details on mounting dimensions, refer to page 5-16 in this catalog.

#### Q Series Large Type Base Unit List

Model	Description	Number of slots
Q38BL	Main base unit	8
Q35BL	Wall base unit	5
Q68BL	Extension base unit with	8
Q65BL	power supply	5
Q55BL	Extension base unit without power supply	5

#### **Q Series Large Type Blank Cover**

Model	Description
QG69L	Used to adjust gaps between modules

#### **Model List**

#### Conversion adapter

When selecting a conversion adapter, be sure to refer to the module specification comparison chart and notes on pages 5-5 to 5-11. These pages describe precautions such as differences in the number of points per common.

For detailed specifications and general specifications not described in the module specification comparison charts, refer to the user's manual for the module used.

Note that the areas where the specifications differ between the New Satellite JW Series large type and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### For Input/Output Modules

[1-slot type] (Applicable to the Mitsubishi Electric Q series large type base unit (Q 

BL) as well)

	New Satellite JW Series	MELSEC-Q series	Conversion adapter					
Input/	module model	module model		Sha	pe	No. of		
Output	before replacement	after replacement	Model	New Satellite JW Series	MELSEC-Q series	input/output points	Page	
	JW-11N	QX10	EDNE 4 IO44N40N	Terminal block	Terminal block	40		
	JW-12N	QX40, QX40-S1, QX70:3	ERNT-1JQ11N12N	(20 points)	(18 points)	16 points	5-5	
	JW-32N	QX41, QX41-S2, QX71.4		Tamain al la la ala	0			
Input	JW-34N	QX41, QX41-S1,	ERNT-1JQ32N34N	Terminal block (38 points)	Connector (40P)	32 points	5-6	
		QX41-S2, QX71 <sup>-4</sup> -8		(36 points)	(40F)			
	JW-64NC	OV40 OV40 O4 OV70 *5	EDNT 4 IOCANO II	O(40D) 0	O(40D) O	04		
	JW-34NC	QX42, QX42-S1, QX72 *5	ERNT-1JQ64NC	Connector (40P)×2	Connector (40P)×2	64 points	5-7	
	JW-13S	QY22	ERNT-1JQ13S	Terminal block	Terminal block	40	5-8	
	JW-12S	QY40P, QY50, QY70	ERNT-1JQ12S	(20 points)	(18 points)	16 points	5-8	
Output	JW-32S	QY41H <sup>*6</sup>	ERNT-1JQ32S	Terminal block (38 points)	Connector (40P)	32 points	5-9	
	JW-32SC	QY41H	ERNT-1JQ32SC62SC	Connector (40P)	Connector (40P)	32 points		
	JW-62SC	QY41H × 2	ERNT-1JQ32SC62SC×2 *2	Connector (40P) ×2	Connector (40P) ×2	32 points ×2	5-9	

<sup>\*1:</sup> JW-34NC is replaced with the MELSEC-Q series 64-point input module. (32 points are not used)

- \*3: Consider rewiring to the QX80 or QX80H if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB20 in such cases.

  \*4: Consider rewiring to the QX81 or QX81-S2 if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB38-E in such cases.

  \*5: Consider any of the following solutions if the existing module uses the 24VDC negative common.
- 1) JW-64NC
  - 1. Rewiring to the QX82
  - 2. Rewiring to two QX81s and two ERNT-AQTB38-Es
- 2) JW-34NC
- 1. Rewiring to one QX81 and one ERNT-AQTB38-E
- \*6: Consider rewiring to the QY50 (0.5 A, 16 points) or QY68A (2 A, 8 points) if current capacity is required. Also consider using the ERNT-AQTB20 in such cases.
- \*7: Consider rewiring to the QX40H or QX80H if the existing module uses a different power supply for each 8-point group. Also consider using the ERNT-AQTB20 in such cases.
- \*8: Consider rewiring to two QX40Hs or two QX80Hs if the existing module uses a different power supply for each 8-point group. Also consider using the ERNT-AQTB20 in such cases.

#### [2-slot type] (Not applicable to Mitsubishi Electric Q series large type base unit (Q□□BL))

	New Satellite JW Series	MELSEC-Q series	Conversion adapter				
Input/Output	module model	module model	Model	Sha	pe	No. of input/output	Page
	before replacement	after replacement	iviodei	New Satellite JW Series	MELSEC-Q series	points	
Input	JW-31N	QX10 x 2	ERNT-1JQ31N34S	Terminal block	Terminal block		5-10
Output	JW-34S	QY10 x 2	ENN1-13Q31N343			32 points	3-10
	JW-33S	QY22 x 2	ERNT-1JQ33S	(38 points)	(18 points) x 2		5-11

#### Universal conversion adapter (\*Requires rewiring. For details, refer to page 7-1 in this catalog.)

Input/output modules and analog/high-speed counter modules in the table below do not support the use of a conversion adapter. These modules, however, can be replaced by using a universal conversion adapter even though rewiring is required.

Check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

#### For Input/Output Modules

Innut/Output	New Satellite JW Series module model			MELSEC-Q series module model				Universal conversion
Input/Output	Model	Specifications	No. of points	Model	Specifications	No. of points	No. of required modules	adapter
Input	JW-13N	200-240VAC	16 points	QX28	100 to 240VAC	8 points	2 modules	(*9)
Output	JW-35S	12/24VDC source type	32 points	QY81P	12/24VDC source type	32 points	1 modules	(*9)

<sup>\*9:</sup> The universal conversion adapter (refer to page 7-5) can be used for replacement.

#### For Analog/High-Speed Counter Modules

Input/Output -	New Satellite JW Series module model			MELSEC-Q series module model				Universal conversion
input Output	Model	Specifications	Number of channels	Model	Specifications	Number of channels	No. of required modules	adapter
Analog input	JW-8AD	-10 to 10VDC, -20 to 20mADC 14-bit signed binary	8	Q68AD-G	-10 to 0 to +10VDC, 0 to 20mADC 16-bit signed binary	8	1 module	(*10)
Analog output	JW-2DA	-10 to 10VDC, -20 to 20mADC 11-bit signed binary	2	Q62DAN	-10 to +10VDC, 0 to 20mADC 16-bit signed binary	2	1 module	(*10)
High-speed counter input	JW-2HC	50/20/15/8kpps 24-bit binary	2	QD62	200/100/10kpps 32-bit binary	2	1 module	(*10)

<sup>\*10:</sup> The universal conversion adapter (refer to page 7-5) can be used for replacement.

<sup>\*2:</sup> Two conversion adapters are required to replace the JW-62SC.

#### Conversion adapter support flange (required)

The same support flange used to replace MELSEC-A series with MELSEC-Q series is used.

A conversion adapter support flange secures the bottom of a conversion adapter. One support flange is required per base unit when a conversion adapter is used.

#### **Note**

For panel surface installation, drilling screw holes (M4 screw, 2 locations) is required.

Note that drilling holes is not required when a base adapter is used.

Conversion adapter support flange model	Specifications	Page
ERNT-AQF12	12-slot conversion adapter support flange	
ERNT-AQF8	8-slot conversion adapter support flange	5-12
ERNT-AQF5	5-slot conversion adapter support flange	3-12
ERNT-AQF3	3-slot conversion adapter support flange	

#### Base adapter

The same base adapter used to replace MELSEC-A series with MELSEC-Q series is used.

Both the MELSEC-Q series base unit and the conversion adapter support flange can be installed on the base adapter without drilling screw holes.

For the base unit models marked with \*1 to \*5, two or more base adapter models are applicable.

Two additional mounting holes (M5 screw) and four M5 screws need to be prepared by the user to install the base adapter to the control panel. (Additional mounting holes are not required if the mounting dimensions are the same before and after replacement and the existing four mounting holes can be used.)

	Mountable product						Product dimensions	
Base adapter model	MELSEC-Q series base unit					Conversion adapter	Width x Height	Page
	12 slots	8 slots	5 slots	3 slots	2 slots	support flange	(mm)	
ERNT-AQB38	Q312B					ERNT-AQF12, ERNT-AQF8	480 × 240	
ENNI-AQD30		Q38B (*1)				ERNT-AQF8	460 x 240	
ERNT-AQB35		Q38B (*1)				ERNT-AQF8, ERNT-AQF5	382 × 240	
ERINI-AQB33			Q35B			ERNT-AQF5	362 × 240	
ERNT-AQB32				Q33B		ERNT-AQF3	247 × 240	
ERNT-AQB68	Q612B					ERNT-AQF12, ERNT-AQF8	466 × 240	
ERINI-AQD00		Q68B (*2)				ERNT-AQF8	400 × 240	- 4-
		Q68B (*2)				ERNT-AQF8, ERNT-AQF5		5-15
ERNT-AQB65			Q65B (*3) Q55B (*4)			ERNT-AQF5	352 × 240	
ERNT-AQB62				Q63B	Q52B (*5)	ERNT-AQF3	238 × 240	
ERNT-AQB58		Q68B (*2)				ERNT-AQF8	411 × 240	
ERNT-AQB55			Q65B (*3) Q55B (*4)			ERNT-AQF5	297 × 240	
ERNT-AQB52					Q52B (*5)	ERNT-AQF3	183 × 240	

### **Conversion Adapter**

#### **Specifications**

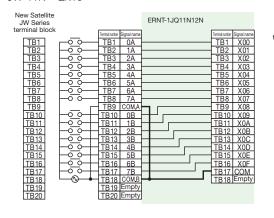
#### For Input/Output Modules

**1-slot type** (Applicable to MELSEC-Q series large type base units (Q  $\square$  BL) as well)

#### (1) ERNT-1JQ11N12N Terminal block (20P)→Terminal block (18P)

Conversion adapter model	New Satellite JW Series module model	No. of input points	MELSEC-Q series module model
	JW-11N	16 points	QX10
ERNT-1JQ11N12N	JW-12N	16 points	QX40 QX40-S1 QX70

#### JW-11N→QX10

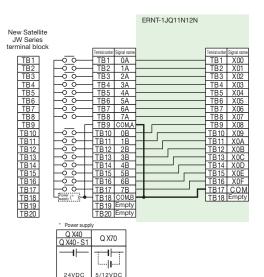


#### [Specification comparison chart]

C-Q series		
X10		
points		
AC 50/60Hz		
(100VAC 60Hz)		
(100VAC 50Hz)		
Approx. 12kΩ (60Hz)		
Approx. 15kΩ (50Hz)		
Max. 200mA 1ms (132VAC)		
C / 5mA		
C / 1.7mA		
or less		
or less		
pler isolation		
per common		
erminal block		

- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used separately, a wiring change is required.
  - areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices

#### JW-12N→QX40/QX40-S1/QX70



ser termina	
TB2	TB1
TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17

MELSEC-Q

MELSEC-Q

Model		New Satellite JW Series	MELSEC-Q series				
		JW-12N	QX40	QX40-S1	QX70		
		Positive common/negative	Positive	Positive	Positive common/negative		
Specifica	tions	common shared type	common type	common type	common shared type		
No. of inp	ut points	16 points	16 points	16 points	16 points		
Rated inpu	ut voltage	12/24VDC 24VAC 50/60Hz	24VDC	24VDC	5/12VDC		
Rated inp	ut current	Approx. 8.4mA (24VDC/VAC) Approx.4mA (12VDC)	Approx. 4mA Approx. 6m.		Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)		
Input imp	edance	Approx. 2.9kΩ	Approx. 5.6kΩ	Approx. 3.9kΩ	Approx. 3.3kΩ		
Inrush cui	rrent	-	-	-	-		
Operating voltage/	ON	10V / 3mA	19V / 3mA	19V / 4mA	3.5V / 1mA		
current	OFF	4.7V / 1.5mA	11V / 1.7mA	11V / 1.7mA	1V / 0.1mA		
Response	OFF→ON	25ms or less	1/5/10/20 /70ms or less	0.1/0.2/0.4/0.6 /1ms or less	1/5/10/20 /70ms or less		
Time	ON→OFF	25ms or less	1/5/10/20 /70ms or less	0.1/0.2/0.4/0.6 /1ms or less	1/5/10/20 /70ms or less		
Isolation r	nethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation		
Wiring method	for common	8 points per common	16 points per common	16 points per common	16 points per common		
External in	nterface	20-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block		

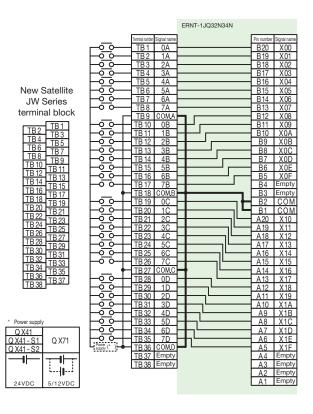
- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used separately, a wiring change is required.

  For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy
  - 2. For 

    ☐ the specifications of devices and equipment to be connected.
  - For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices
  - 4. Consider rewiring to the QX80 or QX80H if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB20 in such cases.
  - 5. Consider rewiring to the QX40H or QX80H if the existing module uses a different power supply for each 8-point group. Also consider using the ERNT-AQTB20 in such cases

#### (2) ERNT-1JQ32N34N Terminal block (38P)→Connector (40P)

Conversion adapter model	New Satellite JW Series module model	No. of input points	MELSEC-Q series module model
	JW-32N	32 points	QX41 QX41-S2 QX71
ERNT-1JQ32N34N	JW-34N	32 points	QX41 QX41-S1 QX41-S2 QX71



MELSEC-Q series connector 

	Model	New Satellit	New Satellite JW Series		MELSEC-Q series					
Specificat	tions	JW-32N Positive common/negative common shared type	JW-34N Positive common/negative common shared type	QX41 Positive common type	QX41-S1 Positive common type	QX41-S2 Positive common type	QX71 Positive common/negative common shared type			
	out points	32 points	32 points	32 points	32 points	32 points	32 points			
Rated inpo	ut voltage	12/24VDC 24VAC 50/60Hz	12/24VDC	24VDC	24VDC	24VDC	5/12VDC			
Rated input current		Approx. 8.4mA (24VDC/AC) Approx. 4mA (12VDC)	Approx. 8.4mA (24VDC) Approx. 4mA (12VDC)	Approx. 4mA	Approx. 4mA	Approx. 6mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)			
Input imp	edance	Approx. 2.9kΩ	Approx. 2.9kΩ	Approx. 5.6kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ	Approx. 3.3kΩ			
Inrush cu	rrent	_	_	_	-	-	_			
Operating voltage/	ON	10V / 3mA	10V / 3mA	19V / 3mA	19V / 3mA	15V / 3mA	3.5V / 1mA			
current	OFF	4.7V / 1.5mA	4.7V / 1.5mA	11V / 1.7mA	9.5V / 1.5mA	5V / 1.7mA	1V / 0.1mA			
Response	OFF→ON	25ms or less	0.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less			
time	ON→OFF	25ms or less	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less			
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation			
Wiring method	d for common	8 points per common	8 points per common	32 points per common	32 points per common	32 points per common	32 points per common			
External i	interface	38-point terminal block	38-point terminal block	40-pin connector	40-pin connector	40-pin connector	40-pin connector			

- Notes 1. In a case where the number of points per common changes from 8 (four circuits) to 32 and the terminal numbers TB9, TB18, TB27, and TB36 on the New Satellite JW Series side are used separately, a wiring change is required.
  - 2. For mareas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

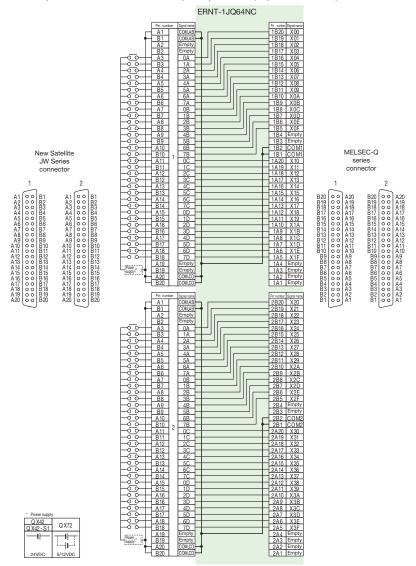
  - 4. Consider rewiring to the QX81 or QX81-S2 if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB38-E in such cases.

    5. Consider rewiring to two QX40Hs or two QX80Hs if the existing module uses different power supplies for each 8-point group. Also consider using the ERNT-AQTB20

#### (3) ERNT-1JQ64NC connector (40P) × 2→Connector (40P) × 2

Campanaian adamtan madal	New SatelliteJW Series No. of		MELSEC-Q series
Conversion adapter model	module model	input points	module model
ERNT-1JQ64NC	JW-64NC	64 points	QX42 QX42-S1
ENIVI-13Q04NC	JW-34NC	32 points *1	QX42-51 QX72

<sup>\*1:</sup> JW-34NC is replaced with the MELSEC-Q series 64-point input module. (32 points are not used)



Model		New Satellit	e JW Series	MELSEC-Q series		
Specifications		JW-64NC Positive common/negative common shared type	JW-34NC Positive common/negative common shared type	QX42 Positive common type	QX42-S1 Positive common type	QX72 Positive common/negative common shared type
No. of inp	out points	64 points	32 points	64 points	64 points	64 points
Rated inp	out voltage	12/24VDC	12/24VDC	24VDC	24VDC	5/12VDC
Rated input current		Approx. 7.5mA (24VDC) Approx. 3.5mA (12VDC)	Approx. 7.5mA (24VDC) Approx. 3.5mA (12VDC)	Approx. 4mA	Approx. 4mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)
Input imp	edance	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 5.6kΩ	Approx. 5.6kΩ	Approx. 3.3kΩ
Inrush cu	ırrent	-	-	-	_	-
Operating	ON	10.5V / 3.2mA	10.5V / 3.2mA	19V / 3mA	19V / 3mA	3.5V / 1mA
voltage/ current	OFF	5V / 1.5mA	5V / 1.5mA	11V / 1.7mA	9.5V / 1.5mA	1V / 0.1mA
Response	OFF→ON	0.5ms or less	0.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less
time ON→OFF		1.5ms or less	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring metho	d for common	16 points per common	16 points per common	32 points per common	32 points per common	32 points per common
External	interface	40-pin connector x 2	40-pin connector	40-pin connector x 2	40-pin connector x 2	40-pin connector x 2

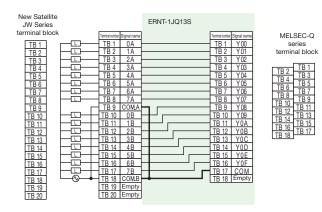
- Notes 1. In a case where the number of points per common changes from 16 (four circuits) to 32 (two circuits) and the pin numbers A1/B1 and A20/B20 of 1 and pin numbers A1/B1 and A20/B20 of 2 on the New Satellite JW Series side are used separately, a wiring change is required. 2. JW-34NC is replaced with the MELSEC-Q series 64-point input module. (32 points are not used)

  - areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 4. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices
  - 5. Consider any of the following solutions if the existing module uses the 24VDC negative common.

  - 1. Rewiring to the QX8 2. Rewiring to two QX81s and two ERNT-AQTB38-Es
- 2)JW-34NC 1. Rewiring to one QX81 and one ERNT-AQTB38-E

#### (4) ERNT-1JQ13S Terminal block (20P)→Terminal block (18P)

Conversion adapter model	module model out		MELSEC-Q series module model
ERNT-1JQ13S	JW-13S	16 points	QY22



#### [Specification comparison chart]

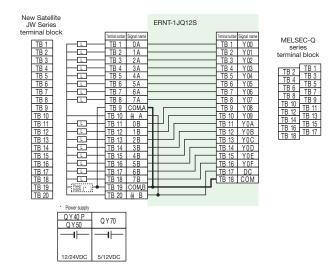
		-		
	Model	New Satellite JW Series	MELSEC-Q series	
		JW-13S	QY22	
Specific	ations	(Triac output)	(Triac output)	
No. of ou	utput points	16 points	16 points	
Rated lo	ad voltage	110-240VAC 50/60Hz	100-240VAC 50/60Hz	
Maximum	load current	2A/point 4A/common	0.6A/point 4.8A/common	
Minimum	load current	10mA	25mA	
Maximum	inrush current	6A 100ms or less	20A, one cycle or less	
Leakage current at OFF		1.5mA or less (120VAC 60Hz)	1.5mA or less (120VAC 60Hz)	
		3mA or less (240VAC 60Hz)	3mA or less (240VAC 60Hz)	
Voltage dro	op at ON	2V or less (2A)	1.5V or less	
Response	OFF→ON	1ms or less	1ms + 0.5 cycle or less	
time	ON→OFF	1ms + 0.5 cycle or less	1ms + 0.5 cycle or less	
Surge suppressor		CR absorber/varistor	CR absorber	
Fuse		4A (not replaceable)	None	
Isolation method		Photocoupler isolation	Photocoupler isolation	
Wiring meth	od for common	8 points per common	16 points per common	
External	Interface	20-point terminal block	18-point terminal block	

- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used separately, a wiring change is required.

  For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy
  - 2. For □ the specifications of devices and equipment to be connected.
  - 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### (5) ERNT-1JQ12S Terminal block (20P)→Terminal block (18P)

Conversion adapter model	New Satellite JW Series module model	No. of output points	MELSEC-Q series module model
ERNT-1JQ12S	JW-12S	16 points	QY40P QY50 QY70



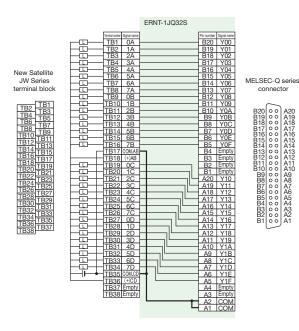
		New Satellite JW Series	MELSEC-Q series			
		JW-12S	QY40P	QY50	QY70	
Specifica	tions	Sink type	Sink type	Sink type	Sink type	
No. of out	put points	16 points	16 points	16 points	16 points	
Rated loa	d voltage	5/12/24VDC	12/24VDC	12/24VDC	5/12VDC	
Maximum I	oad current	1A/point	0.1A/point	0.5A/point	16mA/point	
		8A/common	1.6A/common	4A/common	256mA/common	
Maximum in	rush current	4A, 100ms	0.7A, 10ms	4A, 10ms	40mA, 10ms	
Leakage cu	rrent at OFF	0.2mA or less	0.1mA or less	0.1mA or less	_	
Voltago d	rop at ON	1VDC	0.2VDC	0.3VDC	Vol: 0.3VDC	
voitage u	iop at Oiv	(MAX.) 1A	(MAX.) 0.1A	(MAX.) 0.5A	VOL: U.3VDC	
Response	OFF→ON	1ms or less	1ms or less	1ms or less	0.5ms or less	
time	ON→OFF	1ms or less	1ms or less	1ms or less	0.5ms or less	
timo	UN→UFF	(resistive load)	(resistive load)	(resistive load)	(resistive load)	
Surgo cui	oproccor	Zener	Zener	Zener	None	
Surge suppressor		diode	diode	diode	None	
Fuse		8A	None	6.7A	1.6A	
		(not replaceable)	None	(not replaceable)	(not replaceable)	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Wiring metho	d for common	8 points per common	16 points per common	16 points per common	16 points per common	
External i	nterface	20-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block	

- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used separately, a wiring change is required.
  - areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

    3. For detailed specifications and general specifications not described in the
  - specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite  ${\sf JW}$ Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### (6) ERNT-1JQ32S Terminal block (38P) → Connector (40P)

Conversion adapter model	New Satellite JW Series module model	No. of output points	MELSEC-Q series module model
FRNT-1.IQ32S	IW-32S	32 points	OV/1H



#### [Specification comparison chart]

	Model	New Satellite JW Series	MELSEC-Q series
	_	JW-32S	QY41H
Specificat	tions	Sink type	Sink type
No. of outp	out points	32 points	32 points
Rated loa	d voltage	5/12/24VDC	5/12/24VDC
Maximum lo	ad current	1A/point 8A/common	0.2A/point 2A/common
Minimum Io	ad current	_	_
Maximum in	rush current	4A, 100ms or less	0.7A 10ms or less
Leakage current at OFF		0.2mA or less	0.1mA or less
Voltage drop at ON		1VDC (MAX.) 1A	0.2VDC (MAX.) 0.1A
Response	OFF→ON	1ms or less	2µs or less
time ON→OFF		1ms or less (resistive load)	2µs or less (resistive load)
Surge sup	pressor	Zener diode	Zener diode
Fuse		8A (not replaceable)	None
Isolation method		Photocoupler isolation	Photocoupler isolation
Wiring method	for common	16 points per common	32 points per common
External is	nterface	38-point terminal block	40-pin connector

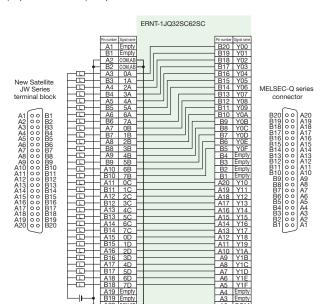
#### Notes

- In a case where the number of points per common changes from 16 (two circuits) to 32
  and the terminal numbers TB17 and TB35 on the New Satellite JW Series side are used
  separately, a wiring change is required.
- For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- Consider rewiring to the QY50 (0.5A, 16 points) or QY68A (2A, 8 points) if current capacity is required. Also consider using the ERNT-AQTB20 in such cases.

#### (7) ERNT-1JQ32SC62SC Connector (40P) → Connector (40P)

Conversion adapter model	New Satellite JW Series module model	No. of output points	MELSEC-Q series module model
ERNT-1JQ32SC62SC	JW-32SC	32 points	QY41H
ERNT-1JQ32SC62SC × 2	JW-62SC*1	64 points	QY41H × 2 modules

\*1: Two sets of the QY41H and the conversion adapter are required (32 points for each set) to replace the JW-62SC.



#### [Specification comparison chart]

	Model	New Satellite JW Series		MELSEC-Q series
`		JW-32SC	JW-62SC	QY41H
Specificat	ions	Sink type	Sink type	Sink type
No. of outp	out points	32 points	64 points	32 points
Rated load	d voltage	5/12/24VDC	5/12/24VDC	5/12/24VDC
Maximum Io	ad ourrant	0.3A/point	0.1A/point	0.2A/point
waximum io	ad current	4.8A/common	1.6A/common	2A/common
Maximum inrush current		1A 100ms or less	0.12A 100ms or less	0.7A 10ms or less
Leakage current at OFF		0.2mA or less	0.2mA or less 0.1mA or less	
Voltage dr	op at ON	1VDC (MAX.) 1 A	1.3VDC (MAX.) 0.1 A	0.2VDC (MAX.) 0.1A
Response	OFF→ON	1ms or less	1ms or less	2µs or less
time	ON→OFF	1ms or less (resistive load)	1ms or less (resistive load)	2μs or less (resistive load)
Surge suppressor		Zener diode	Zener diode	Zener diode
Fuse		None	None	None
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring method	for common	16 points per common	16 points per common	32 points per common
External in	nterface	40-pin connector	40-pin connector x 2	40-pin connector

#### Notes

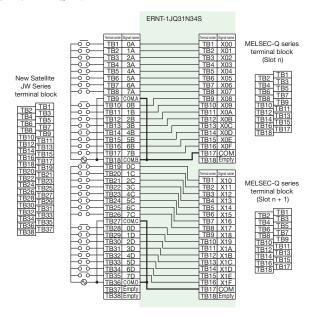
- In a case where the number of points per common changes from 16 (two circuits) to 32
  and the pin numbers A2/B2 and A20/B20 of 1 for the New Satellite JW Series are used
  separately, a wiring change is required.
- Two sets of the QY41H and the conversion adapter are required (32 points for each set) to replace the JW-62SC.
- For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 4. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### [2-slot type] (Not applicable to MELSEC-Q series large type base units (QuaBL).)

#### (1) ERNT-1JQ31N34S Terminal block (38P) $\rightarrow$ Terminal block (18P) x 2

Conversion adapter model	New Satellite JW Series module model	No. of input/ output points	MELSEC-Q series Mo. of required m	
ERNT-1JQ31N34S	JW-31N	32 points	QX10	2 modules
ERN I- IJQ3 IN345	JW-34S	32 points	QY10	2 modules

#### $JW-31N \rightarrow QX10$



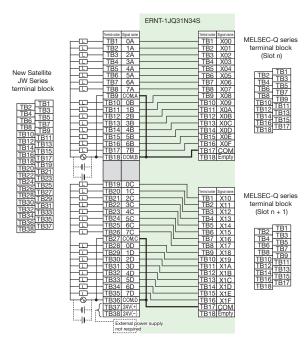
#### [Specification comparison chart]

[opecinication comparison chart]				
Model	New Satellite JW Series	MELSEC-Q series		
15	JW-31N	QX10		
ut points	32 points	16 points		
ıt voltage	100-120VAC 50/60Hz	100-120VAC 50/60Hz		
ıt ourront	Approx. 10mA (100VAC 60Hz)	Approx. 8mA (100VAC 60Hz)		
it current	Approx. 8.4mA (100VAC 50Hz)	Approx. 7mA (100VAC 50Hz)		
ndanaa	Approx. 10kΩ (60Hz)	Approx. 12kΩ (60Hz)		
euance	Approx. 12kΩ (50Hz)	Approx. 15kΩ (50Hz)		
rent	Max. 480mA 0.2ms (132VAC)	Max. 200mA 1ms (132VAC)		
ON	80VAC / 7mA	80VAC / 5mA		
OFF	30VAC / 3mA	30VAC / 1.7mA		
OFF→ON	25ms or less	15ms or less		
ON→OFF	25ms or less	20ms or less		
nethod	Photocoupler isolation	Photocoupler isolation		
for common	8 points per common	16 points per common		
nterface	38-point terminal block	18-point terminal block		
	Model  is  ut points  it voltage  it current  edance  rent  ON  OFF  OFF  OFF  ON	Model         New Satellite JW Series           JW-31N         32 points           at voltage         100-120VAC 50/60Hz           at current         Approx. 10mA (100VAC 60Hz)           Approx. 8.4mA (100VAC 50Hz)         Approx. 10kΩ (60Hz)           Approx. 12kΩ (50Hz)         Approx. 12kΩ (50Hz)           rent         Max. 480mA 0.2ms (132VAC)           ON         80VAC / 7mA           OFF         30VAC / 3mA           OFF→ON         25ms or less           nethod         Photocoupler isolation           for common         8 points per common		

#### Notes

- 1. In a case where the number of points per common changes from 8 (four circuits) to 16 (two circuits) and the terminal numbers TB9/TB18 and TB27/TB36 on the New Satellite JW Series side are used separately, a wiring change is required.
- 2. For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### JW-34S → QY10



#### [Specification comparison chart]

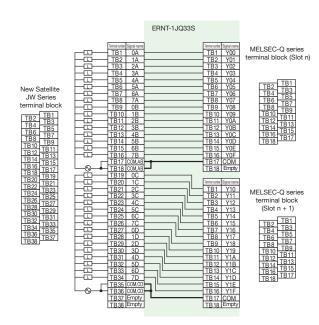
[ebeementer companion entity]											
	Model	New Satellite JW Series	MELSEC-Q series								
Specification	15	JW-34S	QY10								
No. of outp	out points	32 points	16 points								
Rated load	d voltage	30VDC / 264VAC	24VDC / 240VAC								
Maximum Io		2A/point	2A/point								
Maximum ic	bad current	5A/common	8A/common								
Minimum lo	ad current	1mA (5VDC)	1mA (5VDC)								
Maximum in	rush current	_	_								
Leakage cur	rent at OFF	_	_								
Voltage dr	op at ON	_	_								
Response	OFF→ON	10ms or less	10ms or less								
time	ON→OFF	10ms or less	12ms or less								
Surge sup	pressor	None	None								
Fuse		None	None								
Isolation r	nethod	Relay isolation	Relay isolation								
Wiring method	for common	8 points per common	16 points per common								
External in	nterface	38-point terminal block	18-point terminal block								

#### Notes

- 1. In a case where the number of points per common changes from 8 (four circuits) to 16 (two circuits) and the terminal numbers TB9/TB18 and TB27/TB36 on the New Satellite JW Series side are used separately, a wiring change is required.
- The external power supply connected to terminal numbers TB37 and TB38 on the New Satellite JW Series side is no longer required. Such devices may remain connected though as the conversion adapter is not wired internally for this connection.
- For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 4. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### (2) ERNT-1JQ33S Terminal block (38P)→Terminal block (18P) × 2

Conversion adapter model	New Satellite JW Series module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-1JQ33S	JW-33S	32 points	QY22	2 modules



#### [Specification comparison chart]

	Model	New Satellite JW Series	MELSEC-Q series				
		JW-33S	QY22				
Specifica	ations	Triac output	Triac output				
No. of ou	tput points	32 points	16 points				
Rated lo	ad voltage	110-240VAC 50/60Hz	100-240VAC 50/60Hz				
Maximum I	oad current	1A/point 4A/common	0.6A/point 4.8A/common				
Minimum Id	ad current	10mA	25mA				
Maximum i	nrush current	6A 100ms or less	20A, one cycle or less				
Leakage	current	1.5mA or less (120VAC 60Hz)	1.5mA or less (120VAC 60Hz)				
at OFF		3mA or less (240VAC 60Hz)	3mA or less (240VAC 60Hz)				
Voltage o	lrop at ON	2V or less (1A)	1.5V or less				
Response	OFF→ON	1ms or less	1ms + 0.5 cycle or less				
time	ON→OFF	1ms + 0.5 cycle or less	1ms + 0.5 cycle or less				
Surge su	ppressor	CR absorber/varistor	CR absorber				
Fuse		4A (not replaceable)	None				
Isolation	method	Photocoupler isolation	Photocoupler isolation				
Wiring metho	od for common	16 points per common	16 points per common				
External	interface	38-point terminal block	18-point terminal block				

Notes 1.For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

2. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### **Conversion Adapter Support Flange (Required)**

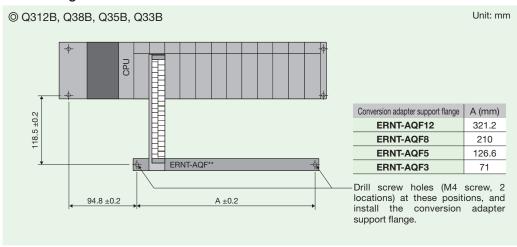
#### **Specifications**

A conversion adapter support flange secures the bottom of a conversion adapter. This is required when a conversion adapter is used. One support flange is required per base unit.

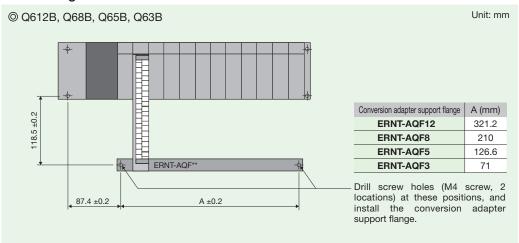
The same support flange used to replace MELSEC-A series with MELSEC-Q series is used.

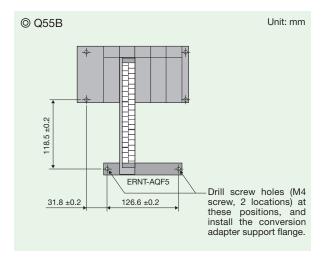
Conversion adapter support flange model	Specifications
ERNT-AQF12	Conversion adapter support flange for 12 slots of MELSEC-Q series modules
ERNT-AQF8	Conversion adapter support flange for 8 slots of MELSEC-Q series modules
ERNT-AQF5	Conversion adapter support flange for 5 slots of MELSEC-Q series modules
ERNT-AQF3	Conversion adapter support flange for 3 slots of MELSEC-Q series modules

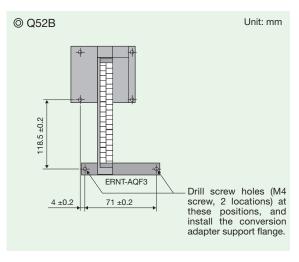
#### When using a main base unit



#### When using an extension base unit







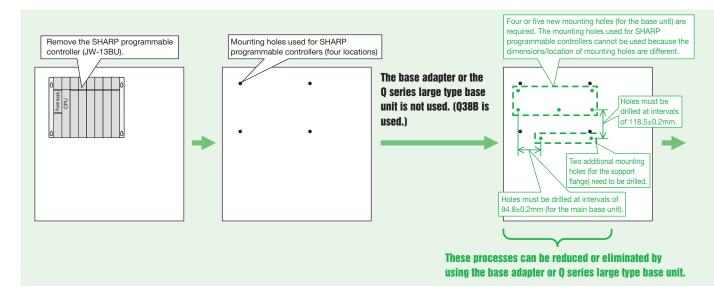


# Upgrading Using the Base Adapter or the Q Series Large Type Base Unit (Manufactured by Mitsubishi Electric)

Using the base adapter or the Q series large type base unit eliminates the need to drill mounting holes and determine installation positioning of the support flange.

## When the base adapter or the Q series large type base unit is not used

Six or seven new mounting holes are required and the installation positions of the Q series base unit and the support flange need to be determined.

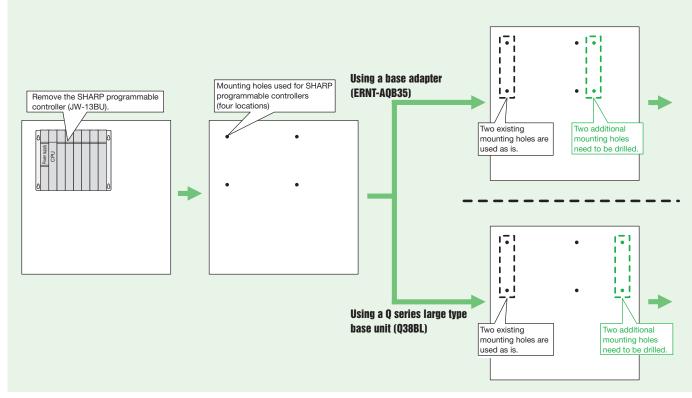


# When the base adapter or the Q series large type base unit (the same one used to replace MELSEC-A series large type with MELSEC-Q series) is used

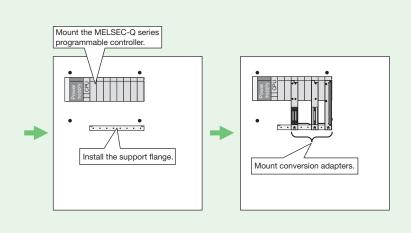
Only a maximum of 2 holes must be drilled due to the base adapter or Q series large type base unit having the same mounting hole height dimensions as the JW series base unit.

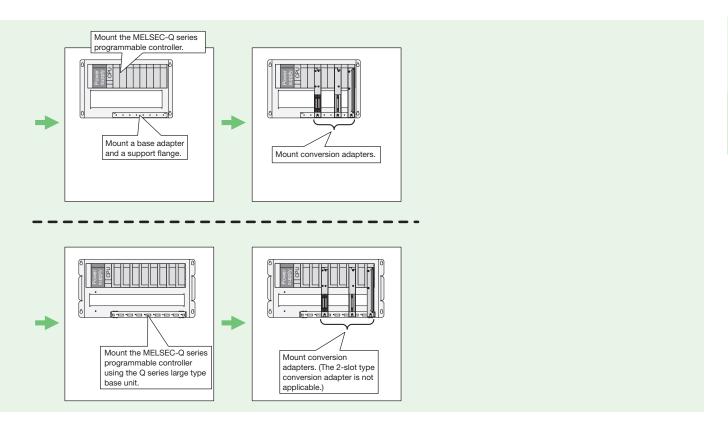
(Additional mounting holes are not required if the mounting dimensions before and after replacement are the same and the existing four mounting holes can be used.)

The following figure shows the installation when two existing mounting holes on the left are used.



For details, refer to "Mounting Dimensions" on page 5-16, "Comparison of External Dimensions and Mounting Hole Dimensions for Replacements" on page 5-17, and "Slot Positions" on page 5-19.





## **Base Adapter**

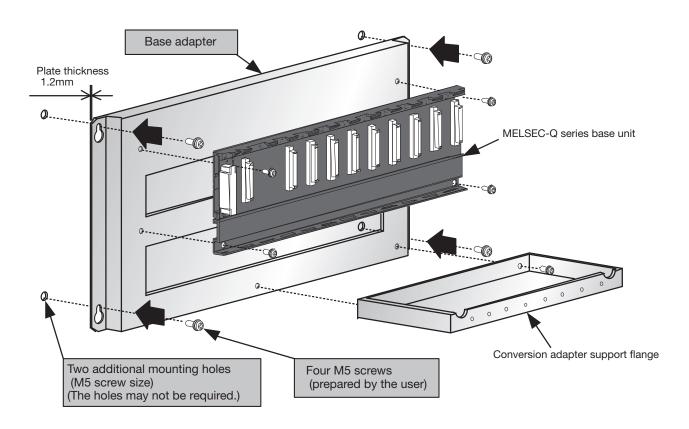
#### **Specifications**

Both the MELSEC-Q series base unit and the conversion adapter support flange can be installed on the base adapter without drilling screw holes.

The same base adapter used to replace MELSEC-A series with MELSEC-Q series is used.

#### Note

Two additional mounting holes (M5 screw) and four M5 screws need to be prepared by the user to install the base adapter to the control panel.
 (Additional mounting holes are not required if the mounting dimensions are the same before and after replacement and the existing four mounting holes can be used.)



For the base unit models marked with \*1 to \*5, two or more base adapter models are applicable. Select the most suitable base adapter according to the product dimensions.

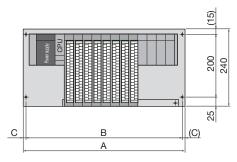
		Product dimensions						
Base adapter model		MELS	SEC-Q series bas		Conversion adapter	Width x Height		
	12 slots	8 slots	5 slots	3 slots	2 slots	support flange	(mm)	
ERNT-AQB38	Q312B	Q38B (*1)		 		ERNT-AQF12, ERNT-AQF8 ERNT-AQF8	480×240	
ERNT-AQB35		Q38B (*1)	Q35B	 		ERNT-AQF8, ERNT-AQF5 ERNT-AQF5	382×240	
ERNT-AQB32		1		Q33B		ERNT-AQF3	247×240	
ERNT-AQB68	Q612B	Q68B (*2)		 	 	ERNT-AQF12, ERNT-AQF8 ERNT-AQF8	466×240	
ERNT-AQB65		Q68B (*2)	Q65B (*3) Q55B (*4)		 	ERNT-AQF8, ERNT-AQF5 ERNT-AQF5	352×240	
ERNT-AQB62		1		Q63B	Q52B (*5)	ERNT-AQF3	238×240	
ERNT-AQB58		Q68B (*2)		1	1	ERNT-AQF8	411×240	
ERNT-AQB55			Q65B (*3) Q55B (*4)			ERNT-AQF5	297×240	
ERNT-AQB52		1		1	Q52B (*5)	ERNT-AQF3	183×240	

Unit: mm

#### **Mounting Dimensions**

- The slot positions of modules differ between the New Satellite JW Series and the MELSEC-Q series. After replacement, adjust the length of cables.
- The height is lower than that of the New Satellite JW Series modules. (For the width and depth, refer to "Usage Precautions" on page 5-24.)
- Two of the four mounting holes of the base adapter and the Q series large type base unit are the same size as those of the New Satellite JW Series base unit, and therefore only two additional mounting holes need to be drilled on the control panel. (Additional mounting holes are not required if the mounting dimensions are the same before and after replacement and the existing four mounting holes can be used.)

#### • Base adapter + MELSEC-Q series base unit

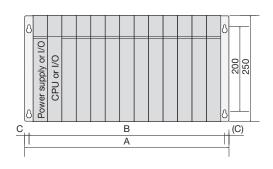


Q series large type base unit	(10)
	200 200 240
C , , , B	_ '
Α	

Base adapter model	Description	Α	В	С	Mounting screw hole size
ERNT-AQB38		480	460	10	
ERNT-AQB35	Main base unit	382	362	10	
ERNT-AQB32		247	227	10	
ERNT-AQB68		466	446	10	M5
ERNT-AQB65	Extension base unit with power supply	352	332	10	IVIO
ERNT-AQB62	with power supply	238	218	10	
ERNT-AQB55	Extension base unit	297	277	10	
ERNT-AQB52	without power supply	183	163	10	

Q series large type base unit model	Description	В	С	Mounting screw hole size	
Q38BL	Main base unit	480	460	10	
Q35BL	Main base unit	382	362	10	
Q68BL	Extension base unit	466	446	10	M5
Q65BL	with power supply	352	332	10	IVIO
Q55BL	Extension base unit without power supply	297	277	10	

#### • (Reference) New Satellite JW Series base unit



JW series base unit model	Description	С	Mounting screw hole size			
JW-13BU		480	460	10		
JW-8BU	Main base unit /	310	290	10	M5	
JW-6BU	base unit	242	222	10		
JW-4BU		174	154	10		

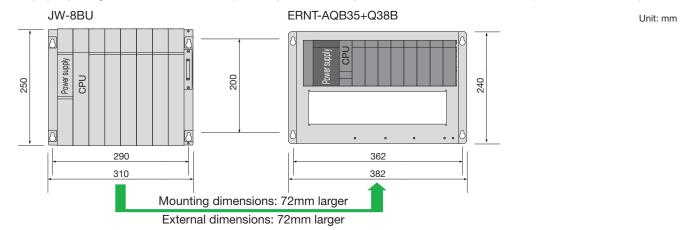
#### Comparison of External Dimensions and Mounting Hole Dimensions for Replacements

Use the following tables to check the differences of external dimensions and mounting hole dimensions before and after replacement.

#### **Notes**

- " 🛦 " indicates that the dimensions will be larger after replacement as shown in the example below. Reconsider the installation
- If there are not enough mounting slots, use an extension base unit.
- The JW BU within the New Satellite JW Series is a shared main/extension base unit. Note that the number of slots varies between models that have/do not have built-in power supplies and/or CPUs.
- If your JW series base unit model is not listed here, check the number of slots, external dimensions, mounting dimensions, and other specifications and then select the optimal base adapter or Q series large type base unit.

Example) Replacing New Satellite JW Series (JW-8BU) with base adapter + MELSEC-Q series base unit (ERNT-AQB35+Q38B)



#### When using a main base unit

1. Replacing with MELSEC-Q series base unit or MELSEC-Q series base unit + base adapter

©: Same, ○: JW series is larger, ▲: JW series is smalle																
JW series	base un	iit		MEL	SEC-Q se	eries base	unit				Base	adapter			Mauntina	
Model power number of				Includes	es Maximum r number of		Compa SEC-Q se	ries - JW	,	Model	Comparison*2 (base adapter - JW series)			,	Mounting Conversion adapter	Remarks
···odo	supply	slots	, model	supply	slots				Dimensions			limensions			support flange	
						Width	Height	Width	Height		Width	Height	Width	Height		
JW-13BU	Yes	11	Q312B	Yes	12	(-41)	(-152)	(-41)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF12	Drill mounting holes in panel surface not required when using the base adapter
JW-13BO 1es	''	Q38B	Yes	8	(-152)	(-152)	(-152)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF8	Drill mounting holes in panel surface not required when using the base adapter	
			Q312B	Yes	12	(129)	(-152)	(129)	(-120)	ERNT-AQB38	(170)	(-10)	(170)	0	ERNT-AQF12	·Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JW-8BU	Yes	6	Q38B	Yes	8	(18)	(-152)	(18)	(-120)	ERNT-AQB35	(72)	(-10)	(72)	0	ERNT-AQF8	·Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q35B	Yes	5	(-65)	(-152)	(-65.6)	(-120)	ERNT-AQB35	(72)	(-10)	(72)	0	ERNT-AQF5	-Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q312B	Yes	12	(197)	(-152)	(197)	(-120)	ERNT-AQB38	(238)	(-10)	(238)	0	ERNT-AQF12	·Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JW-6BU	Yes	4	Q38B	Yes	8	(86)	(-152)	(86)	(-120)	ERNT-AQB35	(140)	(-10)	(140)	0	ERNT-AQF8	·Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q35B	Yes	5	(3)	(-152)	(2.4)	(-120)	ERNT-AQB35	(140)	(-10)	(140)	0	ERNT-AQF5	-Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q33B	Yes	3	(-53)	(-152)	(-53)	(-120)	ERNT-AQB32	(5)	(-10)	(5)	0	ERNT-AQF3	-Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JW-4BU	Yes	2	Q35B	Yes	5	(71)	(-152)	(70.4)	(-120)	ERNT-AQB35	(208)	(-10)	(208)	0	ERNT-AQF5	-Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
	162		Q33B	Yes	3	(15)	(-152)	(15)	(-120)	ERNT-AQB32	(73)	(-10)	(73)	0	ERNT-AQF3	·Drill mounting holes in panel surface required except for 2 vertical holes when using the base adaptera

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the MELSEC-Q series compatible modules and JW series modules. \*2: Values in parentheses indicate differences in dimensions (unit: mm) between the base adapter and JW series modules

2. Replacing with the MELSEC-Q series large type base unit

2. Replacing with the MELSEO-Q series large type base unit												
								(	: Same	, O: JW	series is larger, ▲: JW series is smaller	
JW:	series b	oase ur	nit		MELSE	C-Q serie	es large ty	pe base	unit			
Model			Maximum number of	Model	Includes	Maximum number of	(IVIELS	SEC-Q se	arison*1 ries - JW	series)	Remarks	
		supply	slots	Wiodo.	supply	slots	External d	imensions	Mounting	Dimensions		
							Width	Height	Width	Height		
JW-13E	3U	Yes	11	Q38BL	Yes	8	0	(-10)	0	0	No large base with at least 9 slots     Maximum of 8 slots, so insufficient by 3 slots     Drill mounting holes in panel surface not required	
		V	6	Q38BL	Yes	8	(170)	(-10)	(170)	0	·Drill mounting holes in panel surface required except for 2 vertical holes	
JW-8Bl		Yes	ь	Q35BL	Yes	5	(72)	(-10)	(72)	0	·Drill mounting holes in panel surface required except for 2 vertical holes	
JW-6Bl	J	Yes	4	Q35BL	Yes	5	(140)	(-10)	(140)	0	·Drill mounting holes in panel surface required except for 2 vertical holes	
JW-4Bl	J	Yes	2	Q35BL	Yes	5	(208)	(-10)	(208)	0	Drill mounting holes in panel surface required except for 2 vertical holes	

When using an extension base unit

1. Replacing with MELSEC-Q series base unit or MELSEC-Q series base unit + base adapter

JW series	base ur	it		MEL	SEC-Q se	eries base	unit				Base a	dapter		(O:		eries is larger, ▲: JW series is smaller
	Includes	Maximum		Includes	Maximum	(MELS	Compa SEC-Q se	arison*1 ries - JW	series)		(bas	Compa e adapter		ries)	Mounting Conversion	Remarks
Model	power supply	number of slots	Model	power supply	number of slots	External d	imensions	Mounting I	Dimensions	Model	External dimensions Mounting Dimensions			Dimensions	adapter support flange	· io.na.ne
			00100	.,	40	Width	Height	Width	Height		Width	Height	Width	Height		
	Yes	12	Q612B	Yes	12	(-41)	(-152)	(-43)	(-120)	ERNT-AQB68	(-14)	(-10)	(-14)	0	ERNT-AQF12	
JW-13BU			Q68B	Yes	8	(-152)	(-152)	(-154)	(-120)	ERNT-AQB65	(-128)	(-10)	(-128)	0	ERNT-AQF12	There is no base unit without power supply having 6 slots or more.     Maximum of 12 slots, so insufficient by 1 slot
	No	13	Q612B	Yes	12	(-41)	(-152)	(-43)	(-120)	ERNT-AQB68	(-14)	(-10)	(-14)	0	ERNT-AQF12	-There is no base unit without power supply having 6 slots or moreMaximum of 12 slots, so insufficient by 1 slot
	Yes	7	Q612B	Yes	12	(129)	(-152)	(127)	(-120)	ERNT-AQB68	(156)	(-10)	(156)	0	ERNT-AQF12	
JW-8BU	163	,	Q68B	Yes	8	(18)	(-152)	(16)	(-120)	ERNT-AQB65	(42)	(-10)	(42)	0	ERNT-AQF8	
	No	8	Q612B	Yes	12	(129)	(-152)	(127)	(-120)	ERNT-AQB68	(156)	(-10)	(156)	0	ERNT-AQF12	-There is no base unit without power supply having 6 slots or more.
			Q68B	Yes	8	(18)	(-152)	(16)	(-120)	ERNT-AQB65	(42)	(-10)	(42)	0	ERNT-AQF8	-There is no base unit without power supply having 6 slots or more.
			Q612B	Yes	12	(197)	(-152)	(195)	(-120)	ERNT-AQB68	(224)	(-10)	(224)	0	ERNT-AQF12	
	Yes	5	Q68B	Yes	8	(86)	(-152)	(84)	(-120)	ERNT-AQB65	(110)	(-10)	(110)	0	ERNT-AQF8	
	103		Q65B	Yes	5	(3)	(-152)	(0.4)	(-120)	ERNT-AQB55	(55)	(-10)	(55)	0	ERNT-AQF5	
			Q55B	No	5	(-53)	(-152)	(-55)	(-120)	ERNT-AQB55	(55)	(-10)	(55)	0	ERNT-AQF5	
JW-6BU			Q612B	Yes	12	(197)	(-152)	(195)	(-120)	ERNT-AQB68	(224)	(-10)	(224)	0	ERNT-AQF12	-There is no base unit without power supply having 6 slots or more.
	No	6	Q68B	Yes	8	(86)	(-152)	(84)	(-120)	ERNT-AQB65	(110)	(-10)	(110)	0	ERNT-AQF8	-There is no base unit without power supply having 6 slots or more.
	INO	ь	Q65B	Yes	5	(3)	(-152)	(0.4)	(-120)	ERNT-AQB55	(55)	(-10)	(55)	0	ERNT-AQF5	·Maximum of 5 slots, so insufficient by 1 slot
			Q55B	No	5	(-53)	(-152)	(-55)	(-120)	ERNT-AQB55	(55)	(-10)	(55)	0	ERNT-AQF5	·Maximum of 5 slots, so insufficient by 1 slot
			Q68B	Yes	8	(154)	(-152)	(152)	(-120)	ERNT-AQB65	(178)	(-10)	(178)	0	ERNT-AQF8	
			Q65B	Yes	5	(71)	(-152)	(68.4)	(-120)	ERNT-AQB55	(123)	(-10)	(123)	0	ERNT-AQF5	
	Yes	3	Q63B	Yes	3	(15)	(-152)	(13)	(-120)	ERNT-AQB62	(64)	(-10)	(64)	0	ERNT-AQF3	
			Q55B	No	5	(15)	(-152)	(13)	(-120)	ERNT-AQB55	(123)	(-10)	(123)	0	ERNT-AQF5	
			Q52B	No	5	(-68)	(-152)	(-70.5)	(-120)	ERNT-AQB52	(9)	(-10)	(9)	0	ERNT-AQF3	·Maximum of 2 slots, so insufficient by 1 slot
JW-4BU			Q612B	Yes	12	(265)	(-152)	(263)	(-120)	ERNT-AQB68	(292)	(-10)	(292)	0	ERNT-AQF12	·There is no base unit without power supply having 6 slots or more.
			Q68B	Yes	8	(154)	(-152)	(152)	(-120)	ERNT-AQB65	(178)	(-10)	(178)	0	ERNT-AQF8	·There is no base unit without power supply having 6 slots or more.
	No	4	Q65B	Yes	5	(71)	(-152)	(68.4)	(-120)	ERNT-AQB55	(123)	(-10)	(123)	0	ERNT-AQF5	
		7	Q63B	Yes	3	(15)	(-152)	(13)	(-120)	ERNT-AQB62	(64)	(-10)	(64)	0	ERNT-AQF3	·Maximum of 3 slots, so insufficient by 1 slot
			Q55B	No	5	(15)	(-152)	(13)	(-120)	ERNT-AQB55	(123)	(-10)	(123)	0	ERNT-AQF5	
			Q52B	No	5	(-68)	(-152)	(-70.5)	(-120)	ERNT-AQB52	(9)	(-10)	(9)	0	ERNT-AQF3	·Maximum of 2 slots, so insufficient by 2 slots

<sup>1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the MELSEC-Q series compatible modules and JW series modules.

#### 2. Replacing with MELSEC-Q series large type base unit

©: Same, ○: JW series is larger, ▲: JW series is smaller

JW series base unit			MELSEC-Q series large type base unit							
Model		Maximum number of slots	Model	Includes power supply	Maximum number of slots	Comparison*1 (MELSEC-Q series - JW series)				Remarks
						External dimensions		Mounting Dimensions		
						Width	Height	Width	Height	
JW-13BU	Yes	12	Q68BL	Yes	8	O (-14)	(-10)	(-14)	0	No large base with at least 9 slots     Maximum of 8 slots, so insufficient by 4 slots     Drill mounting holes in panel surface required except for 2 vertical holes
	No	13	Q68BL	Yes	8	(-14)	(-10)	(-14)	0	No large base with at least 9 slots     Maximum of 8 slots, so insufficient by 5 slots     Drill mounting holes in panel surface required except for 2 vertical holes
JW-8BU	Yes	7	Q68BL	Yes	8	(156)	(-10)	(156)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
	No	8	Q68BL	Yes	8	(156)	(-10)	(156)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
JW-6BU	Yes	5	Q65BL	Yes	6	(110)	(-10)	(110)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
			Q55BL	No	5	(55)	(-10)	(55)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
	No	6	Q68BL	Yes	8	(224)	(-10)	(224)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
			Q65BL	Yes	6	(110)	(-10)	(110)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
			Q55BL	No	5	(55)	(-10)	(55)	0	·Drill mounting holes in panel surface required except for 2 vertical holes ·Maximum of 5 slots, so insufficient by 1 slot
JW-4BU	Yes	3	Q65BL	Yes	6	(178)	(-10)	(178)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
			Q55BL	No	5	(123)	(-10)	(123)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
	No	4	Q65BL	Yes	6	(178)	(-10)	(178)	0	·Drill mounting holes in panel surface required except for 2 vertical holes
			Q55BL	No	5	(123)	(-10)	(123)	0	·Drill mounting holes in panel surface required except for 2 vertical holes

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the Q series large type base and JW series modules.

<sup>\*2:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the base adapter and JW series modules.

#### **Slot Positions**

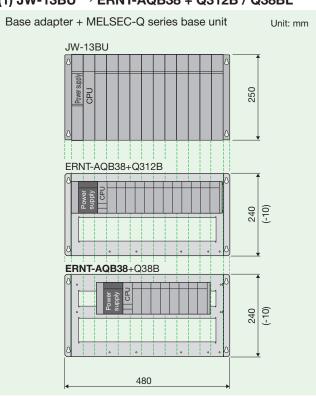
The slot positions differ between the New Satellite JW Series and the MELSEC-Q series. After replacement, change the slot positions of modules and adjust the length of cables.

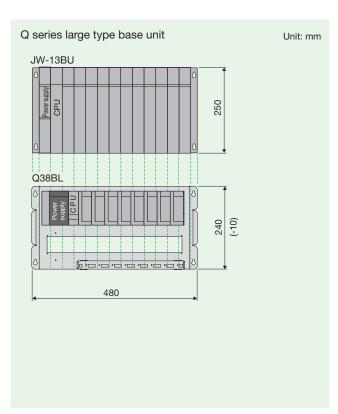
#### **Note**

Values in parentheses indicate differences in dimensions with JW series modules.

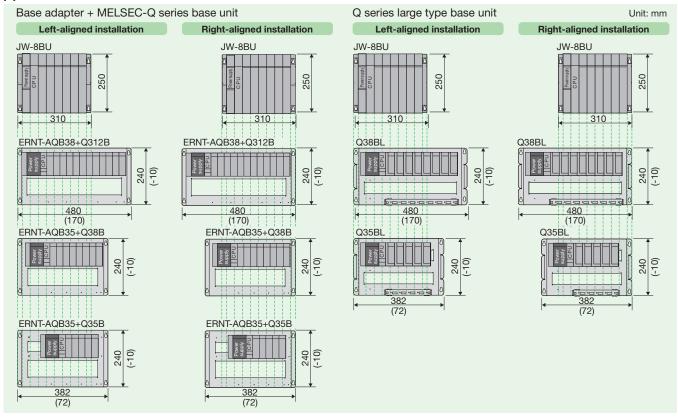
#### When using a main base unit

#### (1) JW-13BU → ERNT-AQB38 + Q312B / Q38BL

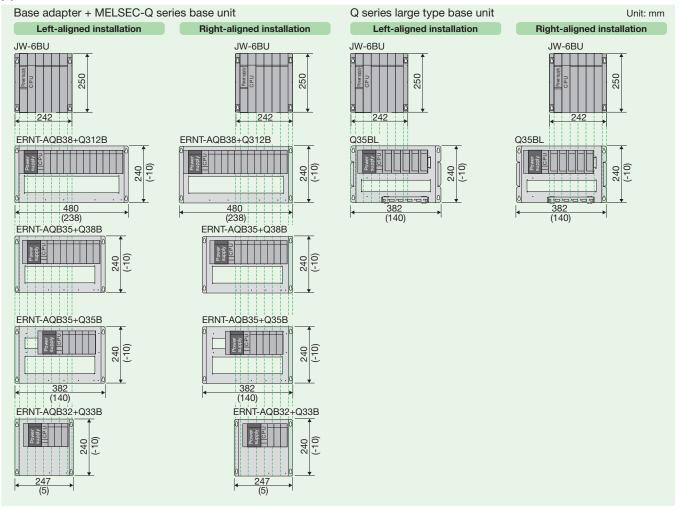




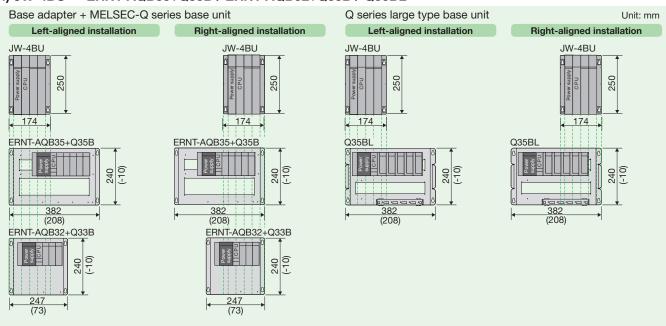
#### (2) JW-8BU → ERNT-AQB38+Q312B / ERNT-AQB35+Q38B / ERNT-AQB35+Q35B / Q38BL



#### (3) JW-6BU $\rightarrow$ ERNT-AQB35+Q38B / ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q35BL

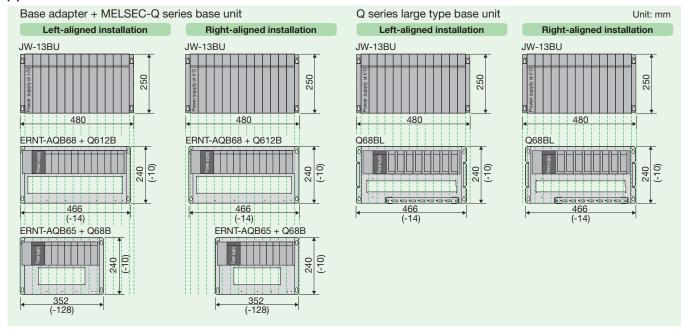


#### (4) JW-4BU $\rightarrow$ ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q35BL

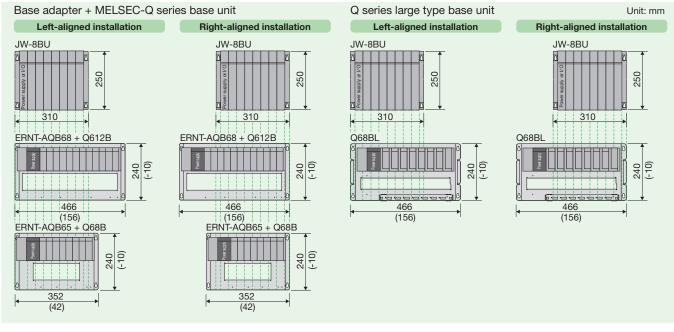


#### When using an extension base unit

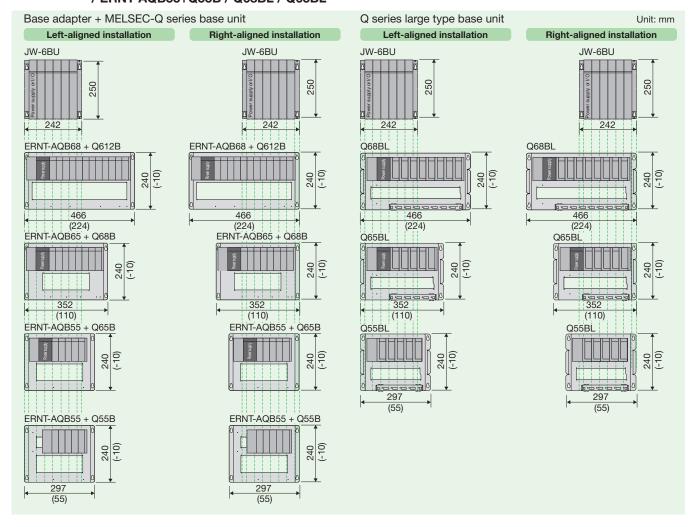
#### (1) JW-13BU → ERNT-AQB68 + Q612B / Q68BL



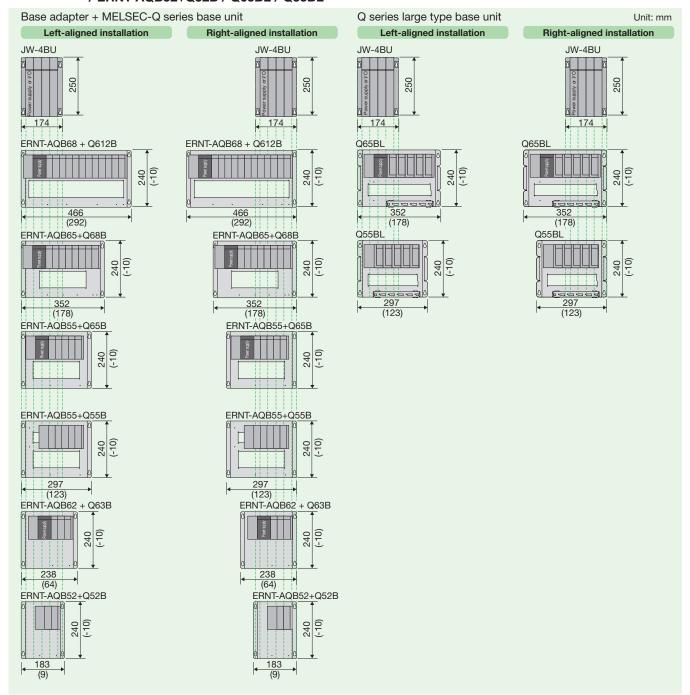
#### (2) JW-8BU $\rightarrow$ ERNT-AQB68+Q612B / ERNT-AQB65+Q68B / Q68BL



#### (3) JW-6BU $\rightarrow$ ERNT-AQB68+Q612B / ERNT-AQB65+Q68B / ERNT-AQB55+Q65B / ERNT-AQB55+Q55B / Q68BL / Q65BL



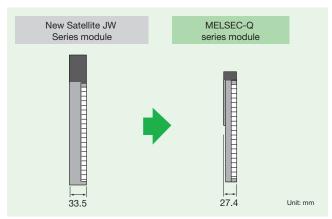
# (4) JW-4BU $\rightarrow$ ERNT-AQB65+Q68B / ERNT-AQB55+Q65B / ERNT-AQB55+Q55B / ERNT-AQB52+Q52B / Q65BL / Q55BL



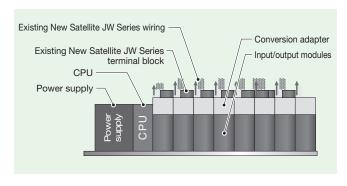
# **Usage Precautions**

#### **Module Width**

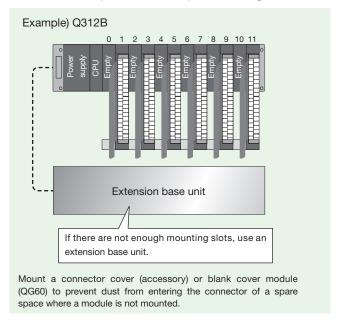
(1) Since the width of MELSEC-Q series modules is smaller (New Satellite JW Series:  $33.5 \text{mm} \rightarrow \text{MELSEC-Q}$  series: 27.4 mm), the wiring area becomes smaller as well. Check the wiring area when mounting a conversion adapter.



(2) If the wiring causes interference with adjacent modules, take an action such as lifting the wiring forward to prevent interference.



(3) If interference still occurs even when you lift the wiring, keep the next slot open to secure a space for wiring.



(4) If a problem still exist, consider using the Mitsubishi Electric Q series large type base unit (wiring space of 37.5mm). Note: The 2-slot type conversion adapter is not applicable.

#### **Depth**

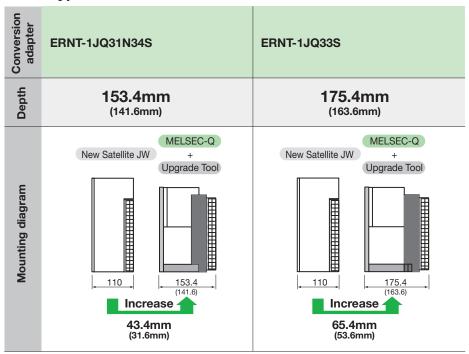
The following tables list the depth dimensions. The depth is larger, so verification is required for mounting.

The values in parentheses, which are 11.8mm smaller, represent the depth when the base adapter or Q series large type base unit is

# 1-slot type



## 2-slot type

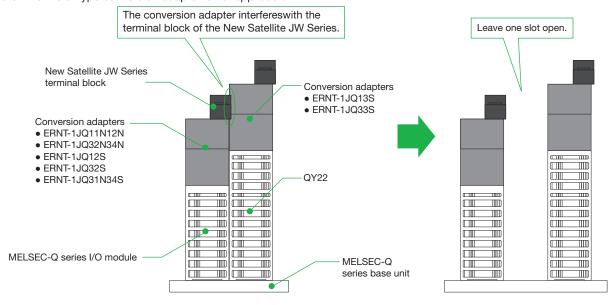


<sup>\*:</sup> Each depth is measured from the panel surface. New Satellite JW Series: Base unit + Input/output modules + Terminal block (connector) MELSEC-Q series + Upgrade tool: Base adapter + Base unit + Input/output modules + Conversion Adapter + Terminal block (connector)

#### **Check for Interference with Adjacent Modules**

Leave one slot open to prevent interference of the terminal blocks when the adjacent conversion adapters are as follows. Note that an open slot is not required when the MELSEC-Q series large type base unit is used because there will be a gap between modules.

Note: The 2-slot type conversion adapter is not applicable.



#### **Conversion Adapter Support Flange / Base Adapter**

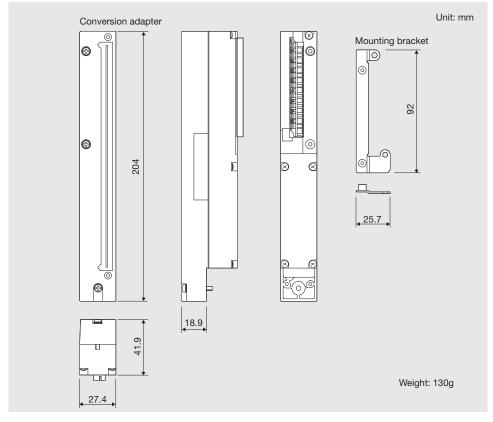
When using a conversion adapter, the conversion adapter support flange is required. We recommend use of a base adapter that permits MELSEC-Q series installation using the mounting holes of the New Satellite JW Series (additional drilling of holes is not required).

# **External Dimensions**

# **Conversion Adapter**

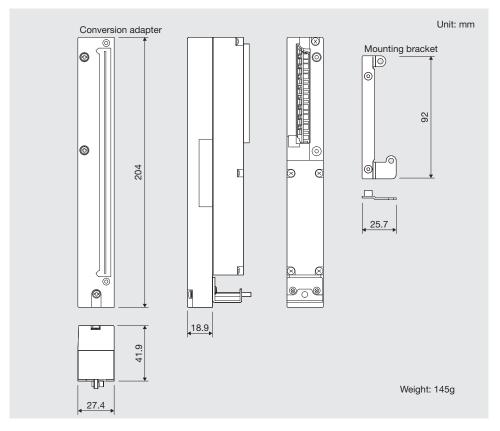


Model names: ERNT-1JQ11N12N **ERNT-1JQ12S** 





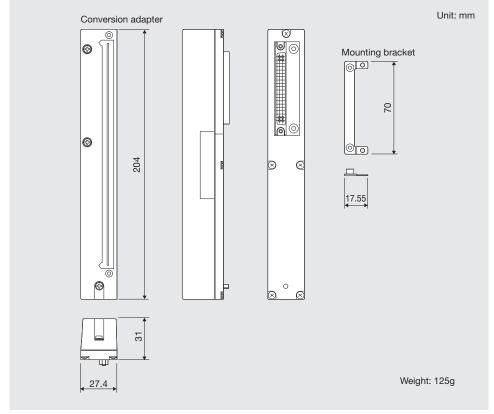
Model name: **ERNT-1JQ13S** 





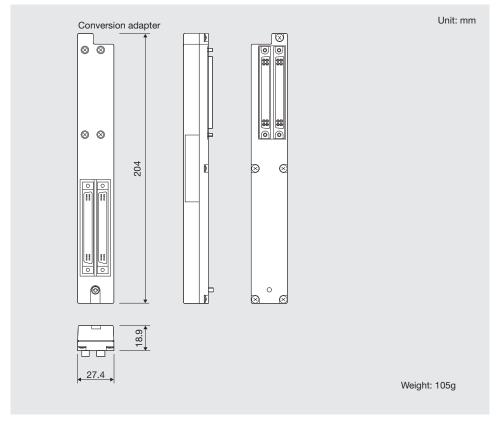


Model names: ERNT-1JQ32N34N **ERNT-1JQ32S** 



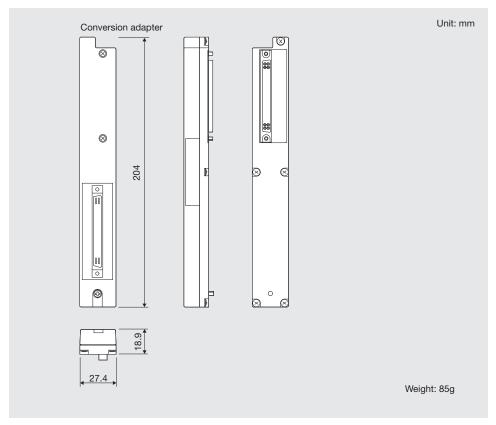


Model name: **ERNT-1JQ64NC** 



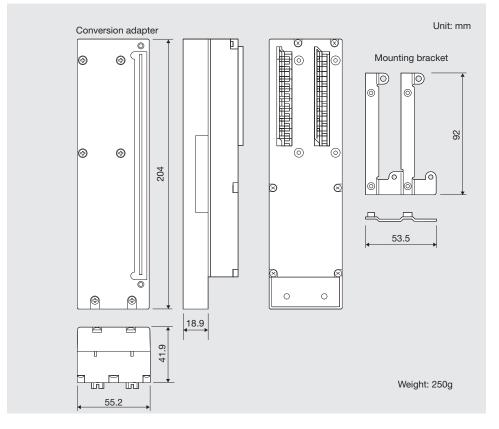


Model name: ERNT-1JQ32SC62SC



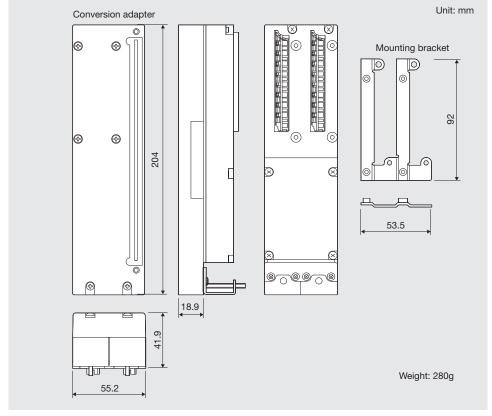


Model name: ERNT-1JQ31N34S





Model name: **ERNT-1JQ33S** 



# JW series small type (JW300/30H/20H)

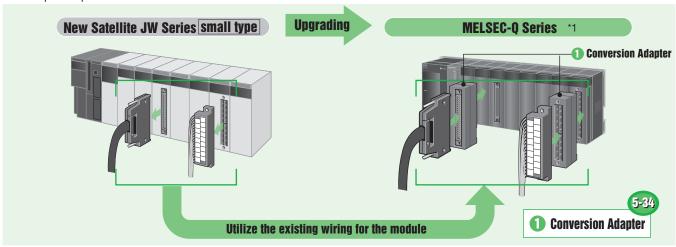
# Upgrading from the New Satellite JW series to the MELSEC-Q series

- Simplifies replacement with the MELSEC-Q series
  The upgrade tool makes it easy to replace the SHARP New Satellite JW Series programmable controller with the Mitsubishi Electric MELSEC-Q series.
- Significantly shortens the time required for I/O module wiring and significantly reduces wiring errors

  The upgrade tool allows you to connect the wiring connected to the New Satellite JW Series I/O modules as is to the MELSEC-Q series using a conversion adapter. (Partial changes to power supply and common terminal connections required.)

### **Product Overview**

This upgrade tool includes a conversion adapter that is used to transfer the existing wiring of SHARP New Satellite JW Series programmable controller (small types: JW300/30H/20H) input/output modules to the Mitsubishi programmable controller MELSEC-Q series input/output modules.

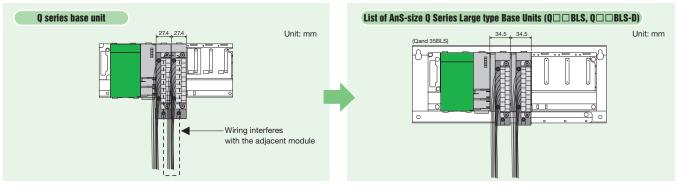


<sup>\*1:</sup> When replacing SHARP New Satellite JW Series programmable controller (small type: JW300/30H/20H) with Mitsubishi programmable controller MELSEC-Q series, verification of the mounting is required due to the change in module width and depth dimensions. The conversion adapter terminal block may cause interference with adjacent modules. For details, refer to "Usage Precautions" on page 5-45 in this catalog.

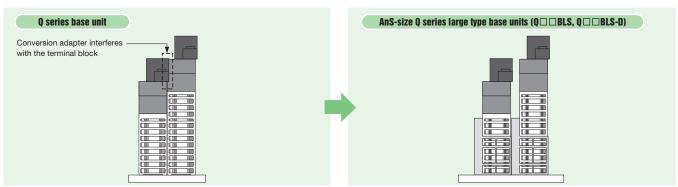
#### Mitsubishi Electric AnS-size Q Series Large Type Base Unit (Recommended)

In light of the following circumstances, we recommend that you use the Mitsubishi Electric AnS-size Q series large type base unit ( $Q \square BLS$ ,  $Q \square BLS$ -D).

Note that the pitch of mounting holes in some models are similar to that in the JW series, and therefore mounting positions must be reconsidered.



•The AnS-size Q series large type base unit can be used to remove terminal block interference when use of the conversion adapter causes interference with adjacent modules.

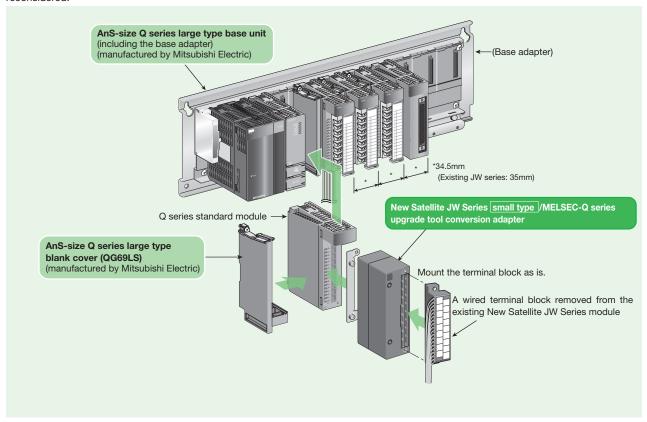


## MITSUBISHI ELECTRIC CORPORATION

# **Upgrading using the AnS-size Q series large type base unit**

Using the Mitsubishi Electric AnS-size Q series large type base unit (QDBLS, QDBLS-D) eliminates the need to secure wiring space and check for interference between adjacent conversion adapter terminal blocks.

Note that the pitch of mounting holes in some models are similar to that in the JW series, and therefore mounting positions must be reconsidered.



•For details on mounting dimensions, refer to page 5-39 in this catalog.

#### List of AnS-size Q Series Large type Base Units

Mo	del	Description	Number of slots	
Panel surface installation type	DIN rail installation type	Description	Number of Slots	
Q38BLS	Q38BLS-D	Main base unit	8	
Q35BLS	Q35BLS-D	Iviairi base uriit	5	
Q68BLS	Q68BLS-D	Extension base unit with power supply	8	
Q65BLS	Q65BLS-D	Extension base unit with power supply	5	
Q55BLS Q55BLS-D		Extension base unit without power supply	5	

#### AnS-size Q series large type blank cover

Model	Description
QG69LS	Used to adjust gaps between modules

## **Model List**

### **11** Conversion adapter

When selecting a conversion adapter, be sure to refer to the module specification comparison charts and notes on pages 5-34 to 5-38.

These pages describe precautions such as differences in the number of points per common. For detailed specifications and general specifications not described in the module specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series small type and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### For Input/Output Modules

[1-slot type] (Applicable to the Mitsubishi Electric AnS-size Q series large type base unit (Q DBLS, Q DBLS-D) as well)

	New Satellite JW Series	MELSEC-Q series		Conversion adapter			
Input/Output	module model before replacement	module model after replacement	Model	Sha New Satellite JW Series	pe MELSEC-Q series	No. of input/ output points	Page
Input	JW-211N JW-211NA	QX10					
Output	JW-213S JW-213SA	QY22	ERNT-2JQ210NS		Terminal block (18 points)	16 points	5-34
JW-214S JW-214SA		QY10		Terminal block			
lanut	JW-212N JW-212NA	QX40, QX40-S1, QX70 <sup>'3</sup>		(18 points)			
Input	JW-214N JW-214NA	QX80	ERNT-2JQ212S				5-35
Output	JW-212S JW-212SA	QY40P, QY50, QY70 <sup>-4</sup>					5-35
Innut	JW-234N	QX41, QX41-S1, QX41-S2, QX71 *5 *6	ERNT-2JQ234N264N	Connector (40P)	Connector (40P)	32 points	5-36
Input	JW-264N	QX41 × 2, QX41-S1 × 2, QX41-S2 × 2 *7 *8	ERNT-2JQ234N264N × 2 <sup>-1</sup>	Connector (40P) x 2	Connector (40P) x 2	32 points x 2	<b>U-30</b>
Output	JW-232S	QY41H	ERNT-2JQ232S262S	Connector (40P)	Connector (40P)	32 points	5-38
Cutput	JW-262S	QY41H × 2	ERNT-2JQ232S262S × 2 *2	Connector (40P) x 2	Connector (40P) x 2	32 points x 2	J-30

- \*1: Two conversion adapters are required to replace the JW-264N. \*2: Two conversion adapters are required to replace the JW-262S.
- \*3: Consider rewiring to the QX40H or QX80H if the existing module uses a different power supply for each 8-point group. Also consider using the ERNT-ASQTB20 in such cases.

- \*4: Another power supply is required: 12/24VDC for QY40P and QY50, and 5/12VDC for QY70.
  \*5: Consider rewiring to the QX81 or QX81-S2 if using a 24VDC negative common.
  \*6: Consider rewiring to two QX40s, two QX40-S1s, two QX70s, or two QX80s if the existing module uses a different power supply for each 16-point group. Also consider using the ERNT-ASQTB20 in such cases.
- \*7: Cannot be used with negative common input.
- \*8: Consider rewiring to the QX82 or QX82-S1 if using a 24VDC negative common.

#### ☆ Universal conversion adapter (\*Requires rewiring. For details, refer to page 7-1 in this catalog.)

Input/output modules and analog/high-speed counter modules in the table below do not support the use of a conversion adapter. These modules, however, can be replaced by using a universal conversion adapter even though rewiring is required.

Check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

#### For Input/Output Modules

Input/Output	New Satellite JW Series module model			MELSEC-Q series module model				Universal conversion
	Model	Specifications	No. of points	Model	Specifications	No. of points	No. of required modules	adapter
	JW-203N	200/240VAC	8 points	QX28	100-240VAC	8 points	1 module	
lanut	JW-201N	100/120VAC	8 points	QX28	100-240VAC	8 points	1 module	
Input	JW-202N	12/24VDC	8 points	QX40, QX40-S1	24VDC positive common	16 points	1 module	
			o points	QX70	5/12VDC positive/negative common	10 points		
	JW-203S	100/200VAC	8 points	QY22	100-240VAC	16 points	1 module	*9
	JW-204S	250VAC/30VDC 2A independent	8 points	QY18A	240VAC/24VDC 2A independent	8 points	1 module	
Output	JW-204SA	· ·	·		<u>'</u>	·		
	JW-202S	5/12/24VDC sink type	8 points	QY68A	5-24VDC 2A independent sink/source type	8 points	1 module	
	JW-215SA	5/12/24VDC source type	16 points	QY80	12/24VDC source type	16 points	1 module	
Input/output	1/4/2221/4	12/24VDC	16 points	OHASB	24VDC positive common	32 points	1 modulo	
Input/output	JW232M	5/12/24VDC sink type	16 points	OH42P	12/24VDC sink type	32 points	1 module	No applicable module

<sup>\*9:</sup> Use for replacements with the universal conversion adapter (refer to page 7-5).

#### For Analog/High-Speed Counter Modules

Input/Output	New Satellite JW Series module model			MELSEC-Q series module model				Universal conversion
	Model	Specifications	Number of channels	Model	Specifications	Number of channels	No. of required modules	adapter
Analaa		-10 to 10VDC,			-10 to 0 to 10VDC,			
Analog	JW-24AD	-20 to 20mADC	4	Q64AD	0 to 20mA DC	4	1 module	*10
input		13-bit signed binary			16-bit signed binary			
Analaa	JW-222DA	-10 to 10VDC,	2	Q62DAN	-10 to 10VDC,		1 module	*10
Analog		-20 to 20mADC			0 to 20mADC	2		
output		15-bit signed binary			16-bit signed binary			
High appeal	JW-21HC	60kpps	4	QD62	200/100/10kpps	2	1 madula	
High-speed	JW-21HC	32-bit binary	'	QD62	32-bit binary		1 module	*10
counter	IM DOLIC	240kpps	2	QD62	200/100/10kpps	2	1 module	10
input	JW-22HC	32-bit binary		QD02	32-bit binary	2		

<sup>\*10:</sup> The universal conversion adapter (refer to page 7-5) can be used for replacement.

# **Conversion Adapter**

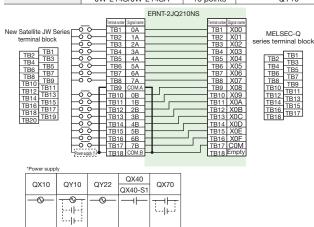
#### **Specifications**

## For Input/Output Modules

**1-slot type** (Applicable to AnS-size Q series large type base units(Q □ BLS, Q □ BLS-D) as well)

#### (1) ERNT-2JQ210NS Terminal block (18p)→Terminal block (18p)

Conversion adapter model	New Satellite JW Series module model	No. of input/output points	MELSEC-Q series module model
ERNT-2JQ210NS	JW-211N/JW-211NA	16 points	QX10
	JW-212N/JW-212NA	16 points	QX40 QX40-S1
	JW-214N/JW-214NA	16 points	QX70
	JW-213S/JW-213SA	16 points	QY22
	JW-214S/JW-214SA	16 points	QY10



[opening a companie on one q						
Model		New Satellite JW Series	MELSEC-Q series			
Specification	5	JW-211N/JW-211NA	QX10			
No. of inp	out points	16 points	16 points			
Rated inp	ut voltage	100-120VAC 50/60Hz	100-120VAC 50/60Hz			
Datad inn	ut current	Approx. 10mA (100VAC 60Hz)	Approx. 8mA (100VAC 60Hz)			
nateu irip	ut current	Approx. 8.4mA (100VAC 50Hz)	Approx. 7mA (100VAC 50Hz)			
Input imp	odonoo	Approx. 10kΩ (60Hz)	Approx. 12kΩ (60Hz)			
Input Imp	redance	Approx. 12kΩ (50Hz)	Approx. 15kΩ (50Hz)			
Inrush cu	ırrent	Max. 480mA 0.2ms (132VAC)	Max. 200mA 1ms (132VAC)			
Operating	ON	80VAC / 7mA	80VAC / 5mA			
voltage/ current	OFF	30VAC / 3mA	30VAC / 1.7mA			
Response	OFF→ON	30ms or less	15ms or less			
time	ON→OFF	40ms or less	20ms or less			
Isolation	method	Photocoupler isolation	Photocoupler isolation			
Wiring metho	d for common	8 points per common	16 points per common			
External	interface	18-point terminal block	18-point terminal block			

Model		New Satellit	te JW Series	MELSEC-Q series			
Specifications		JW-212N/JW-212NA Positive common/negative common shared type	JW-214N/JW-214NA Positive common/negative common shared type	QX40 Positive common type	QX40-S1 Positive common type	QX70 Positive common/negative common shared type	
No. of inp	ut points	16 points	16 points	16 points	16 points	16 points	
Rated inp	ut voltage	12/24VDC	12/24VDC	24VDC	24VDC	5/12VDC	
Rated inp	ut current	Approx. 7.5mA (24VDC) Approx. 3.5mA (12VDC)	Approx. 7.5mA (24VDC) Approx. 3.5mA (12VDC)	Approx. 4mA	Approx. 6mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)	
Input imp	edance	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. $5.6$ kΩ Approx. $3.9$ kΩ		Approx. 3.3kΩ	
Inrush cu	irrent	-	-	-	-	_	
Operating	ON	10.5V / 3mA	10.5V / 3mA	19V / 3mA	19V / 4mA	3.5V / 1mA	
voltage/ current	OFF	5V / 1.5mA	5V / 1.5mA	11V / 1.7mA	11V / 1.7mA	1V / 0.1mA	
Response	OFF→ON	10ms or less	0.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	
time	ON→OFF	10ms or less	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	
Isolation r	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Wiring method for common		8 points per common	8 points per common	16 points per common	16 points per common	16 points per common	
External i	nterface	18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block	18-point terminal block	

External interrace		To-politi terminai biock		terriliai biock		
Model		New Satellit	e JW Series		MELSEC-Q serie	S
Specifica	tions	JW-213S Triac output	JW-213SA Triac output		QY22 Triac output	
No. of out	put points	16 points	16	points	16 points	
Rated load	d voltage	100-240VAC	100-	-240VAC	100-240VAC	
Tiated load	a voltage	50/60Hz	50	/60Hz	50/60Hz	
Maximum I	oad current	0.5A/point	1A	√point	0.6A/point	
Maximum	oad current	2A/common	2A/c	common	4.8A/common	
Minimum Io	ad current	15mA	1	5mA	25mA	
Maximum in	rush current	6A 100ms or less	6A 100	ms or less	20A, one cycle or le	ess
		1.5mA or less	1.5mA or less		1.5mA or less	
Lookago cui	rrent at OFF	(120VAC)	(120VAC)		(120VAC 60Hz)	
Leanage Cui	ilelii ai Oi i	3mA or less	3mA or less		3mA or less	
		(240VAC)	(240VAC)		(240VAC 60Hz)	
Voltage dr	rop at ON	1.6V or less (0.3A)	1.6V or less (0.3A)		1.5V or less	
Response	OFF→ON	1ms or less	1ms	s or less	1ms + 0.5 cycle or	less
time	ON→OFF	1ms + 0.5 cycle or less	1ms + 0.5	cycle or less	1ms + 0.5 cycle or	less
Surge sup	pressor	Capacitive varistor	Capacit	tive varistor	CR absorber	
Fuse		3A (not replaceable)	3.15A (no	t replaceable)	None	
Isolation r	nethod	Photocoupler isolation	Photocou	pler isolation	Photocoupler isolation	
Wiring metho	d for common	8 points per common	8 points	per common	16 points per common	
External in	nterface	18-point terminal block	18-point terminal block		18-point terminal block	

	Model	New Satellite JW Series	MELSEC-Q series
Specification	ons	JW-214S/JW-214SA	QY10
No. of outp	ut points	16 points	16 points
Rated load	voltage	30VDC / 250VAC	24VDC / 240VAC
Maximum lo	oad current	2A/point 5A/common	2A/point 8A/common
Minimum lo	ad current	10mA (5VDC)	1mA (5VDC)
Maximum ir	nrush current	_	_
Leakage cu	rrent at OFF	_	_
Voltage dro	p at ON	_	_
Response	OFF→ON	10ms or less	10ms or less
time	ON→OFF	10ms or less	12ms or less
Surge supp	ressor	None	None
Fuse		None	None
Isolation me	ethod	Relay isolation	Relay isolation
Wiring metho	od for common	8 points per common	16 points per common
External inte	erface	18-point terminal block	18-point terminal block

- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used
  - separately, a wiring change is required.

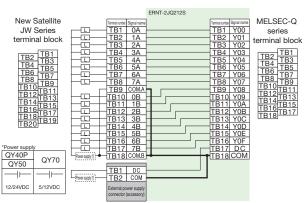
    2. For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

    4. Consider rewiring to the QX40H or QX80H if the existing module uses a different power supply for each 8-point group. Also consider using the ERNT-ASQTB20 in such cases.

### (2) ERNT-2JQ212S Terminal block (18P)→Terminal block (18P)

Conversion adapter model	New Satellite	No. of input/	MELSEC-Q series
Conversion adapter model	JW Series module model	output points	module model
			QY40P
	JW-212S/JW-212SA	16 points	QY50
ERNT-2JQ212S			QY70
	JW-212N/JW-212NA	16 points	
	JW-214N/JW-214NA	16 points	QX80

#### JW-212S/JW-212SA→QY40P/QY50/QY70



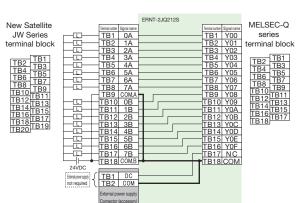
#### [Specification comparison chart]

Model		New Satellit	e JW Series	MELSEC-Q series		
		JW-212S	JW-212SA	QY40P	QY50	QY70
Specifica	ations	Sink type				
No. of out	put points	16 points	16 points	16 points	16 points	16 points
Rated loa	d voltage	5/12/24VDC	5/12/24VDC	12/24VDC	12/24VDC	5/12VDC
Maximum	load current	0.5A/point	0.5A/point	0.1A/point	0.5A/point	16mA/point
		2A/common	2A/common	1.6A/common	4A/common	256mA/common
Maximum	inrush current	1A, 100ms	1A, 100ms	0.7A, 10ms	4A, 10ms	40mA, 10ms
Leakage c	urrent at OFF	0.2mA or less	0.2mA or less	0.1mA or less	0.1mA or less	_
Voltage di	ron at ON	1.2VDC	1.2VDC	0.2VDC	0.3VDC	VOL: DC0.3V
voitage ui	op at ON	(MAX.) 0.3A	(MAX.) 0.3A	(MAX.) 0.1A	(MAX.) 0.5A	VOL. DC0.3V
Response	OFF→ON	1ms or less	1ms or less	1ms or less	1ms or less	0.5ms or less
time		1ms or less	1ms or less	1ms or less	1ms or less	0.5ms or less
uiiie	ON→OFF	(resistive load)				
Surge si	uppressor	Zener diode	Zener diode	Zener diode	Zener diode	None
Fuse		3A	3.15A	None	6.7A	1.6A
ruse		(not replaceable)	(not replaceable)	ivone	(not replaceable)	(not replaceable)
Isolation r	nothod	Photocoupler	Photocoupler	Photocoupler	Photocoupler	Photocoupler
		isolation	isolation	isolation	isolation	isolation
		8 points per common	8 points per common	16 points per common	16 points per common	16 points per common
External in	nterface	18-point terminal block				

- Notes 1. In a case where the number of points per common changes from 8 (four circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used separately, a wiring change is required.
  - side are used separately, a wiring change is required.

    2. Additional 5/12/24VDC supply to the terminal numbers TB1 and TB2 of the external power supply connector is required.
  - For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 4. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### JW-212N/JW-212NA/JW-214N/JW-214NA→QX80



	Model	New Satellite JW Series		MELSEC-Q series
		JW-212N/JW-212NA Positive common/negative	JW-214N/JW-214NA Positive common/negative	QX80 negative
Specifica	ations	common shared type	common shared type	common type
No. of in	put points	16 points	16 points	16 points
Rated inp	out voltage	12/24VDC	12/24VDC	24VDC
Pated inr	out current	Approx. 7.5mA (24VDC)	Approx. 7.5mA (24VDC)	Approx. 4mA
nateu III	out current	Approx. 3.5mA (12VDC)	Approx. 3.5mA (12VDC)	дриох. чил
Input im	pedance	Approx. 3.3kΩ	Approx. 3.3kΩ	Approx. 5.6kΩ
Inrush co	urrent			_
Operating	ON	10.5V / 3mA	10.5V / 3mA	19V / 3mA
voltage/ current	OFF	5V / 1.5mA	5V / 1.5mA	11V / 1.7mA
Response	OFF→ON	10ms or less	0.5ms or less	1/5/10/20/70ms or less
time ON→OFF		10ms or less	1.5ms or less	1/5/10/20/70ms or less
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring metho	od for common	8 points/common	8 points/common	16 points/common
External	interface	18-point terminal block	18-point terminal block	18-point terminal block

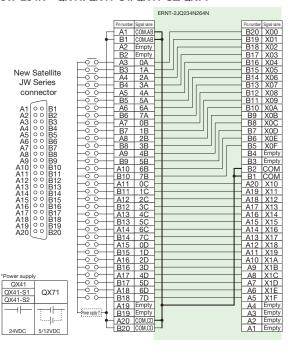
- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the New Satellite JW Series side are used separately, a wiring change is required.
  - The external power supply connected to terminal numbers TB1 and TB2 in the external power supply connector is no longer required.
  - 3. For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
    4. For detailed specifications and general specifications not described in the
  - 4. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

### (3) ERNT-2JQ234N264N Connector (40P)→Connector (40P)

Conversion adapter model	New Satellite JW Series module model	No. of input points	MELSEC-Q series module model
	module model	points	OX41
EDNIT O LOGO ANIGO ANI	IIA/ 00 4N	00!	QX41-S1
ERNT-2JQ234N264N	JW-234N	32 points	QX41-S2
			QX71
			QX41 × 2 modules
ERNT-2JQ234N264N × 2	JW-264N *1	64 points	QX41-S1 × 2 modules
			QX41-S2 × 2 modules

<sup>\*1:</sup> Two sets of the MELSEC-Q series module and conversion adapter are required (32 points for each set) to replace the JW-264N.

#### JW-234N->QX41/QX41-S1/QX41-S2/QX71



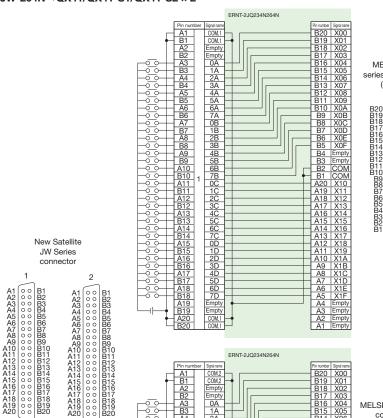
	LSE( series	3
B20 B19 B18 B17 B16 B14 B13 B110 B8 B7 B8 B7 B8 B8 B7 B8 B8 B7 B8 B8 B8 B8 B8 B8 B8 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1	(00000000000000000000000000000000000000	A20 A18 A17 A16 A15 A12 A11 A10 A87 A6 A5 A43 A14 A12 A11

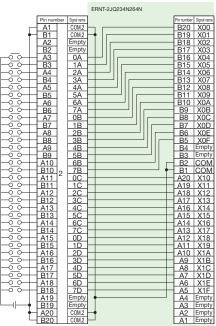
Model		New Satellite JW Series	MELSEC-Q series					
		JW-234N Positive common/negative	QX41	QX41-S1	QX41-S2	QX71 Positive common/negative		
Specifica	ations	common shared type	Positive common type	Positive common type	Positive common type	common shared type		
No. of in	put points	32 points	32 points	32 points	32 points	32 points		
Rated in	out voltage	12/24VDC	24VDC	24VDC	24VDC	5/12VDC		
Rated in	out current	Approx. 7mA (24VDC) Approx. 3.5mA (12VDC)	Approx. 4mA	Approx. 4mA	Approx. 6mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)		
Input im	pedance	Approx. 3.5kΩ	Approx. 5.6kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ	Approx. 3.3kΩ		
Inrush co	urrent	_	_	_	_	_		
Operating	ON	10.5V / 3mA	19V / 3mA	19V / 3mA	15V / 3mA	3.5V / 1mA		
voltage/ current	OFF	5V / 1.5mA	11V / 1.7mA	9.5V / 1.5mA	5V / 1.7mA	1V / 0.1mA		
Response	OFF→ON	0.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less		
time	ON→OFF	1.5ms or less	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less	1/5/10/20/70ms or less	1/5/10/20/70ms or less		
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation		
Wiring metho	od for common	16-points per common	32-points per common	32-points per common	32-points per common	32-points per common		
External	interface	40-pin connector	40-pin connector	40-pin connector	40-pin connector	40-pin connector		

- Notes 1. In a case where the number of points per common changes from 16 (two circuits) to 32 and the pin numbers A1/B1 and A20/B20 on the New Satellite JW Series side are used separately, a wiring change is required.
  - 2. For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

  - 4. Consider rewiring to the QX81 or QX81-S2 if the existing module uses the 24VDC negative common.
     5. Consider rewiring to two QX40s, two QX40-S1s, two QX70s, or two QX80s if the existing module uses a different power supply for each 16-point group. Also consider using the ERNT-ASQTB20 in such cases.

#### JW-264N→QX41/QX41-S1/QX41-S2 × 2





# Notes 1. Two sets of the MELSEC-Q series module and conversion adapter are required (32 points for each set) to replace the JW-264N.

- Use with the positive common input. (Cannot be used with the negative common input.)
- For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 4. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- Consider rewiring to the QX82 or QX82-S1 if the existing module uses the 24VDC negative common.

			•				
Model		New Satellite JW Series	MELSEC-Q series				
		JW-264N	QX41	QX41-S1	QX41-S2		
		Positive common/negative	Positive	Positive	Positive		
Specifica	ations	common shared type	common type	common type	common type		
No. of in	out points	64 points	32 points	32 points	32 points		
Rated in	out voltage	24VDC	24VDC	24VDC	24VDC		
Rated in	out current	Approx. 4.1mA	Approx. 4mA	Approx. 4mA	Approx. 6mA		
Input imp	pedance	Approx. 5.9kΩ	Approx. 5.6kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ		
Inrush cu	ırrent	_	_				
Operating voltage/	ON	18V / 3mA	19V / 3mA	19V / 3mA	15V / 3mA		
current	OFF	8V / 1.5mA	11V / 1.7mA	9.5V / 1.5mA	5V / 1.7mA		
	OFF→ON	0.5ms or less	1/5/10/20	0.1/0.2/0.4/0.6	1/5/10/20		
Response		0.5ITIS OF IESS	/70ms or less	/1ms or less	/70ms or less		
time	ON→OFF	1.5ms or less	1/5/10/20	0.1/0.2/0.4/0.6	1/5/10/20		
	UN→UFF	1.31115 01 1655	/70ms or less	/1ms or less	/70ms or less		
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation		
Wiring m	ethod	32 points per	32 points per	32 points per	32 points per		
for comn	non	common	common	common	common		
External	interface	40-pin connector × 2	40-pin connector	40-pin connector	40-pin connector		

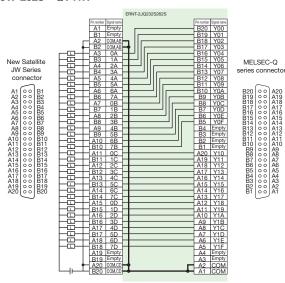
# **(4) ERNT-2JQ232S262S** connector (40P)→Connector (40P)

Conversion adapter model	New Satellite JW Series module model	No. of output points	MELSEC-Q series module model	
ERNT-2JQ232S262S	JW-232S	32 points	QY41H	
ERNT-2JQ232S262S × 2	JW-262S *1	64 points	QY41H × 2 modules	

<sup>\*1:</sup> Two sets of the QY41H and the conversion adapter are required (32 points for each set) to replace the JW-262S.

MELSEC-Q

#### JW-232S→QY41H



# [Specification comparison chart]

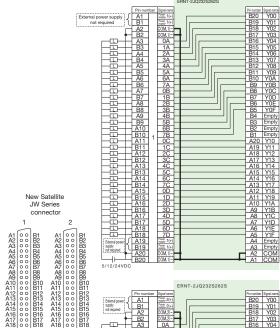
	Model	New Satellite JW Series		MELSEC-Q series
		JW-232S	JW-262S	QY41H
Specificati	ions	Sink type	Sink type	Sink type
No. of outp	out points	32 points	64 points	32 points
Rated load	voltage	5/12/24VDC	5/12/24VDC	5/12/24VDC
Maximum Io	ad current	0.1A/point	0.1A/point	0.2A/point
Waxiiiidiiiid	au current	1.6A/common	2A/common	2A/common
Maximum inr	ush current	0.15A 10ms or less	0.15A 100ms or less	0.7A 10ms or less
Leakage cur	rent at OFF	0.2mA or less	0.2mA or less	0.1mA or less
Voltage dr	op at ON	1.3VDC (MAX.) 0.1A	1.2VDC (MAX.) 0.1A	0.2VDC (MAX.) 0.1A
Response	$OFF {\rightarrow} ON$	1ms or less	0.5ms or less	2µs or less
time	ON→OFF	1ms or less (resistive load)	1ms or less (resistive load)	2μs or less (resistive load)
Surge sup	uppressor Zener diode Zener diode		Zener diode	Zener diode
Fuse Isolation method		2A (not replaceable)	2A (not replaceable) 2.5A (not replaceable)	
		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring method	for common	16 points per common	32 points per common	32 points per common
External in	nterface	40-pin connector	40-pin connector × 2	40-pin connector

- Notes 1. In a case where the number of points per common changes from 16 (two circuits) to 32 and the pin numbers A2/B2 and A20/B20 on the JW-232S side are used separately, a wiring change is required.
  - 2. Two sets of the QY41H and the conversion adapter are required (32 points for each
  - set) to replace the JW-262S.

    3. The external power supplies connected to pin numbers A1 and B1 of 1 and pin numbers A1 and B1 of 2 in the New Satellite JW Series module are no longer required for JW-262S replacements. Such devices may remain connected though as the conversion adapter is not wired internally for this connection.
  - 4. For \_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the
  - specifications of devices and equipment to be connected.

    5. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the New Satellite JW Series and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### JW-262S→QY41H × 2



series	LSEC con Slot	nector
B20 B19 B18 B17 B16 B15 B11 B11 B10 B9 B8 B7 B6 B8 B7 B6 B8 B7 B6 B8 B7 B6 B8 B7 B6 B8 B7 B8 B7 B8 B7 B8 B8 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1	000000000000000000000000000000000000000	A20 A19 A17 A16 A15 A12 A10 A8 A7 A6 A43 A2 A1

			-	RNT-2JQ232S262S		
F	. 1		Е	HN1-2JQ23252625		
Pin num		Signal name Power 2(+)			B20	Signal name YOO
Extensi power A1 supply B1		upply-2(+) hower 2(+)				
					B19	Y01
A2		OM.2(-)			B18	Y02
B2	1 1				B17	Y03
A3	1	0A	T		B16	Y04
<u> </u>	1	1A	T		B15	Y05
	⊦	2A	П		B14	Y06
<u>B4</u>	1 1	3A	T		B13	Y07
A5_	l l	4A	_		B12	Y08
B5_	1 1	5A			B11	Y09
	l l	6A	_		B10	YOA
	1 1	7A			B9	Y0B
	l l	0B	_		B8	YOC
— □ <u>B7</u>	L	1B	_		B7	YOD
- LJ - A8	ΙL	2B	-		B6	Y0E
— □ <u>B8</u>	l	3B	-		B5	Y0F
— A9	ΙL	4B	-		B4	Empty
B9	l L	5B	-		B3	Empty
A10	] [	6B	-		B2	Empty
B10	2	7B	-		B1	Empty
A11	ا ۲ ا	0C	-		A20	Y10
B11	] [	1C	-		A19	Y11
A12	l L	2C	-		A18	Y12
B12	lΓ	3C	-		A17	Y13
A13	] [	4C	-		A16	Y14
B13	lΓ	5C	-		A15	Y15
A14	1 [	6C	-		A14	Y16
B14	1 [	7C	-		A13	Y17
A15	1 [	0D	-		A12	Y18
B15	1 [	1D	-		A11	Y19
A16	1 [	2D	-		A10	Y1A
B16	] [	3D	-		A9	Y1B
A17	1 [	4D	-		A8	Y1C
B17	] [	5D	-		A7	Y1D
A18	1 [	6D	-		A6	Y1E
B18	1 [	7D	-		A5	Y1F
External power A19	] [	Your 2(+)			A4	Empty
supply B19	1 3	Your 2(+)			A3	Empty
A20	1 6	COM.2(-)	-		A2	СОМ
H B20		OM,2(-)	_		A1	СОМ
5/12/24VDC						

eries	coni coni ot n-	necto
B20 B19 B18 B17 B16 B15 B11 B10 B10 B9 B8 B7 B6 B8 B7 B6 B8 B7 B6 B8 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1 B1	(00000000000000000000000000000000000000	A20 A19 A18 A17 A16 A14 A12 A11 A10 A9 A7 A6 A5 A14 A10 A9 A7 A6 A5 A14 A17 A16 A17 A17 A18 A17 A18 A17 A18 A18 A18 A18 A19 A19 A19 A19 A19 A19 A19 A19 A19 A19

#### **MITSUBISHI ELECTRIC CORPORATION Base Unit**

# **Note**

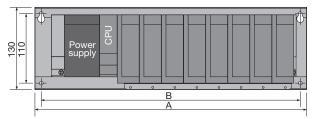
The positions of the 4 mounting holes needed for the base unit are different from those for the New Satellite JW Series base unit, and therefore you will need to drill additional screw holes into the control panel.

# **Mounting Dimensions**

• The slot positions of modules differ between the New Satellite JW Series and the MELSEC-Q series. After replacement, adjust the length of cables.

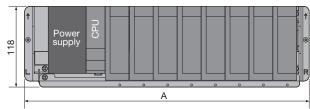
Unit: mm

#### AnS-size Q series large type base unit Panel surface installation type



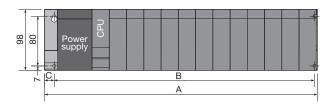
AnS-size Q series large type base unit model	Description	А	В	Mounting screw hole size
Q38BLS	Main base unit	430	410	
Q35BLS	Main base unit	325	305	
Q68BLS	Extension base unit with power supply	420	400	M5
Q65BLS	Extension base unit with power supply	315	295	
Q55BLS	Extension base unit without power supply	260	240	

#### AnS-size Q series large type base unit DIN rail installation type



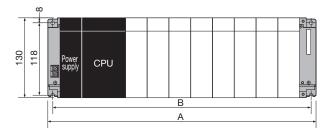
AnS-size Q series large type base unit model	Description	А
Q38BLS-D	Main base unit	416
Q35BLS-D	iviain base unit	311
Q68BLS-D	Extension base unit with power supply	409
Q65BLS-D	Extension base unit with power supply	304
Q55BLS-D	Extension base unit without power supply	248

#### • MELSEC-Q series base unit



MELSEC-Q series base unit model	Description	А	В	С	Mounting screw hole size
Q312B		439	419	15.5	
Q38B	Main base unit	328	308	15.5	
Q35B	iviain base unit	245	224.4	15.5	
Q33B		189	169	15.5	
Q612B		439	417	15.5	M4
Q68B	Extension base unit	328	306	15.5	1014
Q65B	with power supply	245	222.4	15.5	
Q63B		189	167	15.5	
Q55B	Extension base unit	189	167	15.5	
Q52B	without power supply	106	83.5	15.5	

#### • (Reference) New Satellite JW Series base unit



New Satellite JW Series base unit model	Description	А	В	Mounting screw hole size
JW-28KB, JW-38KB	JW20H/30H series	437	421	
JW-26KB, JW-36KB	main base unit	368	352	
JW-24KB, JW-34KB	main base unit	297	281	
JW-318KB	JW300 series	403.5	387.5	
JW-316KB	main base unit	332.5	316.5	M5
JW-314KB	main base unit	261.5	245.5	
JW-38ZB	Extension base unit	368	352	
JW-36ZB	with power supply	297	281	
JW-34ZB	with power supply	226	210	

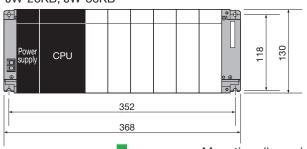
#### Comparison of External Dimensions and Mounting Hole Dimensions for Replacements

Use the following tables to check the differences of external dimensions and mounting hole dimensions before and after replacement.

## Note

"A" indicates that the dimensions will be larger after replacement as shown in the example below. Reconsider the installation position. If there are not enough mounting slots, use an extension base unit.

Example) Replacing the New Satellite JW Series (JW-26KB, JW-36KB) with the AnS-size Q series large type base unit (Q38BLS) JW-26KB, JW-36KB Q38BLS





Mounting dimensions: 58mm larger External dimensions: 62mm larger

# Replacing with AnS-size Q series large type base unit or MELSEC Q series base unit

1. When using a main base unit

6

Yes

	JW series	base unit	t		AnS-size	Q series l	arge type	base unit	t		MELSEC-Q series base unit							
		Includes	Maximum number of	Model	Includes	Maximum number of	Comparison*1 (AnS-size Q series large type JW series)			JW series)	Model	Includes Includes				series)	Remarks	
	Model	supply	slots	iviodei	supply	slots	External d			imensions*2	iviodei	supply	slots	External d	limensions	Mounting D	imensions *2	
		Supply	31013		Supply	31013	Width	Height	Width	Height		опры	31013	Width	Height	Width	Height	
	JW-28KB/	Yes	8	Q38BLS	Yes	8	0		0	0	Q312B	Yes	12	(2)	(-32)	(-2)		You may need to reconsider the panel positions depending on
	JW-38KB	165	0	QOODLO	162	0	(-7)		(-11)	(-8)	Q38B	Yes	8	(-109)	(-32)	(-113)	(-38)	the external dimensions and mounting hole pitches.
				Q38BLS	Yes	8	(62)	0	(58)	(-8)	Q312B	Yes	12	(71)	(-32)	(67)	(-38)	·You may need to reconsider the
	JW-26KB/	Voc	ا ء ا				(02)	-	(30)	(0)	OOOD	Vaa	0	0	0	0	0	panel positions depending on

Q38B

Yes

Yes

(-40)

(-32)

(-72.5) (-32) (-76.5)

(-44)

(-38)

the external dimensions and JW-36KB (-8) Q35BLS 5 (-43) 0 (-47) Q35B Yes (-32) (-127.6) (-123) (-38) (27) Q38B Yes 8 (31) (-32) (-38) You may need to reconsider the JW-24KB/ panel positions depending on 5 (28) 0 Yes Q35BLS Yes (-8) Q35B Yes 5 (24) (-32) (-56.6) (-52) (-38) JW-34KB Q33B mounting hole pitches. (-108) (-32) (-112) (-38) You may need to reconsider the Q312B Yes 12 (-32) (31.5) (-38) 8 8 0 panel positions depending or JW-318KB Yes Q38BLS (26.5) (22.5) Yes the external dimensions and mounting hole pitches. O38B Yes (-75.5) (-32) (-79.5) (-38) Q312B (97.5) (93.5) (10<u>6.5)</u> (-8) (-32) (102.5) Q38BLS 8 You may need to reconsider the 6 panel positions depending on JW-316KB Q38B Yes (-4.5) (-32) (-8.5) (-38) the external dimensions and Q35BLS 0

(-11.5) mounting hole pitches. Q35B Yes (-87.5) (-32) (-92.1) (-38) Q38B (66.5) (-32) (62.5) ·You may need to reconsider the (-38) panel positions depending on the external dimensions and Q35BLS 5 (63.5) Q35B Yes JW-314KB Yes (-16.5) (-32) (-21.1) (-38)

Q33B

\*2: Exercise caution when distance between holes is near.

mounting hole pitches.

©: Same, ○: JW series is larger, ▲: JW series is smaller

2. when us	When using an extension base unit												©: S	ame, 🔾:	JW ser	ies is larç	ger, ▲: JW series is smaller	
JW series	base unit	t		AnS-size	Q series I	arge type	base unit	t			MEL	SEC-Q se	eries base	unit				
Model		Maximum number of slots	Model	power	Maximum number of	(IVIELS	Compa SEC-Q ser	ries - JW		Model	power					Remarks		
	supply	SIOTS		supply	SIOTS	Width	Height	Width	Height		supply	slots	Width	Height	Width	Height		
IW 207D	Yes	8	Q68BLS	Yes	8	_	0	•	0	Q612B	Yes	12	(71)	(-32)	(65)	(-38)	·You may need to reconsider the panel positions depending on	
JW-38ZB	103		Q00BLS	163	0	(52)		(48)	(-8)	Q68B	Yes	8	(-40)	(-32)	(-46)	(-38)	the external dimensions and mounting hole pitches.	
			Q68BLS	Yes	8	(123)	0	(119)	(-8)	Q612B	Yes	12	(142)	(-32)	(136)	(-38)		
							_	(***)	(-)	Q68B	Yes	8	(31)	(-32)	(25)	(-38)	<ul> <li>You may need to reconsider the panel positions depending on</li> </ul>	
JW-36ZB	Yes 6	Yes	6	Q65BLS	Yes	5	(18)	0	(14)	(-8)	Q65B	Yes	5	0	0	0	0	the external dimensions and
			Q55BLS	No	5	0	0	(41)	0 0 -				(-52)	(-32)	(-58.6)	(-38)	mounting hole pitches.	
			QUUBLO	INO	5	(-37)		(-41)	(-8)	Q55B	No	5	(-108)	(-32)	(-114)	(-38)		
			Q68BLS	Yes	8	(194)	0	(190)	(-8)	Q68B	Yes	8	(102)	(-32)	(96)	(-38)		
		4				(104)		(150)	( 0)	Q65B	Yes	5	(19)	(-32)	(12.4)	(-38)	·You may need to reconsider the	
JW-34ZB	Yes		Q65BLS	Yes	5	(89)	0	(85)	(-8)	Q63B	Yes	3	(-37)	(-32)	(-43)	(-38)	panel positions depending on the external dimensions and	
			,					_	0	Q55B	No	5	(-37)	(-32)	(-43)	(-38)	mounting hole pitches.	
			Q55BLS	No	5	(34)	0	(30)	(-8)	Q52B	No	2	(-120)	(-32)	(-126.5)	(-38)		

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the MELSEC-Q series compatible modules and JW series modules.

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the MELSEC-Q series compatible modules and JW series modules.

<sup>\*2:</sup> Exercise caution when distance between holes is near

#### **Slot Positions**

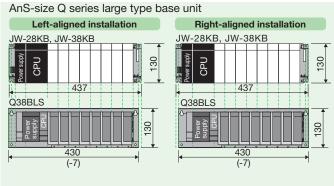
The slot positions differ between the New Satellite JW Series and the MELSEC-Q series. After replacement, change the slot positions of modules and adjust the length of cables.

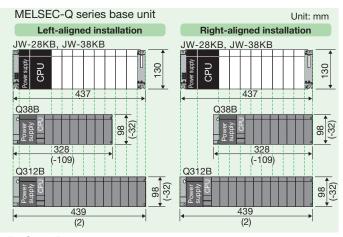
#### Note

The size of mounting holes for the AnS-size Q series large type base unit is the same as that for the New Satellite JW Series, and therefore the mounting holes are used as the reference for left-aligned and right-aligned installations. For MELSEC-Q series base units, the size of mounting holes are different from that for the New Satellite JW Series, and therefore the edge of the base unit is used as the reference for left-aligned and right-aligned installations. Values in parentheses indicate differences in external dimensions with New Satellite JW Series modules.

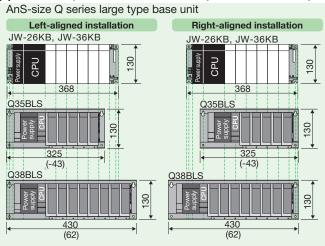
# When using a main base unit

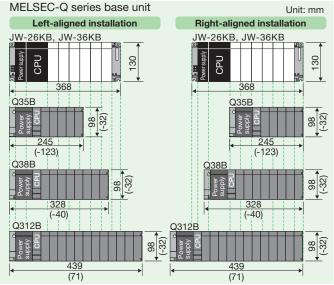
### (1) JW-28KB, JW-38KB $\rightarrow$ Q38BLS / Q38B, Q312B



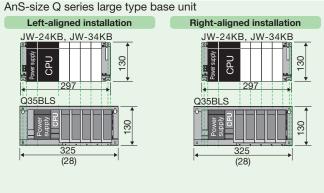


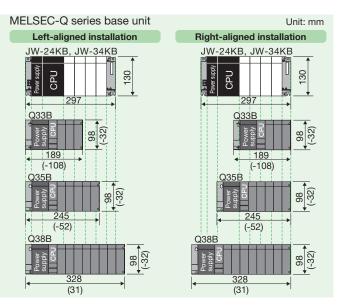
## (2) JW-26KB, JW-36KB $\rightarrow$ Q35BLS, Q38BLS / Q35B, Q38B, Q312B



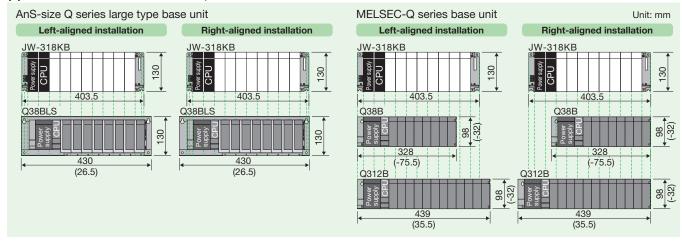


#### (3) JW-24KB. JW-34KB → Q35BLS / Q33B. Q35B. Q38B

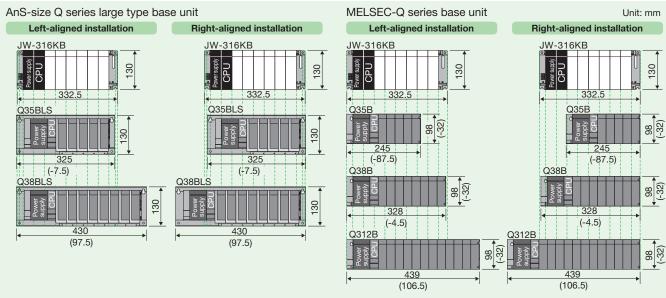




## (4) JW-318KB $\rightarrow$ Q38BLS / Q38B, Q312B



### (5) JW-316KB $\rightarrow$ Q35BLS, Q38BLS / Q35B, Q38B, Q312B

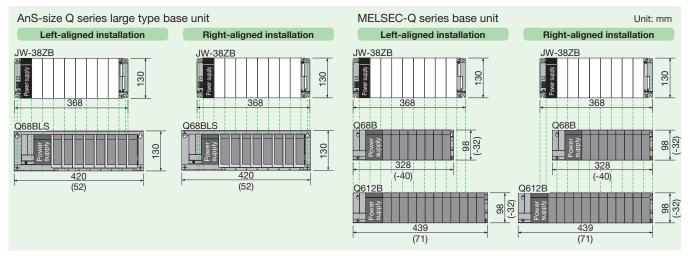


#### (6) JW-314KB → Q35BLS / Q33B, Q35B, Q38B

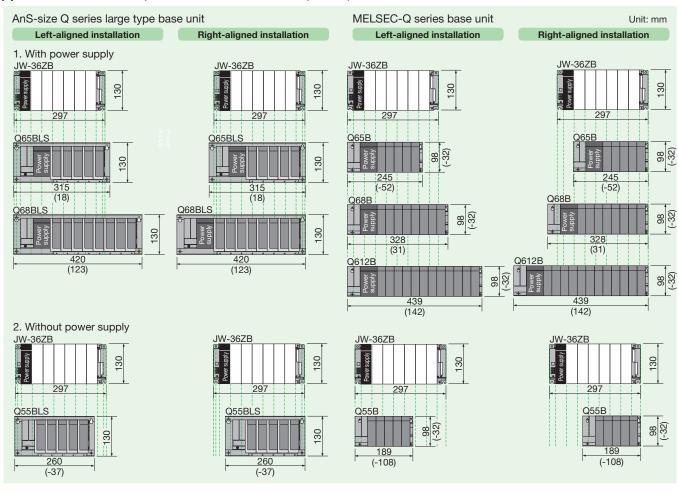


# Mileli nəlliğ alı evteliəldi nase ni

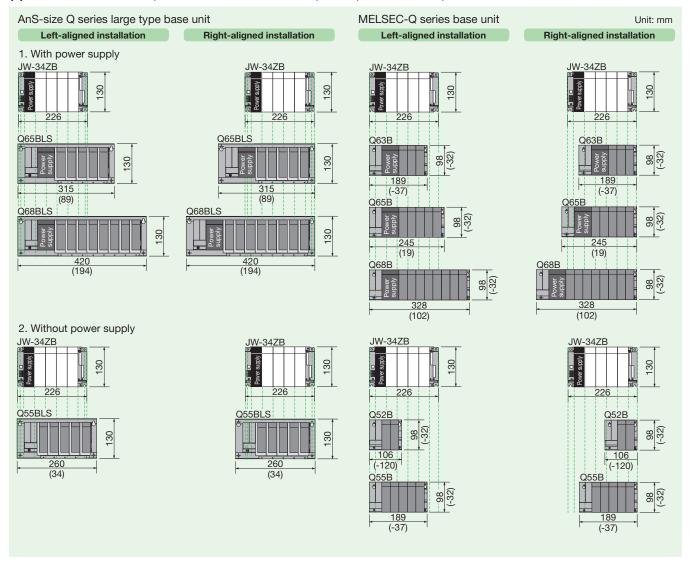
## (1) JW-38ZB $\rightarrow$ Q68BLS / Q68B, Q612B



### (2) JW-36ZB $\rightarrow$ Q65BLS, Q68BLS / Q55BLS / Q65B, Q68B, Q612B / Q55B



## (3) JW-34ZB $\rightarrow$ Q65BLS, Q68BLS / Q55BLS / Q63B, Q65B, Q68B / Q52B, Q55B

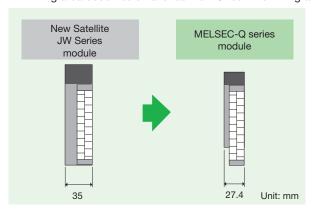


# **Usage Precautions**

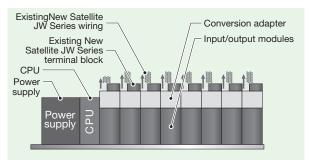
#### **Module Width**

We recommend that you use the Mitsubishi Electric AnS-size Q series large type base unit (wiring space of 34.5mm) if wiring in the following scenario (1) causes interference with other mounted modules.

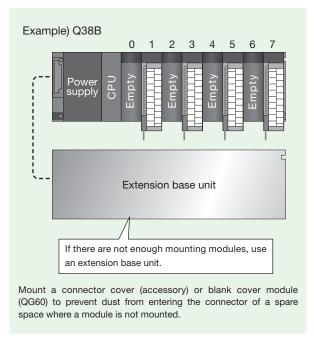
(1) Since the width of MELSEC-Q series modules is smaller (New Satellite JW Series: 35mm → MELSEC-Q series: 27.4mm), the wiring area becomes smaller as well. Check the wiring area when mounting a conversion adapter.



(2) If the wiring causes interference with adjacent modules, take an action such as lifting the wiring forward to prevent interference.



(3) If interference still occurs even when you lift the wiring, keep the next slot open to secure a space for wiring.



#### **Depth**

The following tables list the depth dimensions. The depth is larger, so verification is required for mounting. The values in parentheses, which are 9mm smaller, represent the depth when the Mitsubishi Electric AnS-size Q series large type base unit is not used.

		New Sar	tellite JW : New Satellite JW Series	MELSEC-Q : MELSEC-Q series
Conversion adapter	ERNT-2JQ210NS		ERNT-2JQ212S	ERNT-2JQ234N264N ERNT-2JQ232S262S
MELSEC-Q series module	QX10/QX40/QX40-S1/ QX70/QX80/QY10	QY22	QY40P/QY50/QY70	QX41/QX41-S1/ QX41-S2/QX71/QY41H
Depth	137.5mm (128.5mm)	159.5mm (150.5mm)	137.5mm (128.5mm)	180.1mm (171.1mm)
Mounting diagram	New Satellite JW + Upgrade Tool  110 137.5 (128.5)  Increase 27.5mm (18.5mm)	New Satellite JW  Upgrade Tool  Increase  49.5mm (40.5mm)	New Satellite JW  H Upgrade Tool  110  137.5 (128.5)  Increase  27.5mm (18.5mm)	New Satellite JW + Upgrade Tool  147

<sup>\*:</sup> Each depth is measured from the panel surface.

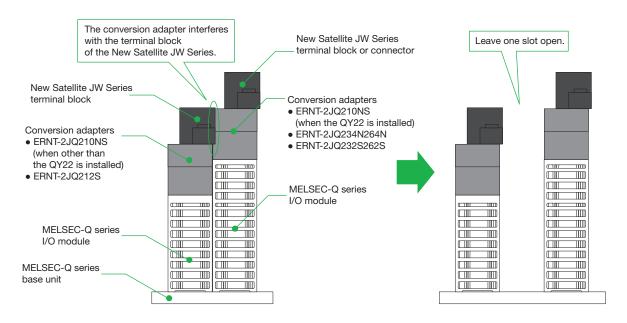
New Satellite JW Series: Base unit + Input/output modules + Terminal block (connector)

MELSEC-Q series + Upgrade tool: Base unit + Input/output modules + Conversion adapter + Terminal block (connector)

### **Check for Interference with Adjacent Modules**

We recommend that you use the Mitsubishi Electric AnS-size Q series large type base unit because some combinations of adjacent conversion adapters cause interference of the terminal blocks.

Leave one slot open to prevent interference of the terminal blocks when the MELSEC-Q series base unit is used and the adjacent conversion adapters are as follows.

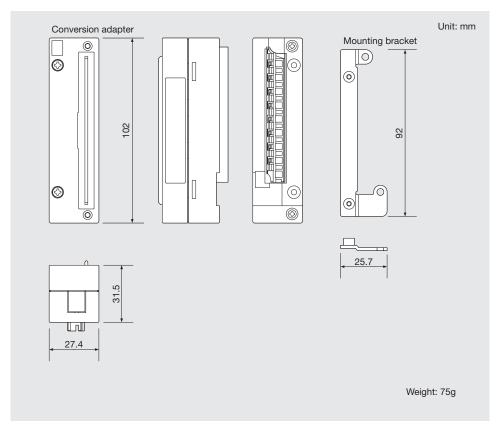


# **External Dimensions**

# **Conversion Adapter**

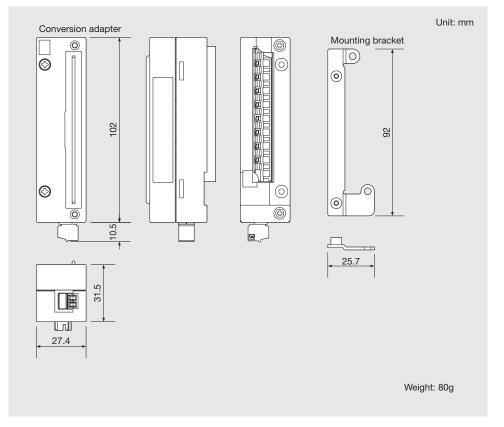


Model name: **ERNT-2JQ210NS** 





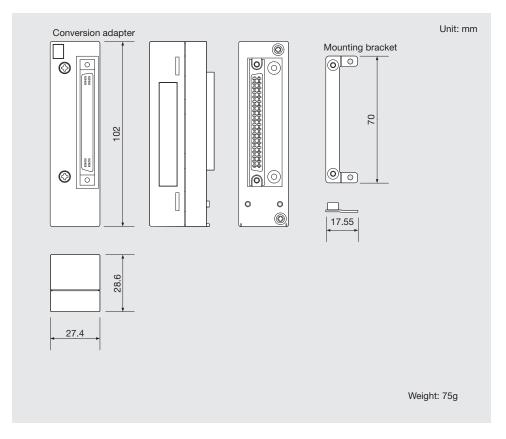
Model name: ERNT-2JQ212S







Model names: ERNT-2JQ234N264N ERNT-2JQ232S262S





# 

# Upgrading from the MEMOCON-SC GL Series (2000 Series I/O) to the MELSEC-Q Series

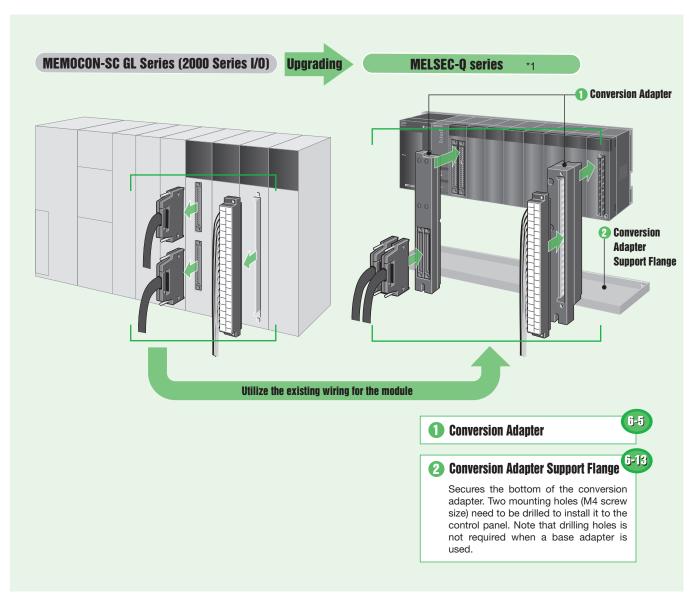
- Simplifies replacement with the MELSEC-Q series

  The upgrade tool makes it easy to replace YASKAWA PLC MEMOCON-SC GL Series I/O modules (2000 Series I/O) with Mitsubishi programmable controller MELSEC-Q series.
- Significantly shortens the time required for input and output module wiring, and significantly reduces wiring errors

  The upgrade tool allows you to connect the wiring connected to the MEMOCON-SC GL Series (2000 Series I/O) input and output modules as is to the MELSEC-Q series using a conversion adapter. (Some power supply and common terminal connection changes required.)

## **Product Overview**

This upgrade tool comprises a "conversion adapter" that is used to transfer the existing wiring of YASKAWA PLC MEMOCON-SC GL Series (GL40S/60S/60H/70H) input/output modules (2000 Series I/O) to the Mitsubishi programmable controller MELSEC-Q series input/output modules, and a "conversion adapter support flange" that is used to secure the conversion adapter at the bottom.



<sup>\*1:</sup> When replacing YASKAWA Electric PLC MEMOCON-SC GL Series (GL40S/60S/60H/70H) input/output modules (2000 Series I/O) with Mitsubishi programmable controller MELSEC-Q series, verification of the mounting is required due to the change in module width and depth dimensions. There may be a case that the terminal block of the conversion adapter interferes with the adjacent conversion adapter. For details, refer to "Usage Precautions" on page 6-28 in this catalog.

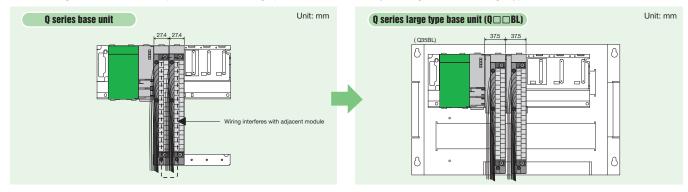
#### MITSUBISHI ELECTRIC CORPORATION

# **Upgrading using the Q series large type base unit**

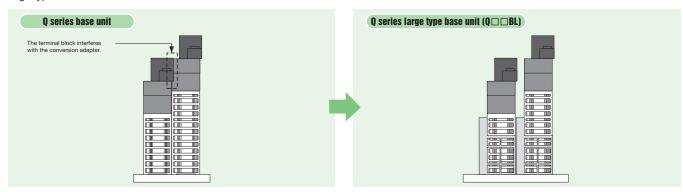
Using the Mitsubishi Electric Q series large type base unit (Q DBL) eliminates the need to secure wiring space and check for interference between adjacent conversion adapter terminal blocks.

Note that the pitch of mounting holes in some models are similar to that in the GL Series, and therefore mounting positions must be reconsidered.

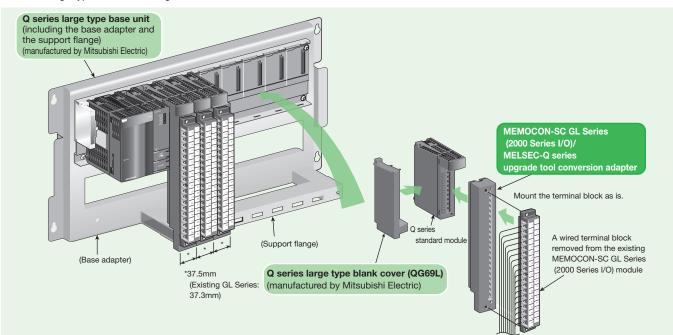
•If the wiring interferes with an adjacent module, wiring space can be secured by utilizing the Q series large type base unit.



•If the terminal block of a conversion adapter interferes with the adjacent conversion adapter, interference can be avoided by using the Q series large type base unit.



•Q series large type base unit configuration



- •The 2-slot type conversion adapter is not applicable.
- •For details on mounting dimensions, refer to page 6-18 in this catalog.

#### Q Series Large Type Base Unit List

Model	Description	Number of slots
Q38BL	Main base unit	8
Q35BL	Main base unit	5
Q68BL	Extension base unit with	8
Q65BL	power supply	5
Q55BL	Extension base unit without power supply	5

#### **Q Series Large Type Blank Cover**

Model	Description
QG69L	Used to adjust gaps between modules

# **Model List**

# Conversion adapter

When selecting a conversion adapter, be sure to refer to the module specification comparison charts and notes on pages 6-5 to 6-12. These pages describe precautions such as differences in the number of points per common. For detailed specifications and general specifications not described in the module specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

#### For Input/Output Modules

[1-slot type] (Applicable to MELSEC-Q series large type base units (Q BL) as well)

				Conversion a	adapter		
Input/Output	MEMOCON-SC GL Series (2000 Series I/O) module model	MELSEC-Q series module model		Sha	ıpe	No. of input/	Page
Input/Output (2000)  JAN JAN JAN JAN JAN JAN JAN JAN JAN JA	before replacement	after replacement	Model	2000 Series I/O	MELSEC-Q series	output points	. ago
	JAMSC-B2501A	QX10	ERNT-1Y2Q501	Terminal block	Terminal block		6-5
	JAMSC-B2601	QX40, QX40-S1, QX70 +3	FDNT 1V00601611	(20 points)	(18 points)	16	6-5
JAMSC-B2611 JAMSC-B2603	QX50	ERNT-1Y2Q601611	(20 points)	(16 points)		0-5	
	JAMSC-B2603	QX41, QX41-S2, QX71 -8	ERNT-1JQ32N34N*1	Terminal block	Connector (40P)	32	6-6
прис	JAMSC-B2607	QX71	LIMI-10Q0ZNO4N	(38 points)	Connector (401)		0 0
	JAMSC-B2605	QX42, QX42-S1, QX72 *5		Connector	Connector		
	JAMSC-B2615	QX42, QX42-31, QX72	ERNT-1Y2Q615625	(40P) × 2	(40P) × 2	64	6-7
	JAMSC-B2625	QX72		(40F) X Z	(40F) X Z		
	JAMSC-B2500	QY22	ERNT-1Y2Q500	Terminal block	Terminal block	10	6-8
	JAMSC-B2600	QY40P, QY50	ERNT-1Y2Q600	(20 points)	(18 points)	16	6-9
Output	JAMSC-B2602A	QY41H *6	ERNT-1Y2Q602606	Terminal block	Connector	32	6.0
	JAMSC-B2606	QITIII	ENNI-112Q002000	(38 points)	(40P)	32	6-9
	JAMSC-B2604	QY42P	ERNT-CQCY213 <sup>-2</sup>	Connector (40P) × 2	Connector (40P) × 2	64	6-10

<sup>\*1:</sup> A conversion adapter for replacing SHARP JW Series modules (large type) with MELSEC-Q series must be used.

#### [2-slot type] (Not applicable to MELSEC-Q series large type base units (Q BL))

	MEMOCON-SC GL Series		Conversion adapter						
Input/Output	(2000 Series I/O)	MELSEC-Q series module		Мо	No. of input/	Page			
	module model before replacement	model after replacement	Model	2000 Series I/O	MELSEC-Q series	output points	rugo		
Input	JAMSC-B2505A	QX10 × 2	ERNT-1Y2Q505		I I		6-11		
	JAMSC-B2504	QY22 × 2	ERNT-1JQ33S <sup>'9</sup>				6-11		
Output	JAMSC-B2902	QY10 × 2	ERNT-1JQ31N34S <sup>-9</sup>	Terminal block	Terminal block	32	6-12		
Output ⊢	JAMSC-B2904	QY18A × 2	ERNT-1Y2Q904914	(38 points)	(18 points) × 2		6-12		
	JAMSC-B2914	QTIOA X Z	ENN1-112Q904914				0-12		

<sup>\*9:</sup> A conversion adapter for replacing SHARP JW Series modules (large type) with MELSEC-Q series must be used.

#### ☆ Universal conversion adapter (\*Requires rewiring. For details, refer to page 7-1 in this catalog.)

Input/output modules in the table below do not support the use of a conversion adapter. These modules, however, can be replaced by using a universal conversion adapter even though rewiring is required. Check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

#### For Input/Output Modules

Input/Output	MEMOCON-SC	GL Series (2000 Series I/O) modu	le model		MELSEC-Q series modu		Universal	
input/Output	Model	Specifications	No. of points	Model	Specifications	No. of points	No. of required modules	conversion adapter
Innut -	JAMSC-B2503A	200VAC	16	QX28	100-240VAC	8	2	*10
input	JAMSC-B2507A	200VAC	32	QX28	100-240VAC	8	4	*10
	JAMSC-B2912	100/200VAC, 24VDC	32	QY10	100-200VAC, 24VDC	16	2	*10
	JAMSC-B2610	48VDC sink type	16	There is no	applicable MELSEC-Q series m	odule.		
Output	JAMSC-B2624	5VDC sink type	64	QY41H	5/12/24VDC sink type	32	2	*10
	JAMSC-B2630	12/24VDC source type	16	QY80	12/24VDC source type	16	1	*10
	JAMSC-B2632	12/24VDC source type	32	QY81P	12/24VDC source type	32	1	*10

<sup>\*10:</sup> The universal conversion adapter (refer to page 7-5) can be used for replacement.

<sup>\*2:</sup> A conversion adapter for replacing OMRON SYSMAC C series modules with MELSEC-Q series must be used.

<sup>\*3:</sup> Consider rewiring to the QX80 if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB20 in such cases.

<sup>\*4:</sup> Consider rewiring to the QX81 or QX81-S2 if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB38-E in such cases.

<sup>\*5:</sup> Consider rewiring to two QX81s or two QX81-S2s if the existing module uses the 24VDC negative common.

<sup>\*6:</sup> Consider rewiring to the QY50 (0.5A, 16 points) or QY68A (2A, 8 points) if current capacity is required. Also consider using the ERNT-AQTB20 in such cases.

<sup>\*7:</sup> Consider rewiring to the QX40H or QX80H if the existing module uses different power supplies for each 8-point group. Also consider using the ERNT-AQTB20 in such cases.

<sup>\*8:</sup> Consider rewiring to two QX40Hs or two QX80Hs if the existing module uses different power supplies for each 8-point group. Also consider using the ERNT-AQTB20 in such cases.

# **2** Conversion adapter support flange (required)

The same conversion adapter support flange used to replace MELSEC-A series with MELSEC-Q series is used.

A conversion adapter support flange secures the bottom of a conversion adapter. One support flange is required per base unit when a conversion adapter is used.

#### **Note**

For panel surface installation, drilling screw holes (M4 screw, 2 locations) is required.

Note that drilling holes is not required when a base adapter is used.

Conversion adapter support flange model	Specifications	Page
ERNT-AQF12	12-slot conversion adapter support flange	
ERNT-AQF8	8-slot conversion adapter support flange	6-13
ERNT-AQF5	5-slot conversion adapter support flange	0-13
ERNT-AQF3	3-slot conversion adapter support flange	

# Base adapter

The same conversion adapter support flange used to replace MELSEC-A series with MELSEC-Q series is used.

Both the MELSEC-Q series base unit and the conversion adapter support flange can be installed on the base adapter without drilling screw holes. For the base unit models marked with \*1 to \*5, two or more base adapter models are applicable.

Two additional mounting holes (M5 screw) and four M5 screws need to be prepared by the user to install the base adapter to the control panel. (Additional mounting holes are not required if the mounting dimensions before and after replacement are the same and the existing four mounting holes can be used.)

				Mou	ıntable		Product dimensions	
Base adapter model		MELSE	C-Q series ba	se unit	Conversion adapter support flange	Width × Height	Page	
	12 slots	8 slots	5 slots	3 slots	2 slots	Conversion adapter support narige	(mm)	
EDNIT A ODGO	Q312B					ERNT-AQF12, ERNT-AQF8	480 × 240	
ERNT-AQB38		Q38B (*1)			ERNT-AQF8		400 X 240	
ERNT-AQB35		Q38B (*1)				ERNT-AQF8, ERNT-AQF5	382 × 240	
LITIVI-AQDOO			Q35B			ERNT-AQF5	302 × 240	
ERNT-AQB32				Q33B		ERNT-AQF3	247 × 240	
ERNT-AQB68	Q612B					ERNT-AQF12, ERNT-AQF8	466 × 240	6-17
LINT / QDOO		Q68B (*2)				ERNT-AQF8	400 / 240	
		Q68B (*2)				ERNT-AQF8, ERNT-AQF5		
ERNT-AQB65			Q65B (*3) Q55B (*4)			ERNT-AQF5	352 × 240	
ERNT-AQB62				Q63B	Q52B (*5)	ERNT-AQF3	238 × 240	
ERNT-AQB58		Q68B (*2)				ERNT-AQF8	411 × 240	
ERNT-AQB55			Q65B (*3) Q55B (*4)			ERNT-AQF5	297 × 240	
ERNT-AQB52					Q52B (*5)	ERNT-AQF3	183 × 240	

# **Conversion Adapter**

#### **Specifications**

## For Input/Output Modules

1-slot type (Applicable to MELSEC-Q series large type base units (Q DBL) as well)

#### (1) ERNT-1Y2Q501 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of input points	MELSEC-Q series module model
ERNT-1Y2Q501	JAMSC-B2501A	16	QX10
MEMOCON-SC GL Series (2000 Series I/O) terminal block	Synt name	Immidute   State   TB 1	MELSEC-Q series terminal block (02 (03

#### [Specification comparison chart]

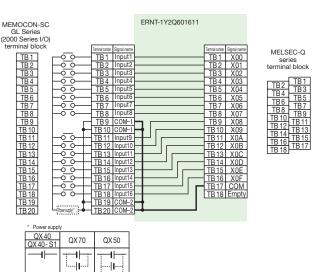
Cobecini	[opecinication companison chart]						
Model		MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series				
Specificat	tions	JAMSC-B2501A	QX10				
No. of inp	out points	16	16				
Rated inp	ut voltage	100-120VAC, 50/60Hz	100-120VAC, 50/60Hz				
Rated inp	ut current	Approx. 10mA (100VAC, 60Hz)	Approx. 8mA (100VAC, 60Hz) Approx. 7mA (100VAC, 50Hz)				
Input impedance		Approx. 10kΩ (60Hz)	Approx. 12kΩ (60Hz) Approx. 15kΩ (50Hz)				
Inrush cu	rrent	_	Max. 200mA 1ms (132VAC)				
Operating	ON	-	80VAC / 5mA				
voltage/ current	OFF	-	30VAC / 1.7mA				
Response	OFF→ON	15ms or less	15ms or less				
time ON→OFF 25ms or less		25ms or less	20ms or less				
Isolation	method	Photocoupler isolation	Photocoupler isolation				
Wiring method	d for common	8 points/common	16 points/common				
External i	nterface	20-point terminal block	18-point terminal block				

- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9 and TB18 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.

  2. For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy

#### (2) ERNT-1Y2Q601611 Terminal block (20P)→Terminal block (18P)

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of input points	MELSEC-Q series module model
ERNT-1Y2Q601611	JAMSC-B2601	16	QX40 QX40-S1 QX70
	JAMSC-B2611	16	QX50



- Notes 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9/TB10 and TB19/TB20 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.

  2. For ☐ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

  3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

  4. Consider rewiring to the QX80 if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB20 in such cases.

  5. Consider rewiring to the QX40H or QX80H if the existing module uses different power supplies for each 8-point group. Also consider using the ERNT-AQTB20 in such cases.

24VDC

5/12VDC

	Model	MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series		
		JAMSC-B2601 Positive common/negative	QX40 Positive	QX40-S1 Positive	QX70 Positivecommon/ negativecommon
Specifica		common shared type	common type	common type	shared type
No. of in	out points	16	16	16	16
Rated inp	out voltage	12/24VDC	24VDC	24VDC	5/12VDC
Rated inp	out current	Approx.10mA (24VDC) Approx. 5mA (12VDC)	Approx. 4mA	Approx. 6mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)
Input imp	edance	Approx. 2.4kΩ	Approx. 5.6kΩ	Approx. 3.9kΩ	Approx. 3.3kΩ
Inrush cu	ırrent	_	_	_	_
Operating voltage/	ON	8V	19V / 3mA	19V / 4mA	3.5V / 1mA
current	OFF	4V	11V / 1.7mA	11V / 1.7mA	1V / 0.1mA
Response	OFF→ON	5ms or less	1/5/10/20 /70ms or less	0.1/0.2/0.4/0.6 /1ms or less	1/5/10/20 /70ms or less
time	ON OFF	5ms or less	1/5/10/20	0.1/0.2/0.4/0.6	1/5/10/20
ON→OFF		Jills Of less	/70ms or less	/1ms or less	/70ms or less
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring metho	d for common	8 points/common	16 points/common	16 points/common	16 points/common
External	interface	20-point terminal block	18-point terminal block	<del></del>	

Model		MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series		
Specifica	tions	JAMSC-B2611 Positive common/ negative common shared type		QX50 DC: Positive common/ negative common shared type	
No. of inp	out points	16	16	3	
Rated inp	ut voltage	48VDC	48VDC	48VAC	
Rated inp	ut current	Approx. 9.4mA	Approx. 4mA		
Input imp	edance	ce Approx. 5kΩ Approx. 1		11.2kΩ	
Operating	ON	30V	28V / 2.5mA		
voltage/ current	OFF	20V	10V / 1	I.0mA	
Response	OFF→ON	5ms or less	5ms or less	15ms or less	
time	ON→OFF	5ms or less	20ms or less 20ms or less		
Isolation	method	Photocoupler isolation	Photocoupler isolation		
Wiring metho	d for common	8 points/common	16 points	/common	
External i	interface	20-point terminal block	18-point ter	minal block	

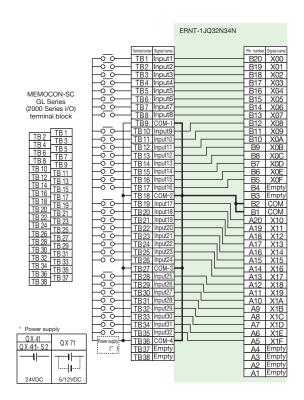
## (3) ERNT-1JQ32N34N Terminal block (38P)→Connector (40P)

Conversion adapter model	MEMOCON-SC GL Series	No. of	MELSEC-Q series
Conversion adapter model	(2000 Series I/O) module model	input points	module model
			QX41
ERNT-1JQ32N34N*1	JAMSC-B2603	32	QX41-S2
ERNI-IJQ32N34N			QX71
	JAMSC-B2607	32	QX71

<sup>\*1:</sup> A conversion adapter for replacing SHARP JW Series modules (large type) with MELSEC-Q series must be used.

MELSEC-Q

B17 B16 B15 B14 B13 B11 B10 B9 B8 B7 B6 B5 B4 B3 B1



	Model	MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series			
		JAMSC-B2603	QX41	QX41-S2	QX71	
Specifica	ations	Positive common/negative common shared type	Positive common type	Positive common type	Positive common/negative common shared type	
No. of inpu	ut points	32	32	32	32	
Rated inpu	ut voltage	12/24VDC	24VDC	24VDC	5/12VDC	
Rated inpu	ut current	Approx. 10mA (24VDC) Approx. 5mA (12VDC)	Approx. 4mA	Approx. 6mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)	
Input imp	edance	Approx. 2.4kΩ	Approx. 5.6kΩ	Approx. 3.6kΩ	Approx. 3.3kΩ	
Inrush cu	urrent	-	1	_	_	
Operating	ON	9V	19V / 3mA	15V / 3mA	3.5V / 1mA	
voltage/ current	OFF	6V	11V / 1.7mA	5V / 1.7mA	1V / 0.1mA	
	OFF ON		1/5/10/20	1/5/10/20	1/5/10/20	
Response	OFF→ON	7ms or less	/70ms or less	/70ms or less	/70ms or less	
time	ON→OFF	40	1/5/10/20	1/5/10/20	1/5/10/20	
	UN→UFF	10ms or less	/70ms or less	/70ms or less	/70ms or less	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Wiring method	for common	8 points/common	32 points/common	32 points/common	32 points/common	
External i	nterface	38-point terminal block	40-pin connector	40-pin connector	40-pin connector	

Model		MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series	
·		JAMSC-B2607	QX71	
		Positive common/negative	Positive common/negative	
Specifica	ations	common shared type	common shared type	
No. of inpu	ut points	32	32	
Rated inpu	ıt voltage	5/12VDC	5/12VDC	
		Approx. 11mA	Approx. 3.3mA	
Rated in	put	(12VDC)	(12VDC)	
current		Approx. 4mA	Approx. 1.2mA	
		(5VDC)	(5VDC)	
Input imp	edance	Approx. 1.2kΩ	Approx. 3.3kΩ	
Inrush cu	urrent	_	_	
Operating	ON	3.5V	3.5V / 1mA	
voltage/ current	OFF	1.0V	1V / 0.1mA	
	055 011		1/5/10/20	
Response	OFF→ON	0.5ms or less	/70ms or less	
time			1/5/10/20	
	ON→OFF	0.5ms or less	/70ms or less	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Wiring method	for common	8 points/common	32 points/common	
External i	nterface	38-point terminal block	40-pin connector	

- Notes 1. In a case where the number of points per common changes from 8 (four circuits) to 32 and the terminal numbers TB9, TB18, TB27, and TB36 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.

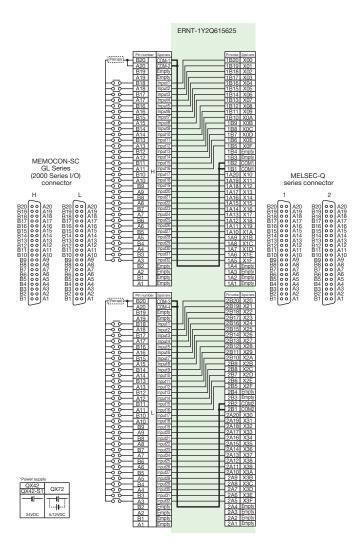
  For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules
  - satisfy the specifications of devices and equipment to be connected.
  - For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
  - Consider rewiring to the QX81 or QX81-S2 if the existing module uses the 24VDC negative common. Also consider using the ERNT-AQTB38-E in such cases.
  - 5. Consider rewiring to two QX40Hs or two QX80Hs if the existing module uses different power supplies for each 8-point group. Also consider using the ERNT-AQTB20 in such cases.

#### (4) ERNT-1Y2Q615625 Connector (40P) $\times$ 2 $\rightarrow$ Connector (40P) $\times$ 2

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of input points	MELSEC-Q series module model
	JAMSC-B2615	64	QX42 QX42-S1 QX72
ERNT-1Y2Q615625	JAMSC-B2625	64	QX72
			QX42
	JAMSC-B2605	64	QX42-S1
			QX72

 $\textbf{JAMSC-B2615} \rightarrow \textbf{QX42/QX42-S1/QX72}$ 

JAMSC-B2625 → QX72



#### [Specification comparison chart]

	Model	MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series			
Specific	ations	JAMSC-B2615 Positive common/negative common shared type	QX42 QX42-S1 Positive common type type		QX72 Positive common/negative common shared type	
No. of inp	ut points	64	64	64	64	
Rated inp	ut voltage	12/24VDC	24VDC	24VDC	5/12VDC	
Rated inp	ut current	Approx. 5mA (24VDC) Approx. 2.5mA (12VDC)	Approx. 4mA Approx. 4mA App		Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)	
Input imp	oedance	Approx. 4.7kΩ	Approx. 5.6kΩ	Approx. 5.6kΩ	Approx. 3.3kΩ	
Inrush c	urrent	_	_	_	_	
Operating voltage/	ON	9V	19V / 3mA	19V / 3mA	3.5V / 1mA	
current	OFF	6V	11V / 1.7mA	9.5V / 1.5mA	1V / 0.1mA	
	OFF→ON	5ms or less	1/5/10/20	0.1/0.2/0.4	1/5/10/20	
Response	011 011	01110 01 1000	/70ms or less	/0.6/1ms or less	/70ms or less	
time	ON→OFF	10ms or less	1/5/10/20	0.1/0.2/0.4	1/5/10/20	
	ONTOFF	TOTAS OF IESS	/70ms or less	/0.6/1ms or less	/70ms or less	
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	
Wiring methor	d for common	16 points/common	32 points/common	32 points/common	32 points/common	
External	interface	40-pin connector × 2	40-pin connector × 2	40-pin connector × 2	40-pin connector × 2	

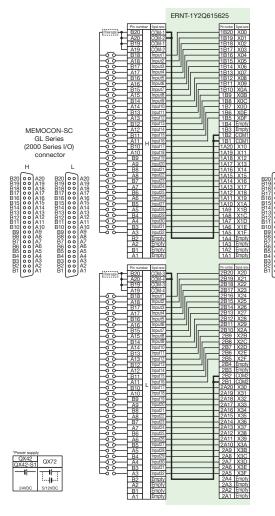
Model		MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series
Specific	ations	JAMSC-B2625 Positive common/negative common shared type	QX72 Positive common/negative common shared type
No. of inp		64	64
Rated inpi		5VDC	5/12VDC
Rated input current		Approx. 3.2mA (5VDC)	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)
Input imp	edance	Approx. 1.5kΩ	Approx. 3.3kΩ
Inrush c	urrent		_
Operating voltage/	ON	3V	3.5V / 1mA
current	OFF	2V	1V / 0.1mA
Response	OFF→ON	1ms or less	1/5/10/20 /70ms or less
time	ON→OFF	1ms or less	1/5/10/20 /70ms or less
Isolation	method	Photocoupler isolation	Photocoupler isolation
Wiring method	for common	16 points/common	32 points/common
External	xternal interface 40-pin connector × 2		40-pin connector × 2

#### Notes

- 1. In a case where the number of points per common changes from 16 (four circuits) to 32 (two circuits) and the pin numbers A20 and B20 of H and the pin numbers A20 and B20 of L on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.
- To a reas, crieck that the specifications of websets, general module specifications of devices and equipment to be connected.
   For detailed specifications and general specifications not described in the
- specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

  4. Consider rewiring to two QX81s or two QX81-S2s if the existing module uses the
- 24VDC negative common.

#### $\textbf{JAMSC-B2605} \rightarrow \textbf{QX42/QX42-S1/QX72}$



#### [Specification comparison chart]

Model		MEMOCON-SC GL Series (2000 Series I/O)	ı	MELSEC-Q series			
Specificati	ions	JAMSC-B2605 Positive common/negative common shared type	QX42 QX42-S1 Positive common type QX42-S1		QX72 Positive common/negative common shared type		
No. of inpu	ut points	64	64	64	64		
Rated inpu	ıt voltage	12/24VDC	24VDC	24VDC	5/12VDC		
Rated inpu	ut current	Approx. 5mA (24VDC) Approx. 2.5mA (12VDC)	Approx. 4mA	Approx. 4mA	Approx. 3.3mA (12VDC) Approx. 1.2mA (5VDC)		
Input impe	edance	Approx. 4.7kΩ	Approx. 5.6kΩ	Approx. 5.6kΩ	Approx. 3.3kΩ		
Inrush cur	rent	_	_	_	_		
Operating voltage/	ON	9V	19V / 3mA	19V / 3mA	3.5V / 1mA		
current	OFF	6V	11V / 1.7mA	9.5V / 1.5mA	1V / 0.1mA		
Response	OFF→ON	5ms or less	1/5/10/20 /70ms or less	0.1/0.2/0.4 /0.6/1ms or less	1/5/10/20 /70ms or less		
ON→OFF		10ms or less	1/5/10/20 /70ms or less	0.1/0.2/0.4 /0.6/1ms or less	1/5/10/20 /70ms or less		
Isolation n	nethod	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation		
Wiring method	for common	16 points/common	32 points/common	32 points/common	32 points/common		
External in	nterface	40-pin connector × 2	40-pin connector × 2	40-pin connector × 2	40-pin connector × 2		

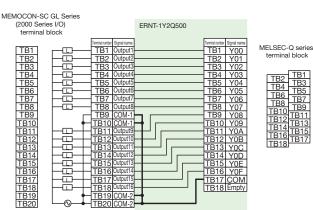
#### Notes

MELSEC-Q eries connector

- 1. In a case where the number of points per common changes from 16 (four circuits) to 32 (two circuits) and the pin numbers A20, B20, A19, and B19 of H and the pin numbers A20, B20, A19, and B19 of L on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.
- For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- Consider rewiring to two QX81s or two QX81-S2s if the existing module uses the 24VDC negative common.

#### (5) ERNT-1Y2Q500 Terminal block (20P) → Terminal block (18P)

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points	MELSEC-Q series module model
ERNT-1Y2Q500	JAMSC-B2500	16	QY22



#### [Specification comparison chart]

	Model	MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series	
		JAMSC-B2500	QY22	
Specificat	tions	Triac output	Triac output	
No. of out	out points	16	16	
Rated loa	d voltage	80-240VAC, 50/60Hz	100-240VAC, 50/60Hz	
Maximum Io	ad current	1A/point, 3A/common	0.6A/point, 4.8A/common	
Minimum lo	load current 10mA 25mA		25mA	
Maximum in	rush current	20A, 10ms or less	20A, one cycle or less	
Leakage current at OFF		1.5mA or less (100VAC, 50Hz)	1.5mA or less (120VAC, 60Hz)	
		3mA or less (240VAC, 50Hz)	3mA or less (240VAC, 60Hz)	
Voltage dr	op at ON	1.5V or less (1A)	1.5V or less	
Response	OFF→ON	1ms or less	1ms + 0.5 cycle or less	
time	ON→OFF	1ms + 0.5 cycle or less	1ms + 0.5 cycle or less	
Surge sur	pressor	CR absorber/varistor	CR absorber	
Fuse		7.5A (not replaceable)	None	
Isolation i	method	Photocoupler isolation	Photocoupler isolation	
Wiring method	d for common	8 points/common	16 points/common	
External interface 20-point terminal block 18-point terminal I		18-point terminal block		

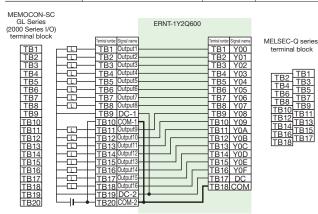
#### Notes

- In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9/TB10 and TB19/TB20 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.
- (2000 Series I/O) side are used separately, a wiring change is required.

  2. For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## (6) ERNT-1Y2Q600 Terminal block (20P) → Terminal block (18P)

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points	MELSEC-Q series module model
ERNT-1Y2Q600	JAMSC-B2600	16	QY40P QY50



#### [Specification comparison chart]

Model		MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series	
		JAMSC-B2600	QY40P	QY50
Specifica	ations	Sink type	Sink type	Sink type
No. of our	tput points	16	16	16
Rated loa	ad voltage	12/24VDC	12/24VDC	12/24VDC
Maximum load current		2A/point	0.1A/point	0.5A/point
		5A/common	1.6A/common	4A/common
Maximum ii	nrush current	7A, 10ms	0.7A, 10ms	4A, 10ms
Leakage current at OFF 0.2mA		0.2mA or less	0.1mA or less	0.1mA or less
Voltage o	drop at ON	1.5VDC (MAX.), 2A	0.2VDC (MAX.), 0.1A	
Response	OFF→ON	1ms or less	1ms or less	1ms or less
time	ON→OFF	1ms or less (resistive load)	1ms or less (resistive load)	1ms or less (resistive load)
Surge su	ppressor	Varistor	Zener diode	Zener diode
Fuse		7.5A (not replaceable)	None	6.7A (not replaceable)
Isolation	method	Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring method for common		8 points/common	16 points/common	16 points/common
External interface		20-point terminal block	18-point terminal block	18-point terminal block

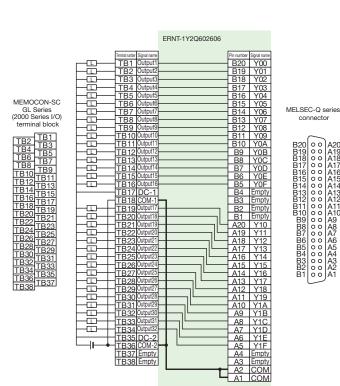
#### Notes

- 1. In a case where the number of points per common changes from 8 (two circuits) to 16 and the terminal numbers TB9/TB19 and TB10/TB20 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.

  For \_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the
- 2. For specifications of devices and equipment to be connected.
- 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

## (7) ERNT-1Y2Q602606 Terminal block (38P) $\rightarrow$ Connector (40P)

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points	MELSEC-Q series module model
ERNT-1Y2Q602606	JAMSC-B2602A	32	QY41H
ERN 1-112Q002000	JAMSC-B2606	32	QY41H



#### [Specification comparison chart]

Model		MEMOCON-SC GL Series (2000 Series I/O)		MELSEC-Q series
		JAMSC-B2602	JAMSC-B2606	QY41H
Specifica	ations	Sink type	Sink type	Sink type
No. of ou	tput points	32	32	32
Rated loa	ad voltage	12/24VDC	5/12VDC	5/12/24VDC
Maximum load current		0.3A/point	20mA/point	0.2A/point
		0.6A/4 adjacent points	640mA/module	2A/common
Minimum load current		_	_	_
Maximum inrush current		1A, 10ms or less	300mA, 10ms or less	0.7A, 10ms or less
Leakage current at OFF		0.2mA or less	0.2mA or less	0.1mA or less
Voltage drop at ON		1.5VDC (MAX.), 0.3A	0.3VDC (MAX.), 20mA	0.2VDC (MAX.), 0.1A
	OFF→ON	1ms or less	1ms or less	2µs or less
	ON→OFF	1ms or less (resistive load)	1ms or less (resistive load)	2μs or less (resistive load)
Surge suppressor		None	Zener diode	Zener diode
Fuse		4A (not replaceable)	None	None
Isolation method		Photocoupler isolation	Photocoupler isolation	Photocoupler isolation
Wiring method for common		16 points/common	16 points/common	32 points/common
External interface		38-point terminal block	38-point terminal block	40-pin connector

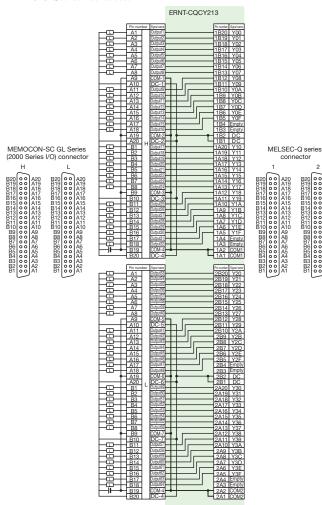
#### Notes

- 1. In a case where the number of points per common changes from 16 (two circuits) to 32 and the terminal numbers TB17/TB35 and TB18/TB36 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.
- areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
- 3. For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.
- Consider rewiring to the QY50 (0.5A, 16 points) or QY68A (2A, 8 points) if current capacity is required. Also consider using the ERNT-ASQTB20 in such cases.

# (8) ERNT-CQCY213 connector (40P) $\times$ 2 $\rightarrow$ Connector (40P) $\times$ 2

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points	MELSEC-Q series module model
ERNT-CQCY213*1	JAMSC-B2604	64	QY42P

\*1: A conversion adapter for replacing OMRON SYSMAC C series modules with MELSEC-Q series must be used.



#### [Specification comparison chart]

Model		MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series
Specifica	ations	JAMSC-B2604	QY42P
No. of out	put points	64	64
Rated loa	ad voltage	12/24VDC	12/24VDC
Maximum I	oad current	0.1A/point, 0.4A/common	0.1A/point, 2A/common
Maximum ir	rush current	0.5A, 10ms or less	0.7A, 10ms or less
Leakage cu	irrent at OFF	0.2mA or less	0.1mA or less
Response	OFF→ON	1ms or less	1ms or less
time	ON→OFF	1ms or less (resistive load)	1ms or less (resistive load)
Surge su	ppressor	None	Zener diode
Fuse		None	None
Isolation method		Photocoupler isolation	Photocoupler isolation
Wiring metho	d for common	8 points/common	32 points/common
External	interface	40-pin connector × 2	40-pin connector × 2

#### Notes

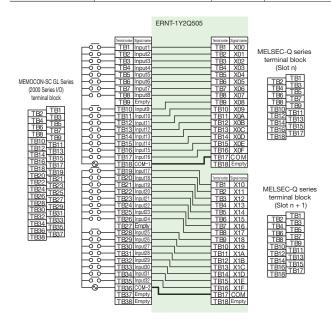
connector

- 1. In a case where the number of points per common changes from 8 (eight circuits) to 32 (two circuits) and the pin numbers A9, A10, A19, A20, B9, B10, B19, and B20 of H and the pin numbers A9, A10, A19, A20, B9, B10, B19, and B20 of L on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required 2. For areas, check that the specifications of MELSEC-Q series modules satisfy the
- specifications of devices and equipment to be connected.
- For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

[2-slot type] (Not applicable to MELSEC-Q series large type base units (Q D BL))

# (1) ERNT-1Y2Q505 Terminal block (38P) $\rightarrow$ Terminal block (18P) $\times$ 2

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of input points	MELSEC-Q series module model	No. of required modules
ERNT-1Y2Q505	JAMSC-B2505A	32	QX10	2



# [Specification comparison chart]

Cobecilio	Janon Coi	riparisori criartj		
	Model	MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series	
Specifica	tions	JAMSC-B2505A	QX10	
No. of in	put points	32	16	
Rated inp	ut voltage	100-120VAC, 50/60Hz	100-120VAC, 50/60Hz	
Rated inp	out current	Approx. 10mA (100VAC, 60Hz)	Approx. 8mA (100VAC, 60Hz) Approx. 7mA (100VAC, 50Hz)	
Input impedance		Approx. 10kΩ (60Hz)	Approx. 12kΩ (60Hz) Approx. 15kΩ (50Hz)	
Inrush cu	urrent	-	Max. 200mA 1ms (132VAC)	
Operating voltage/	ON	-	80VAC / 5mA	
current	OFF	-	30VAC / 1.7mA	
Response	OFF→ON	15ms or less	15ms or less	
time	ON→OFF	25ms or less	20ms or less	
Isolation	method	Photocoupler isolation	Photocoupler isolation	
Wiring metho	d for common	16 points/common	16 points/common	
External	interface	38-point terminal block	18-point terminal block	

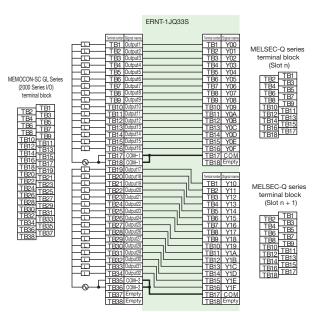
Notes 1.For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

2.For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

# (2) ERNT-1JQ33S Terminal block (38P) → Terminal block (18P) × 2

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-1JQ33S <sup>-1</sup>	JAMSC-B2504	32	QY22	2

<sup>\*1:</sup> A conversion adapter for replacing SHARP JW Series modules (large type) with MELSEC-Q series must be used.



#### [Specification comparison chart]

Model		MEMOCON-SC GL Series	
			MELSEC-Q series
		(2000 Series I/O)	
		JAMSC-B2504	QY22
Specifica	ations	Triac output	Triac output
No. of our	tput points	32	16
Rated loa	ad voltage	80-240VAC, 50/60Hz	100-240VAC, 50/60Hz
Maximum	load current	0.3A/point, 1.2A/common	0.6A/point, 4.8A/common
Minimum I	oad current	10mA	25mA
Maximum ir	nrush current	20A, 10ms or less	20A, one cycle or less
Leakane ci	irrent at OFF	1.5mA or less (100VAC, 60Hz)	1.5mA or less (120VAC, 60Hz)
Leanage	inoni al Orr	3mA or less (240VAC, 60Hz) 3mA or less (240VAC,	
Voltage o	Irop at ON	1.5V or less (1A)	1.5V or less
Response	OFF→ON	1ms or less	1ms + 0.5 cycle or less
time	ON→OFF	1ms + 0.5 cycle or less	1ms + 0.5 cycle or less
Surge su	ppressor	CR absorber	CR absorber
Fuse		4A (not replaceable)	None
Isolation	method	Photocoupler isolation	Photocoupler isolation
Wiring metho	d for common	16 points/common	16 points/common
External	interface	38-point terminal block	18-point terminal block

Notes 1.For \_\_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.

2.For detailed specifications and general specifications not described in the

2.For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

# (3) ERNT-1JQ31N34S Terminal block (38P) → Terminal block (18P) × 2

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points		No. of required modules		
ERNT-1JQ31N34S <sup>-1</sup>	JAMSC-B2902	32	QY10	2		
*1: A conversion adapter for replacing SHARP JW Series modules (large type) with MELSEC-Q series must be used.						

| Comparison | Com

[Specification comparison chart]

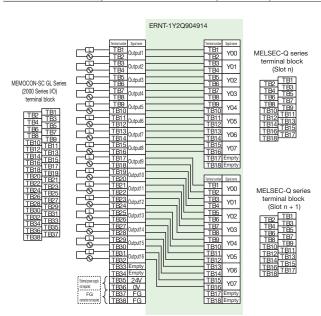
[Specification comparison chart]				
	Model	MEMOCON-SC GL Series (2000 Series I/O)	MELSEC-Q series	
Specifications		JAMSC-B2902	QY10	
No. of out	tput points	32	16	
Rated loa	ad voltage	24VDC / 110VAC / 220VAC	24VDC / 240VAC	
Maximum load current		1.2A (110VAC) 1A (220VAC) 1A (24VDC)	2A/point 8A/common	
Minimum I	oad current	10mA (5VDC)	1mA (5VDC)	
Maximum ir	rush current	_	_	
Leakage cu	rrent at OFF	_	_	
Voltage d	rop at ON	_	_	
Response	OFF→ON	10ms or less	10ms or less	
time	ON→OFF	15ms or less	12ms or less	
Surge su	ppressor	None	None	
Fuse		None	None	
Isolation	method	Relay isolation	Relay isolation	
Wiring metho	d for common	8 points/common	16 points/common	
External	interface	38-point terminal block	18-point terminal block	

- Notes 1.In a case where the number of points per common changes from 8 (four circuits) to 16 (two circuits) and the terminal numbers TB9/TB18 and TB27/TB36 on the MEMOCON-SC GL Series (2000 Series I/O) side are used separately, a wiring change is required.

  2.The external power supply connected to the terminal numbers TB37 and TB38 on
  - 2.The external power supply connected to the terminal numbers TB37 and TB38 on the MEMOCON-SC GL Series (2000 Series I/O) side is no longer required. Such devices may remain connected though as the conversion adapter is not wired internally for this connection.
  - 3.For areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
     4.For detailed specifications and general specifications not described in the
  - 4.For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

# (4) ERNT-1Y2Q904914 Terminal block (38P) → Terminal block (18P) × 2

Conversion adapter model	MEMOCON-SC GL Series (2000 Series I/O) module model	No. of output points	MELSEC-Q series module model	No. of required modules
ERNT-1Y2Q904914	JAMSC-B2904	16	QY18A	2
ENN1-112Q904914	JAMSC-B2914	10	QTIOA	_



#### [Specification comparison chart]

Model		MEMOCON-SC GL Series (2000 Series I/O)		MELSEC-Q series	
Specifica	itions	JAMSC-B2904	JAMSC-B2914	QY18A	
No. of our	tput points	16	16	8	
Rated switching voltage/current		110VDC, 0.3A 220VAC, 0.5A	110VDC, 0.3A 220VAC, 0.5A	24VDC, 2A (resistive load)/point 240VAC, 2A (COS $\phi$ = 1)/point 8A/module	
Minimum switching load		5VDC, 1mA	24VDC, 10mA	5VDC, 1mA	
Maximum switching load		110VDC, 0.5A	110VDC, 0.5A	125VDC	
IVIAXIIIIUIII S	witching load	220VAC, 15A	220VAC, 15A	264VAC	
Response	OFF→ON	6ms or less	6ms or less	10ms or less	
time	ON→OFF	4ms or less	4ms or less	12ms or less	
Surge su	ppressor	None	None	None	
Fuse		None	None	None	
Isolation method		Relay isolation	Relay isolation	Relay isolation	
Wiring metho	od for common	Independent common	Independent common	Independent common	
External	interface	38-point terminal block	38-point terminal block	18-point terminal block	

- Notes 1.The external power supply connected to the terminal numbers TB35 and TB36 on the MEMOCON-SC GL Series (2000 Series I/O) side is no longer required. Such devices may remain connected though as the conversion adapter is not wired internally for this connection.
  - 2.The FG terminal connected to the terminal numbers TB37 and TB38 on the MEMOCON-SC GL Series (2000 Series I/O) side is no longer required. Such devices may remain connected though as the conversion adapter is not wired internally for this connection.
  - 3.For \_\_\_\_\_ areas, check that the specifications of MELSEC-Q series modules satisfy the specifications of devices and equipment to be connected.
  - 4.For detailed specifications and general specifications not described in the specification comparison charts, refer to the user's manual for the module used. Note that the areas where the specifications differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series are restricted in terms of specifications during replacement. Verify the specifications of the connected devices.

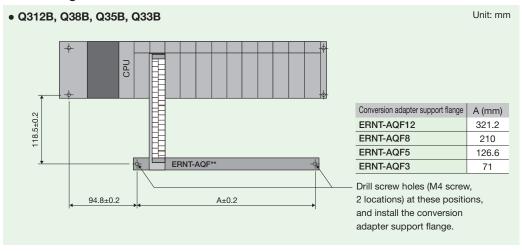
# **Conversion Adapter Support Flange (Required)**

## **Specifications**

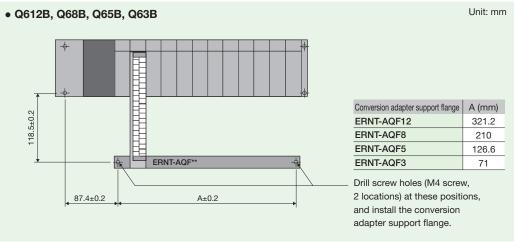
A conversion adapter support flange secures the bottom of a conversion adapter. This is required when a conversion adapter is used. One support flange is required per base unit. The same support flange used to replace MELSEC-A series with MELSEC-Q series is used.

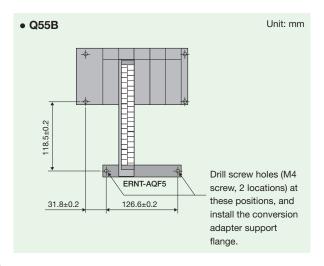
Conversion adapter support flange model	Specifications
ERNT-AQF12	Conversion adapter support flange for 12 slots of MELSEC-Q series modules
ERNT-AQF8	Conversion adapter support flange for 8 slots of MELSEC-Q series modules
ERNT-AQF5	Conversion adapter support flange for 5 slots of MELSEC-Q series modules
ERNT-AQF3	Conversion adapter support flange for 3 slots of MELSEC-Q series modules

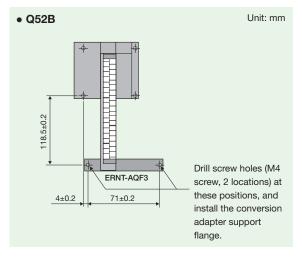
#### When using a main base unit



# When using an extension base unit







U	ngr	ado	e T	ool	GL	

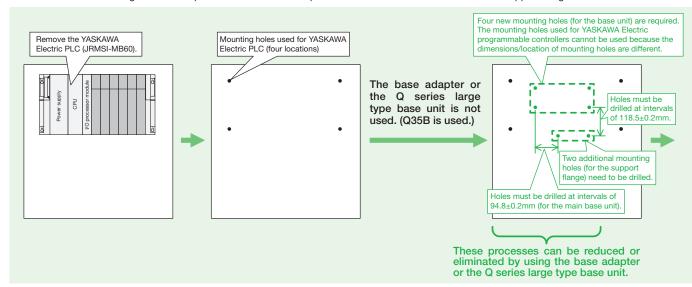
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# Upgrading Using the Base Adapter or the Q Series Large Type Base Unit (Manufactured by Mitsubishi Electric)

Using the base adapter or the Q series large type base unit eliminates the need to drill mounting holes and determine installation position of the support flange.

# When the base adapter or the O series large type base unit is not used

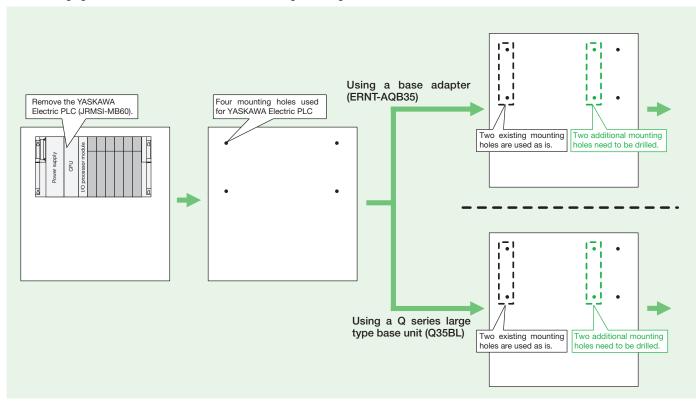
Six or seven new mounting holes are required and the installation positions of the Q series base unit and the support flange need to be determined.



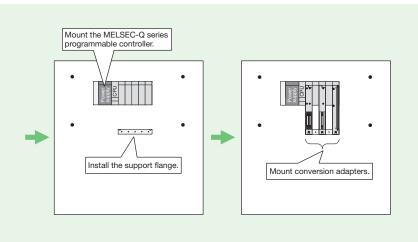
# When the base adapter or the Q series large type base unit (the same one used to replace MELSEC-A series large type with MELSEC-Q series) is used

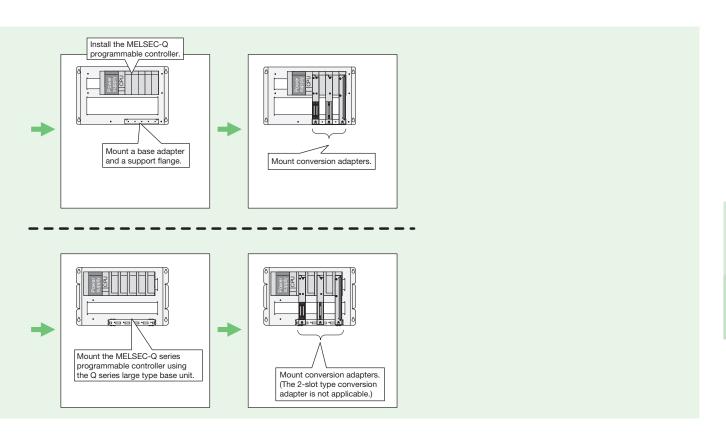
Only a maximum of 2 holes must be drilled due to the base adapter or Q series large type base unit having the same mounting hole height dimensions as the GL Series base unit. (Additional mounting holes are not required if the mounting dimensions before and after replacement are the same and the existing four mounting holes can be used.)

The following figure shows the installation when two existing mounting holes on the left are used.



For details, refer to "Mounting Dimensions" on page 6-18, "Comparison of External Dimensions and Mounting Hole Dimensions for Replacements" on page 6-19, and "Slot Positions" on page 6-21.





# **Base Adapter**

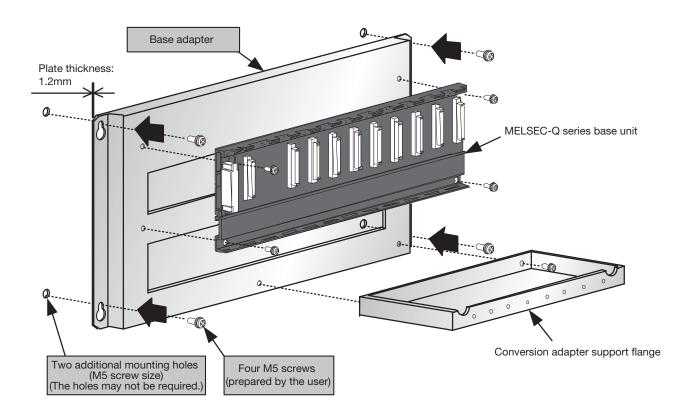
# **Specifications**

Both the MELSEC-Q series base unit and the conversion adapter support flange can be installed on the base adapter without drilling screw holes.

The same base adapter used to replace MELSEC-A series with MELSEC-Q series is used.

#### Note

• Two additional mounting holes (M5 screw) and four M5 screws need to be prepared by the user to install the base adapter to the control panel. (Additional mounting holes are not required if the mounting dimensions before and after replacement are the same and the existing four mounting holes can be used.)



For the base unit models marked with \*1 to \*5, two or more base adapter models are applicable. Select the most suitable base adapter according to the product dimensions.

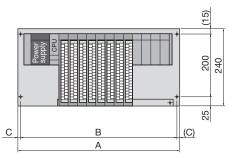
			M	ountable product	:		Product dimensions
Base adapter model		MELS	SEC-Q series bas	e unit		Conversion adapter	Width × Height
	12 slots	8 slots	5 slots	3 slots	2 slots	support flange	(mm)
ERNT-AQB38	Q312B					ERNT-AQF12, ERNT-AQF8	480 × 240
LITTI-AQD30		Q38B (*1)			1	ERNT-AQF8	400 × 240
ERNT-AQB35		Q38B (*1)				ERNT-AQF8, ERNT-AQF5	382 × 240
ENIVI-AQDOS			Q35B			ERNT-AQF5	302 X 240
ERNT-AQB32				Q33B		ERNT-AQF3	247 × 240
ERNT-AQB68	Q612B				i	ERNT-AQF12, ERNT-AQF8	466 × 240
ENIVI-AQD00		Q68B (*2)				ERNT-AQF8	400 X 240
		Q68B (*2)			1	ERNT-AQF8, ERNT-AQF5	
ERNT-AQB65			Q65B (*3)			ERNT-AQF5	352 × 240
			Q55B (*4)		t t	ENNI-AQF5	
ERNT-AQB62				Q63B	Q52B (*5)	ERNT-AQF3	238 × 240
ERNT-AQB58	Q68B (*2)				1	ERNT-AQF8	411 × 240
EDNIT AORES			Q65B (*3)		1	ERNT-AQF5	297 × 240
ERNT-AQB55			Q55B (*4)		1	ENNI-AQES	291 × 240
ERNT-AQB52					Q52B (*5)	ERNT-AQF3	183 × 240

# **Mounting Dimensions**

- The slot positions of modules differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series. After replacement, adjust the length of cables.
- The height will be smaller after replacement.

  (For the width and depth, refer to "Usage Precautions" on page 6-28.)
- Two of the four mounting holes of the base adapter and the Q series large type base unit are the same size as those of the MEMOCON-SC GL Series (2000 Series I/O) base unit, and therefore only two additional mounting holes need to be drilled on the control panel. (Additional mounting holes are not required if the mounting dimensions are the same before and after replacement and the existing four mounting holes can be used.)

# • Base adapter + MELSEC-Q series base unit



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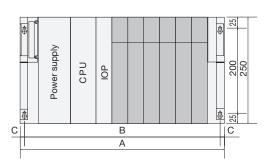
• Q series large type base unit

Unit: mm

Base adapter mode	Description	А	В	С	Mounting hole size
ERNT-AQB38		480	460	10	
ERNT-AQB35	Main base unit	382	362	10	]
ERNT-AQB32		247	227	10	
ERNT-AQB68		466	446	10	M5
ERNT-AQB65	Extension base unit with power supply	352	332	10	CIVI
ERNT-AQB62	with power supply	238	218	10	
ERNT-AQB55	Extension base unit	297	277	10	
ERNT-AQB52	without power supply	183	163	10	

Q series large type base unit model	Description	А	В	С	Mounting hole size
Q38BL	Main lane a cost	480	460	10	
Q35BL	Main base unit	382	362	10	
Q68BL	Extension base unit	466	446	10	M5
Q65BL	with power supply	352	332	10	IVIS
Q55BL	Extension base unit without power supply	297	277	10	

# • (Reference) MEMOCON-SC GL Series (2000 Series I/O) base unit



GL Series base unit model	Description	А	В	С	Mounting hole size
JRMSI-MB40		480	460	10	
JRMSI-MB60	Main base unit	480	460	10	
JRMSI-MB60S3		370	350	10	]
JRMSI-MB70		480	460	10	
JRMSI-MB70AS4	Main base unit	340	320	10	]
JRMSI-MB70AS2	(for remote station)	255	235	10	M5
JRMSI-MB22 / JRMSI-MB22A		480	460	10	
JRMSI-MB22AS6	Extension base unit	370	350	10	
JRMSI-MB22S5	Extension base unit	340	320	10	
JRMSI-MB22S3		255	235	10	

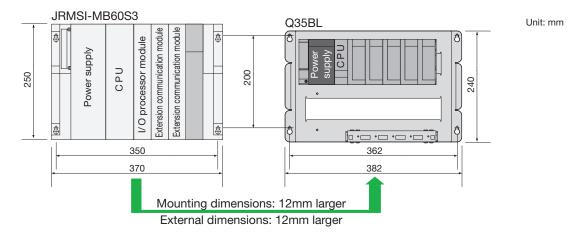
# **Comparison of External Dimensions and Mounting Hole Dimensions for Replacements**

Use the following tables to check the differences of external dimensions and mounting hole dimensions before and after replacement.

# **Notes**

- " A " indicates that the dimensions will be larger after replacement as shown in the example below. Reconsider the installation position.
- If there are not enough mounting slots, use an extension base unit.
- If your MEMOCON-SC GL Series (2000 Series I/O) model is not listed here, check the number of slots, external dimensions, mounting dimensions, and other specifications and then select the optimal base adapter or Q series large type base unit.

Example) Replacing the MEMOCON-SC GL Series (2000 Series I/O) (JRMSI-MB60S3) with the MELSEC-Q series large type base unit (Q35BL)



# When using a main base unit

1. Replacing with the MELSEC-Q series base unit or MELSEC-Q series base unit + base adapter

©: Same, ○: GL Series is larger, ▲: GL Series is smaller

GL Series	GL Series base unit			N	MELSEC	-Q series	base unit	t		Base adapter						
Model	Includes	Maximum number of	Model	Includes power	Maximum number of	,	SEC-Q se	arison*1 ries - GL		Model	_ `	se adapte			Conversion adapter support	Remarks
	supply	slots		supply	slots	External d Width	Height	Mounting Width	dimensions Height		External di Width	imensions Height	Mounting of Width	Height	flange	
			Q312B	Yes	12	(-41)	(-152)	(-41)	(-120)	ERNT-AQB38	0	(-10)	0	O	ERNT-AQF12	Drill mounting holes in panel surface not required when using the base adapter
IDMOL MD 40	V	8	Q38B	Yes	8	(-152)	(-152)	(-152)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF8	•Drill mounting holes in panel surface not required when using the base adapter
JRMSI-MB40	Yes	8	Q35B	Yes	5	(-235)	(-152)	(-235.6)	(-120)	ERNT-AQB35	(-98)	(-10)	(-98)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q33B	Yes	3	(-291)	(-152)	(-291)	(-120)	ERNT-AQB32	(-233)	(-10)	(-233)	0	ERNT-AQF3	Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q312B	Yes	12	(-41)	(-152)	(-41)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF12	•Drill mounting holes in panel surface not required when using the base adapter
JRMSI-MB60	Yes	6	Q38B	Yes	8	(-152)	(-152)	(-152)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF8	•Drill mounting holes in panel surface not required when using the base adapter
JKM2I-MB00	res	ь	Q35B	Yes	5	(-235)	(-152)	(-235.6)	(-120)	ERNT-AQB35	(-98)	(-10)	(-98)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q33B	Yes	3	(-291)	(-152)	(-291)	(-120)	ERNT-AQB32	(-233)	(-10)	(-233)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JRMSI-MB60S3	Yes	1	Q33B	Yes	3	(-181)	(-152)	(-181)	(-120)	ERNT-AQB32	(-123)	(-10)	(-123)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q312B	Yes	12	(-41)	(-152)	(-41)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF12	•Drill mounting holes in panel surface not required when using the base adapter
IDMOLMD70	V	8	Q38B	Yes	8	(-152)	(-152)	(-152)	(-120)	ERNT-AQB38	0	(-10)	0	0	ERNT-AQF8	•Drill mounting holes in panel surface not required when using the base adapter
JRMSI-MB70	Yes	8	Q35B	Yes	5	(-235)	(-152)	(-235.6)	(-120)	ERNT-AQB35	(-98)	(-10)	(-98)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q33B	Yes	3	(-291)	(-152)	(-291)	(-120)	ERNT-AQB32	(-233)	(-10)	(-233)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q312B	Yes	12	(99)	(-152)	(99)	(-120)	ERNT-AQB38	(140)	(-10)	(140)	0	ERNT-AQF12	Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JRMSI-MB70AS4	Yes	4	Q38B	Yes	8	(-12)	(-152)	(-12)	(-120)	ERNT-AQB38	(140)	(-10)	(140)	0	ERNT-AQF8	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JRIVIOI-IVIB/UA04	res	4	Q35B	Yes	5	(-95)	(-152)	(-95.6)	(-120)	ERNT-AQB35	(42)	(-10)	(42)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
			Q33B	Yes	3	(-151)	(-152)	(-151)	(-120)	ERNT-AQB32	(-93)	(-10)	(-93)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JRMSI-MB70AS2	Yes	2	Q35B	Yes	5	(-10)	(-152)	(-10.6)	(-120)	ERNT-AQB35	(127)	(-10)	(127)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
JI 1WIJI-WID / UMJZ	162		Q33B	Yes	3	(-66)	(-152)	(-66)	(-120)	ERNT-AQB32	(-8)	(-10)	(-8)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the MELSEC-Q series base unit and GL Series modules.

<sup>\*2:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the base adapter and GL Series modules.

# 2. Replacing with the MELSEC-Q series large type base unit

©: Same, ○: GL Series is larger, ▲: GL Series is smaller

GL Series	iit		MEL	SEC-Q	series larç	ge type ba				
Model	Includes	Maximum number of	Model	Includes	Maximum number of	(MELS	Compa SEC-Q se	arison*1 ries - GL	Series)	Remarks
Wodel	supply	slots	iviodei	supply	slots		imensions		dimensions	
						Width	Height	Width	Height	
JRMSI-MB40	Yes	8	Q38BL	Yes	8	0	(-10)	0	0	•Drill mounting holes in panel surface not required
JNIVIOI-IVID40	103		Q35BL	Yes	5	(-98)	(-10)	(-98)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
IDMOLANDOS	Yes	6	Q38BL	Yes	8	0	(-10)	0	0	•Drill mounting holes in panel surface not required
JRMSI-MB60	162	0	Q35BL	Yes	5	(-98)	(-10)	(-98)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
JRMSI-MB60S3	Yes	1	Q35BL	Yes	5	(12)	(-10)	(12)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
JRMSI-MB70	Yes	8	Q38BL	Yes	8	0	(-10)	0	0	·Drill mounting holes in panel surface not required
JKIM9I-IMB/0	res	0	Q35BL	Yes	5	(-98)	(-10)	(-98)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
JRMSI-MB70AS4	Yes	4	Q35BL	Yes	5	(42)	(-10)	(42)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
JRMSI-MB70AS2	Yes	2	Q35BL	Yes	5	(127)	A 0 A 0		0	•Drill mounting holes in panel surface required except for 2 vertical holes

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the Q series large type base unit and the GL Series modules.

# When using an extension base unit

1. Replacing with the MELSEC-Q series base unit or MELSEC-Q series base unit + base adapter

②: Same, ○: GL Series is larger, ▲: GL Series is smaller

01 0	GL Series base unit MELSEC-Q series base unit Base adapter													l Game, O. GL	Series is larger, A. G.L. Series is smaller		
Model	Includes	Maximum number of	Model	Includes			Compa	arison*1 ries - GL	Series)	Model		Compa		ries)	Conversion adapter	Remarks	
Model	supply	slots	iviodei	supply	slots	External d	imensions Height	Mounting Width	dimensions Height	Model	External d	limensions Height	Mounting d	limensions Heiaht	support flange		
JRMSI-MB22 /	V		Q612B	Yes	12	(-41)	(-152)	(-43)	(-120)	ERNT-AQB68	(-14)	(-10)	(-14)	©	ERNT-AQF12	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
JRMSI-MB22A	Yes	9	Q68B	Yes	8	(-152)	(-152)	(-154)	(-120)	ERNT-AQB65	(-128)	(-10)	(-128)	0	ERNT-AQF8	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
JRMSI-MB22AS6	Yes	6	Q612B	Yes	12	(69)	(-152)	(67)	(-120)	ERNT-AQB68	(96)	(-10)	(96)	0	ERNT-AQF12	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
JNIVISI-IVIBZZASO	162	6	Q68B	Yes	8	(-42)	(-152)	(-44)	(-120)	ERNT-AQB65	(-18)	(-10)	(-18)	0	ERNT-AQF8	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
				Q612B	Yes	12	(99)	(-152)	(97)	(-120)	ERNT-AQB68	(126)	(-10)	(126)	0	ERNT-AQF12	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter
IDMOL MADOOOS	Yes	5	Q68B	Yes	8	(-12)	(-152)	(-14)	(-120)	ERNT-AQB65	(12)	(-10)	(12)	0	ERNT-AQF8	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
JRMSI-MB22S5	res	5	Q65B	Yes	5	(-95)	(-152)	(-97.6)	(-120)	ERNT-AQB55	(-43)	(-10)	(-43)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
			Q55B	No	5	(-151)	(-152)	(-153)	(-120)	ERNT-AQB55	(-43)	(-10)	(-43)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
			Q68B	Yes	8	(73)	(-152)	(71)	(-120)	ERNT-AQB65	(97)	(-10)	(97)	0	ERNT-AQF8	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
			Q65B	Yes	5	(-10)	(-152)	(-12.6)	(-120)	ERNT-AQB55	(42)	(-10)	(42)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
JRMSI-MB22S3	Yes	3	Q63B	Yes	3	(-66)	(-152)	(-68)	(-120)	ERNT-AQB62	(-17)	(-10)	(-17)	0	ERNT-AQF3	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
			Q55B	No	5	(-66)	(-152)	(-68)	(-120)	ERNT-AQB55	(42)	(-10)	(42)	0	ERNT-AQF5	•Drill mounting holes in panel surface required except for 2 vertical holes when using the base adapter	
			Q52B	No	2	O (-149)	(-152)	(-151.5)	O (-120)	ERNT-AQB52	O (-72)	(-10)	O (-72)	0	ERNT-AQF3	Maximum of 2 slots, so insufficient by 1 slot     Drill mounting holes in panel surface required except for 2     vertical holes when using the base adapter	

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the MELSEC-Q series base unit and GL Series modules.
\*2: Values in parentheses indicate differences in dimensions (unit: mm) between the base adapter and GL Series modules.

# 2. Replacing with the MELSEC-Q series large type base unit

©: Same, ○: GL Series is larger, ▲: GL Series is smaller

GL Series base			MELSE	C-Q serie	s large ty					
Madal			Model	Includes	Maximum	(MELS			Series)	Remarks
Wiodei	supply	slots	iviodei	supply	slots					
						vviatri	neigni	vviatri	neigni	
	Yes	9	Q68BL	Yes	8	(-14)	(-10)	(-14)	0	•There is no large type base unit having 9 slots or more. •Maximum of 8 slots, so insufficient by 1 slot •Drill mounting holes in panel surface required except for 2 vertical holes
JRMSI-MB22AS6	Yes	6	Q68BL	Yes	8	(96)	(-10)	(96)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
IDMSI MP22S5	Voc	_	Q65BL	Yes	5	(12)	(-10)	(12)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
UNIVIOI-IVIDZZ33	165	5	Q55BL	No	5	(-43)	(-10)	(-43)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
IDMSI MP22S2	Voc	,	Q65BL	Yes	5	(97)	(-10)	(97)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
JRIVISI-IVIB22S3	162	3	Q55BL	No	5	(42)	(-10)	(42)	0	•Drill mounting holes in panel surface required except for 2 vertical holes
	GL Series base  Model  JRMSI-MB22 / JRMSI-MB22A  JRMSI-MB22AS6  JRMSI-MB22S5  JRMSI-MB22S3	Model         power supply           JRMSI-MB22 / JRMSI-MB22A         Yes           JRMSI-MB22AS6         Yes           JRMSI-MB22S5         Yes	Includes   Maximum power   Includes   Includes	Includes   Maximum   power   number of supply   Solts	Model	Model	Includes   Maximum   Power   Includes   Maximum   Model   Includes   Includes   Includes   Maximum   Model   Includes   Inclu	Includes   Maximum   Power   Includes   Maximum   Model   Includes   Includes   Maximum   Model   Includes   Includes   Maximum   Model   Includes   Includes	Includes   Maximum   power   number of slots   Maximum   power   number of slots   Maximum   power   number of slots   Maximum   number of slots   Maximum   Model   power   number of slots   Maximum   number of slots   Maximum   Multiple of slots   Maximum   Multiple of slots   Multiple of slots   Maximum   Multiple of slots   Maximum   Multiple of slots   Maximum   Multiple of slots   Maximum   Multiple of slots   Multiple of slots   Maximum   Multiple of slots   Multiple of slo	Model   Includes   Maximum power number of supply   Model   Includes power number of supply   Model   Includes power number of supply   Includes power number of supply   Maximum power number of s

<sup>\*1:</sup> Values in parentheses indicate differences in dimensions (unit: mm) between the Q series large type base unit and the GL Series modules.

# **Slot Positions**

The slot positions differ between the MEMOCON-SC GL Series (2000 Series I/O) and the MELSEC-Q series. After replacement, change the slot positions of modules and adjust the length of cables.

# **Note**

Values in parentheses indicate differences in external dimensions with the MEMOCON-SC GL Series (2000 Series I/O) modules.

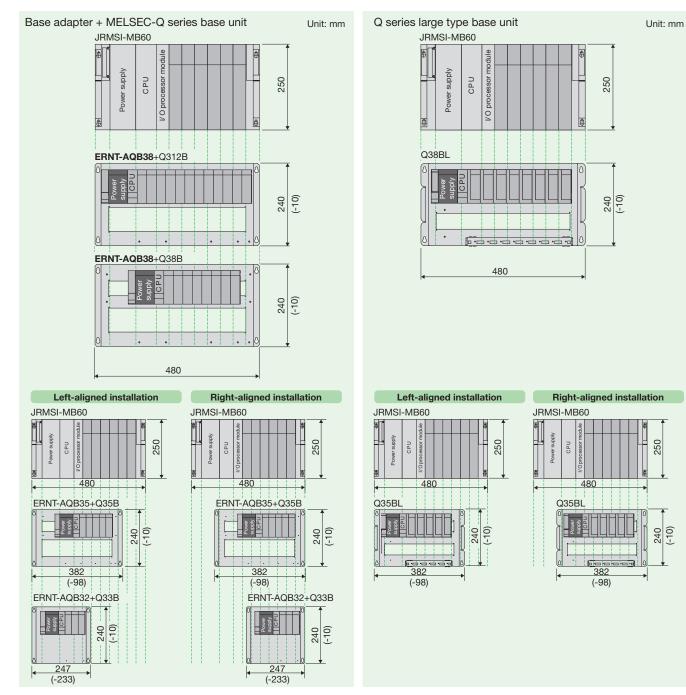
# When using a main base unit

(1) JRMSI-MB40  $\rightarrow$  ERNT-AQB38+Q312B / ERNT-AQB38+Q38B / ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q38BL / Q35BL

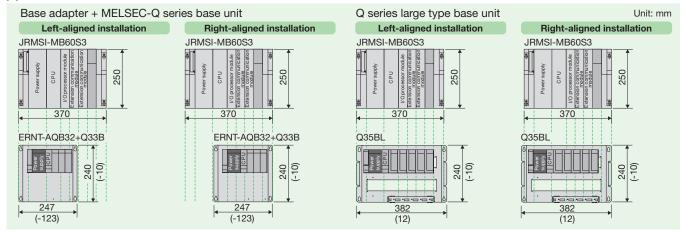


GL

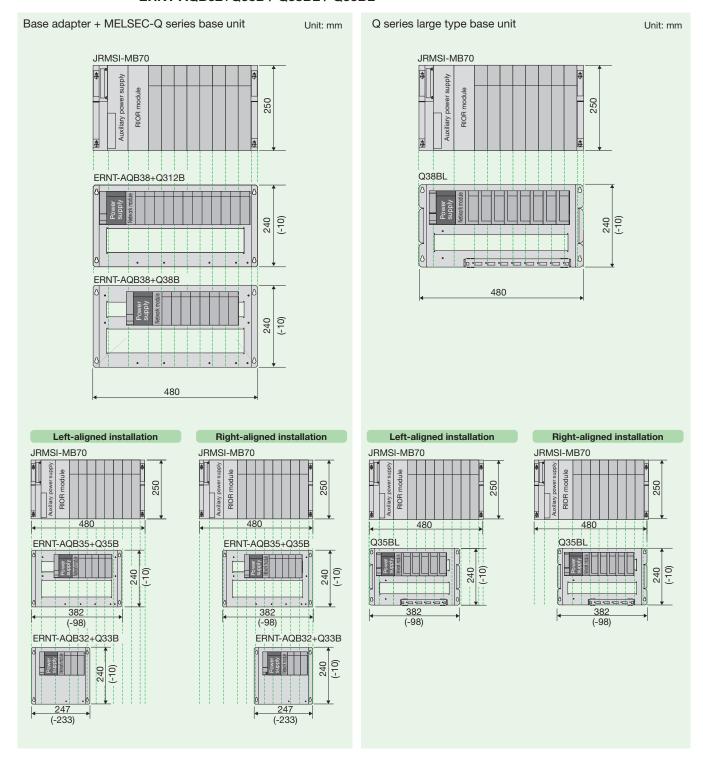
## (2) JRMSI-MB60 → ERNT-AQB38+Q312B / ERNT-AQB38+Q38B / ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q38BL / Q35BL



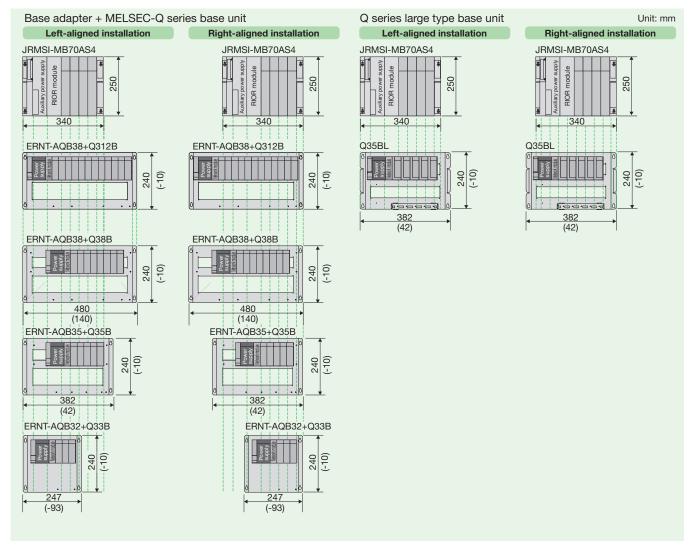
# (3) JRMSI-MB60S3 $\rightarrow$ ERNT-AQB32+Q33B / Q35BL



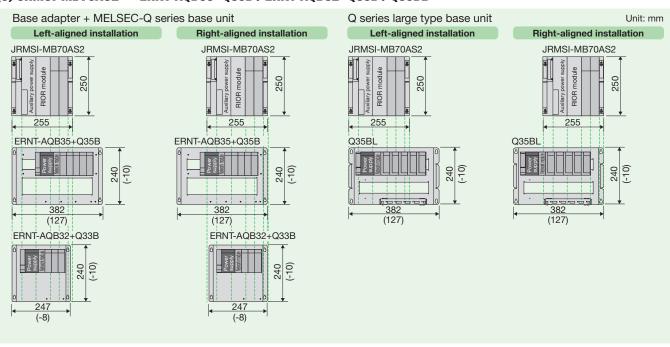
# (4) JRMSI-MB70 $\rightarrow$ ERNT-AQB38+Q312B / ERNT-AQB38+Q38B / ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q38BL / Q35BL



# (5) JRMSI-MB70AS4 $\rightarrow$ ERNT-AQB38+Q312B / ERNT-AQB38+Q38B / ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q35BL

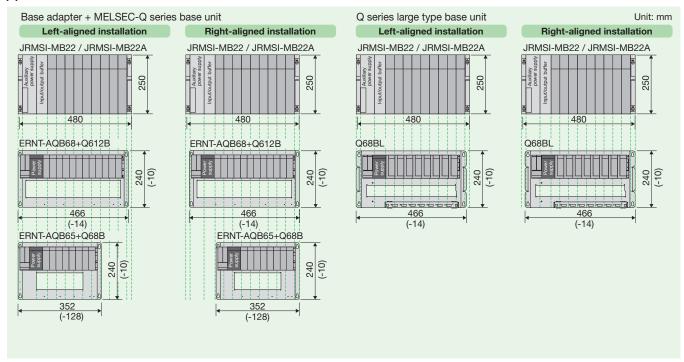


# (6) JRMSI-MB70AS2 $\rightarrow$ ERNT-AQB35+Q35B / ERNT-AQB32+Q33B / Q35BL

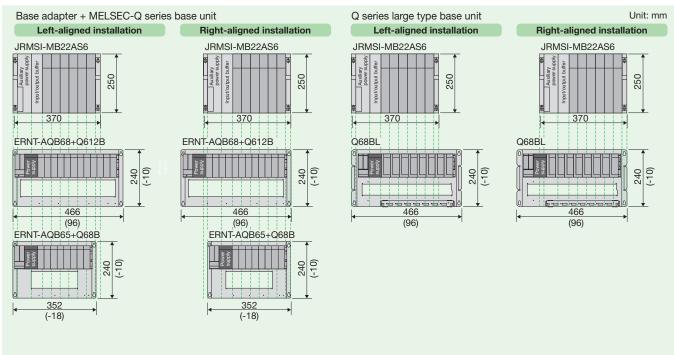


# When using an extension base unit

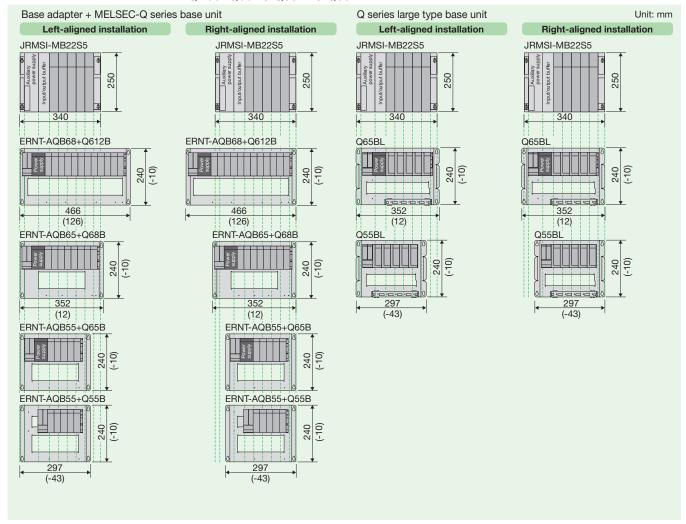
# (1) JRMSI-MB22 / JRMSI-MB22A $\rightarrow$ ERNT-AQB68+Q612B / ERNT-AQB65+Q68B / Q68BL



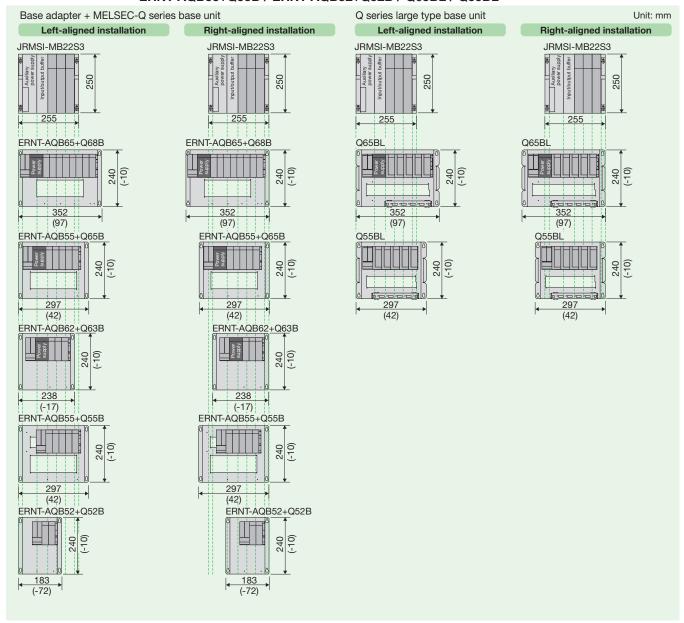
# (2) JRMSI-MB22AS6 $\rightarrow$ ERNT-AQB68+Q612B / ERNT-AQB65+Q68B / Q68BL



# (3) JRMSI-MB22S5 $\rightarrow$ ERNT-AQB68+Q612B / ERNT-AQB65+Q68B / ERNT-AQB55+Q65B / Q65BL / Q55BL



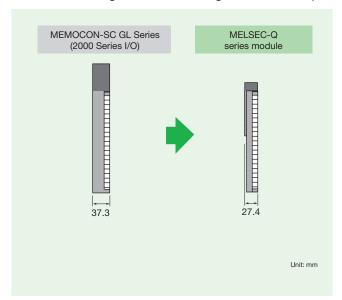
# (4) JRMSI-MB22S3 $\rightarrow$ ERNT-AQB65+Q68B / ERNT-AQB55+Q65B / ERNT-AQB62+Q63B / ERNT-AQB55+Q55B / ERNT-AQB52+Q52B / Q65BL / Q55BL



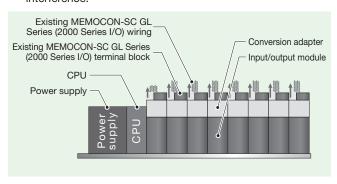
# **Usage Precautions**

# **Module Width**

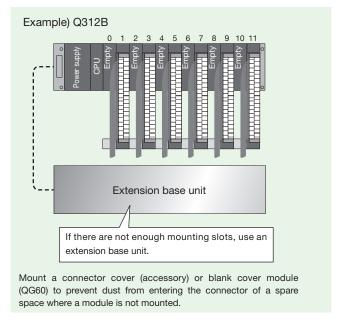
(1) Since the width of MELSEC-Q series modules is smaller (MEMOCON-SC GL Series (2000 Series I/O): 37.3mm → MELSEC-Q series: 27.4mm), the wiring area becomes smaller as well. Check the wiring area when mounting a conversion adapter.



(2) If the wiring causes interference with adjacent modules, take an action such as lifting the wiring forward to prevent interference.



(3) If interference still occurs even when you lift the wiring, keep the next slot open to secure a space for wiring.



(4) If a problem still exist, consider using the Mitsubishi Electric Q series large type base unit (wiring space of 37.5mm). Note: The 2-slot type conversion adapter is not applicable.

# **Depth**

The depth dimensions are shown below. The depth dimensions are larger after replacement, and therefore a verification is required during installation.

The values in parentheses, which are 11.8mm smaller, represent the depth when a base adapter or MELSEC-Q series large type base unit is not used.

MEMOCON-SC **GL** Series (2000 Series I/O)

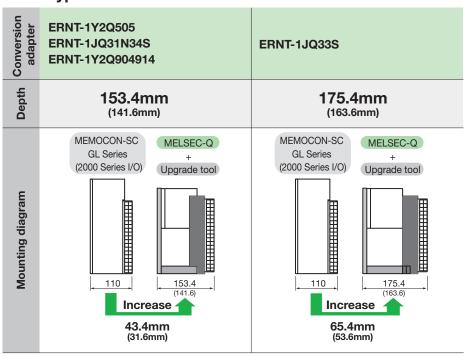
MEMOCON-SC GL Series (2000 Series I/O)

MELSEC-Q : MELSEC-Q series

# 1-slot type

Conversion adapter	ERNT-1Y2Q501 ERNT-1Y2Q601611 ERNT-1Y2Q600	ERNT-1Y2Q500	ERNT-1JQ32N34N ERNT-1Y2Q602606	ERNT-1Y2Q615625 ERNT-CQCY213		
Depth	143.8mm (132mm)	<b>165.8mm</b> (154mm)	<b>164.5mm</b> (152.7mm)	173.2mm (161.4mm)		
Mounting diagram	MEMOCON-SC GL Series (2000 Series I/O)  Upgrade tool  143.8 (132) Increase  43.8mm (32mm)	MEMOCON-SC GL Series (2000 Series I/O)  Upgrade tool  100 165.8 (154) Increase 65.8mm (54mm)	MEMOCON-SC GL Series (2000 Series I/O)  Upgrade tool  110 164.5 (152.7) Increase 54.5mm (42.7mm)	MEMOCON-SC GL Series (2000 Series I/O)  Upgrade tool  131  173.2 (161.4)  Increase  42.2mm (30.4mm)		

# 2-slot type



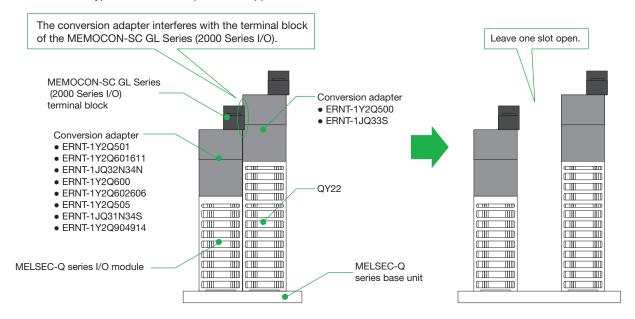
<sup>\*:</sup> Each depth is measured from the panel surface.

(MEMOCON-SC GL Series (2000 Series I/O): Base unit + I/O module + Terminal block (connector), MELSEC-Q series + Upgrade tool: Base adapter + Base unit + I/O module + Conversion adapter + Terminal block (connector))

# Check for Interference with Adjacent Modules

If the conversion adapter interferes with the adjacent conversion adapter, leave one slot open between them as shown below. Note that an open slot is not required when the MELSEC-Q series large type base unit is used because there will be a gap between modules.

Note: The 2-slot type conversion adapter is not applicable.



# **Conversion Adapter Support Flange / Base Adapter**

When using a conversion adapter, the conversion adapter support flange is required. We recommend use of a base adapter that permits MELSEC-Q series installation using the mounting holes of the MEMOCON-SC GL Series (2000 Series I/O) (additional drilling of holes is not required).



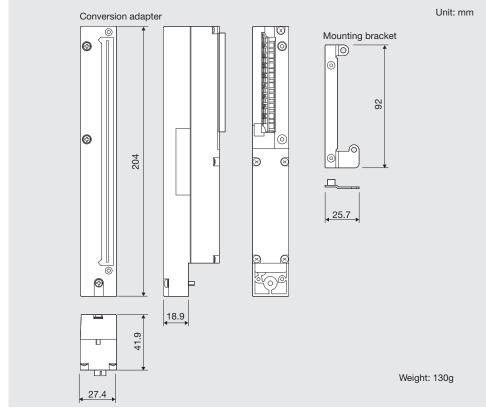
# **External Dimensions**

# **Conversion Adapter**



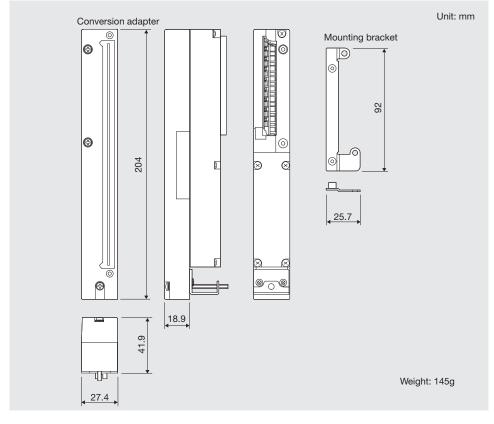
Model names:

**ERNT-1Y2Q501** ERNT-1Y2Q601611 **ERNT-1Y2Q600** 





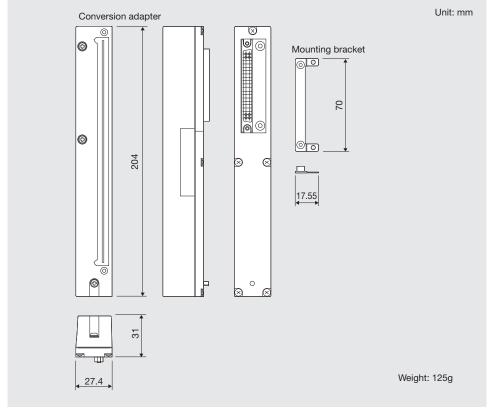
Model name: **ERNT-1Y2Q500** 





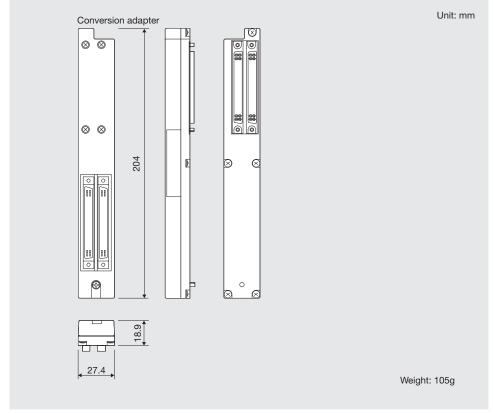


Model names: ERNT-1JQ32N34N ERNT-1Y2Q602606





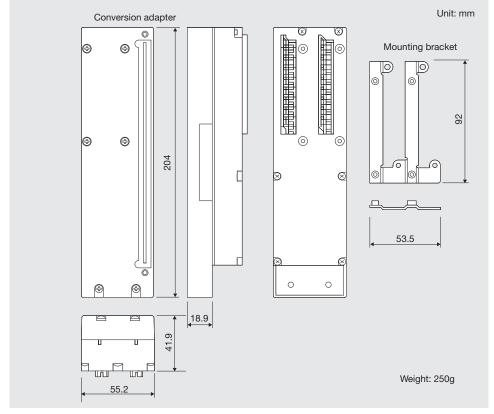
Model name: ERNT-1Y2Q615625





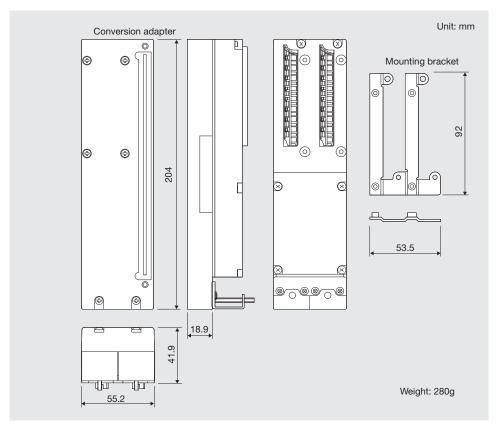
Model names: ERNT-1JQ31N34S ERNT-1Y2Q505

ERNT-1Y2Q904914



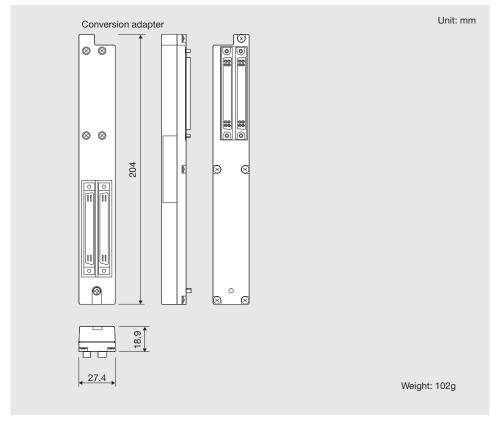


Model name: ERNT-1JQ33S





Model name: **ERNT-CQCY213** 





# Non-Mitsubishi Programmable Controller ⇒ MELSEC-Q Series Non-Mitsubishi Q series Upgrade Tool "Universal Conversion Adapter"

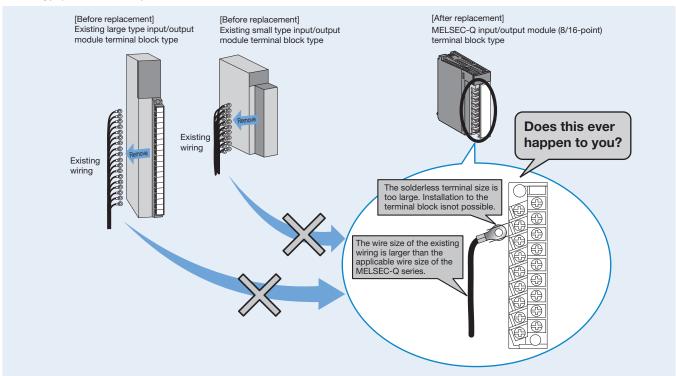
# Upgrading from a non-Mitsubishi programmable controller to the MELSEC-Q Series

Universal conversion adapter

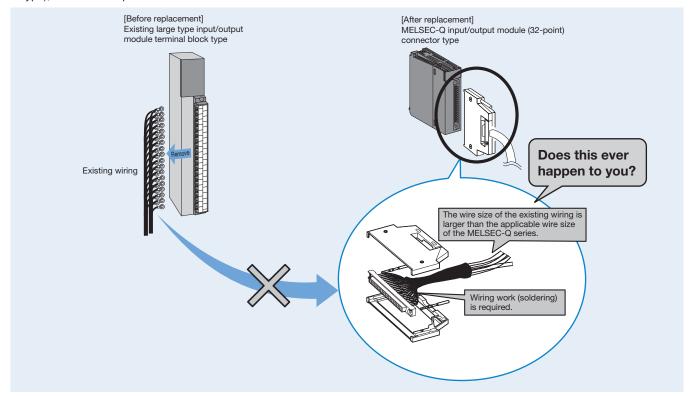
This universal conversion adapter reduces the burden of rewiring input/output modules (terminal block type) when replacing a non-Mitsubishi programmable controller with a MELSEC-Q series programmable controller manufactured by Mitsubishi Electric.

# **Product Overview**

•When you want to replace a non-Mitsubishi programmable controller (terminal block type) with the MELSEC-Q series (terminal block type), but there is a problem



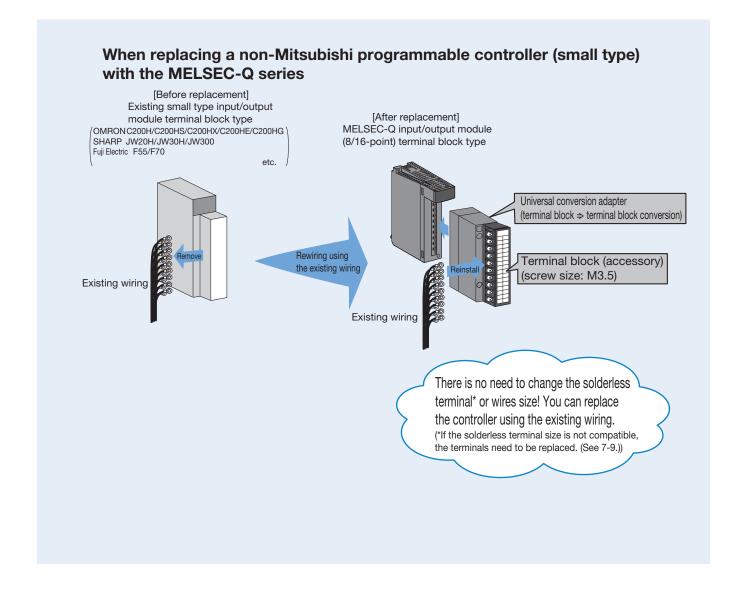
•When you want to replace a non-Mitsubishi programmable controller (terminal block type) with the MELSEC-Q series (connector type), but there is a problem



Consider the use of the "universal conversion adapter" as a solution.

If the specifications of your existing connected devices satisfy **MELSEC-Q** series input/output module specifications, vou can use the universal conversion adapter for replacement, regardless of the manufacturer of the existing programmable controller!

Note that this product (universal conversion adapter) is designed under the premises that rewiring (reinstallation of existing wiring to the terminal block) will be performed by the user.



# The universal conversion adapter can be also used to...

- Replace the MELSEC-A series, MELSEC-AnS series, or SYSMAC C series modules, for which conventional conversion adapters are incompatible, with the MELSEC-Q series.
- When the existing connected devices are used with a module with the specification of 8 points/common, a common separation module "QX40H/QX70H/QX80H/QX90H" can be used as replacement.

#### MELSEC-A series / MELSEC-Q series

# <Modules for which conventional conversion adapters are incompatible>

I	MELSI	EC-A series module before replaceme	ent		MELSEC-Q series module after repla	acement	
Input/Output	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules
	AX20(-UL)	200-240VAC	16 points	QX28	100-240VAC	8 points	2 modules
	AX21(EU)	200-240VAC	32 points	QX28	100-240VAC	o points	4 modules
	AX80	12/24VDC source	16 points	QX70	5/12VDC positive/negative common	16 points	1 modules
Input	AX80E	12/24VDC Source	16 points	QX70	5/12VDC positive/flegative continon	To points	1 modules
	AX81	12/24VDC source	32 points	QX71	5/12VDC positive/negative common	32 points	1 modules
	AX81-S1	12/24VDC sink/source	32 points	QX71	- 5/12 VDC positive/negative continon		1 modules
	AX31	12/24VDC 12/24VAC	32 points	QX41	24VDC	32 points	1 modules
	AAST	12/24VDC 12/24VAC	32 points	QX71	12VDC	32 points	1 modules
	AY20EU	100-240VAC	16 points	QY22	100-240VAC	16 points	1 modules
	AY40A	12/24VDC 0.3A independent	16 points	QY68A			2 modules
	AY60	04)/DC/(10/40)/DC) 04	16 points	QY68A			2 modules
Output	AY60E	24VDC/(12/48VDC) 2A	16 points	QY68A	5-24VDC 2A independent	8 points	2 modules
	AY60EP	12/24VDC 2A	16 points	QY68A			2 modules
	AY60S(-UL)	24/48VDC/(12VDC) 2A	16 points	QY68A			2 modules
	AY15EU	240VAC 2A	24 points	QY10	240VAC 2A	16 points	2 modules

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

#### <Modules for which each common terminal is shared by 8 points>

Input/Output	MELSEC-A series module before replacement			MELSEC-Q series module after replacement				
	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules	
	AX40(-UL)	12/24VDC sink, 8 points/common	16 points	QX40H	24VDC positive common, 8 points/common	16 points	1 modules	
	AV70( III )	70(-UL) 5/12/24VDC sink/source, 8 points/common	16 points	QX70H	5VDC positive common, 8 points/common	16 points	1 modules	
Input	AX70(-OL)		16 points	QX90H	5VDC negative common, 8 points/common	16 points	1 modules	
-	AX80(-UL)	12/24VDC source, 8 points/common	16 points	OVOOL	24VDC negative common, 8 points/common	16 points	1 modules	
	AX80E	12/24VDC source, a points/confinion	16 points	QXOUT	24VDC negative common, 8 points/common	16 points	i modules	

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

# MELSEC-AnS series / MELSEC-Q series

#### <Modules for which conventional conversion adapters are incompatible>

Innut/Outnut		MELSE	C-AnS series module before replaceme	nt	MELSEC-Q series module after replacement				
Input/Outpu	١	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules	
Input		A1SX30	12/24VDC 12/24VAC	16 points	QX40	24VDC positive common	16 points	1 modules	
		A1SY14EU	24VDC/240VAC	12 points	QY10	24VDC/240VAC	16 points	1 modules	
Output *	**	A1SY18A(EU)	24VDC/240VAC	8 points	QY18A	24VDC/240VAC	8 points	1 modules	
*	**	A1SY68A	5/12/24/48VDC sink/source	8 points	QY68A	5-24VDC sink/source	8 points	1 modules	
		A1SX48Y58	Input 24VDC sink	Input 8 points	QX48Y57	Input 24VDC positive common	Input 8 points	1 modules	
Combined input/output		A13A40130	Output 12/24VDC sink	Output 8 points	QA46137	Output 12-24VDC sink	Output 7 points	1 modules	
Comminen inhat/ortha		A1SX48Y18	Input 24VDC sink	Input 8 points	QX40+QY10	Input 24VDC positive common	Input 16 points	1 madula : 1 madula	
			Output 24VDC/240VAC	Output 8 points	QA40+Q110	Output 24VDC/240VAC	Output 16 points	1 module + 1 module	

#### SYSMAC C series / MELSEC-Q series

# <Modules for which conventional conversion adapters are incompatible>

Innert (Output	SYSM	SYSMAC C series module before replacement			MELSEC-Q series module after replacement				
Input/Output	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules		
	C500-IA222	200-240VAC	16 points	QX28	100-240VAC	8 points	2 modules		
Input	C500-IA223	200-240VAC	32 points	QX28	100-240VAC	8 points	4 modules		
	C500-OC223	24VDC/250VAC independent	16 points	QY18A	24VDC/240VAC independent	8 points	2 modules		
0	C500-OD215	24VDC sink independent	16 points	QY68A	5-24VDC sink/source independent	8 points	2 modules		
Output	C500-OD212	12-24VDC source	32 points	QY81P	12-24VDC source	32 points	1 modules		
	C500-OA223	250VAC	24 points	QY22	100-240VAC	16 points	2 modules		

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

# <Modules for which each common terminal is shared by 8 points>

Input/Output	SYSMAC C series module before replacement			MELSEC-Q series module after replacement			
	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules
l	C500-ID112	5-12VDC sink, 8 points/common	16 points	QX70H	5VDC positive common, 8 points/common	16 points	1 modules
Input	C500-ID213	12-24VDC sink, 8 points/common	16 points	QX40H	24VDC positive common, 8 points/common	16 points	1 modules

<sup>\*</sup>Input specifications: Sink = Positive common

<sup>\*</sup>Input specifications: Sink = Positive common
\*\*Rewiring is unnecessary. The terminal block provided with the universal conversion adapter is not used.

# New Satellite JW Series (large type) / MELSEC-Q series

#### <Modules for which conventional conversion adapters are incompatible>

Input/Output	New Satellite JW Ser	New Satellite JW Series (large type) module before replacement			MELSEC-Q series module after replacement				
iiipul/Output	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules		
Input	JW-13N	200-240VAC	16 points	QX28	100-240VAC	8 points	2 modules		
Output	JW-35S	12/24VDC source	32 points	QY81P	12/24VDC source	32 points	1 module		
Analog input	JW-8AD	0 to ±10VDC, 0 to ±20mADC 14-bit signed binary	8 channels	Q68AD-G	-10 to 0 to +10VDC, 0 to 20mADC 16-bit signed binary	8 channels	1 module		
Analog output	JW-2DA	0 to ±10VDC, 0 to ±20mADC 11-bit signed binary	2 channels	Q62DAN	-10 to +10VDC, 0 to 20mADC 16-bit signed binary	2 channels	1 module		
High-speed counter input	JW-2HC	50/20/15/8kpps 24-bit binary	2 channels	QD62	200/100/10kpps 32-bit binary	2 channels	1 module		

<sup>\*</sup>Input specifications: Source = Negative common

#### <Modules for which each common terminal is shared by 8 points>

Input/Output	New Satellite JW Ser	ies (large type) module before	replacement	MELSEC-Q series module after replacement			
input/Output	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules
	JW-12N	12/24VDC, 24VAC Positive/Negative common	16 points	QX40H	24VDC positive common, 8 points/common	16 points	1 module
				QX80H	24VDC negative common, 8 points/common	16 points	1 module
Input	JW-32N	12/24VDC, 24VAC Positive/Negative common	32 points	QX40H	24VDC positive common, 8 points/common	16 points	2 modules
input	JVV-32IV		32 points	QX80H	24VDC negative common, 8 points/common	16 points	2 modules
	JW-34N	12/24VDC	32 points	QX40H	24VDC positive common, 8 points/common	16 points	2 modules
	JVV-34IV	Positive/Negative common	32 points	QX80H	24VDC negative common, 8 points/common	16 points	2 modules

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

# New Satellite JW Series (small type) / MELSEC-Q series

#### <Modules for which conventional conversion adapters are incompatible>

Innut/Outnut	New Satellite JW Se	ries (small type) module before	replacement	MEI	LSEC-Q series module after replace	ment	
Input/Output	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules
	JW-203N	200/240VAC	8 points	QX28	100-240VAC	8 points	1 module
	JW-201N	100/120VAC	8 points	QX28	100-240VAC	8 points	1 module
Input	JW-202N	12/24VDC	8 points	QX40,QX40-S1	24VDC positive common	16 points	1 module
	OVV ZOZIV	12/24400	o points	QX70	12VDC positive common	16 points	1 module
	JW-203S	100/120VAC	8 points	QY22	100-240VAC	16 points	1 module
Output	JW-204S JW-204SA	250VAC/30VDC 2A independent	8 points	QY18A	240VAC/24VDC 2A independent	8 points	1 module
	JW-202S	5/12/24VDC sink	8 points	QY68A	5-24VDC 2A independent	8 points	1 module
	JW-215SA	5/12/24VDC source	16 points	QY80P	12/24VDC source	16 points	1 module
Analog input	JW-24AD	0 to ±10VDC, 0 to ±20mADC 13-bit signed binary	4 channels	Q64AD	-10 to 0 to +10VDC, 0 to 20mADC 16-bit signed binary	4 channels	1 module
Analog output	JW-222DA	0 to ±10VDC, 0 to ±20mADC 15-bit signed binary	2 channels	Q62DAN	-10 to +10VDC, 0 to 20mADC 16-bit signed binary	2 channels	1 module
High-speed counter input	JW-21HC	60kpps 32-bit binary	1 channels	QD62	200/100/10kpps 32-bit binary	2 channels	1 module
	JW-22HC	240kpps 32-bit binary	2 channels	QD62	200/100/10kpps 32-bit binary	2 channels	1 module

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

#### <Modules for which each common terminal is shared by 8 points>

Input/Output	New Satellite JW Series (small type) module before replacement			MELSEC-Q series module after replacement				
	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules	
Input	JW-212N JW-212NA	12/24VDC	16 points	QX40H	24VDC positive common, 8 points/common	16 points	1 module	
	JW-214N JW-214NA	Positive/Negative common		QX80H	24VDC negative common, 8 points/common	16 points	1 module	

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

# MEMOCON-SC GL Series (2000 Series I/O) / MELSEC-Q series

# <Modules for which conventional conversion adapters are incompatible>

11110000100	anounce for miles controlled a controlled adaptive are incompanion									
Input/Output	MEMOCON-SC GL S	Series (2000 Series I/O) before I	replacement	MELSEC-Q series module after replacement						
	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules			
Input	JAMSC-B2503A	200VAC	16 points	QX28	100-240VAC	8 points	2 module			
Прис	JAMSC-B2507A	200VAC	32 points	QX28	100-240VAC	8 points	4 module			
	JAMSC-B2912	100/200VAC 24VDC	32 points	QY10	100-200VAC 24VDC	16 points	2 module			
Output	JAMSC-B2624	5VDC sink	64 points	QY41H	5/12/24VDC sink	32 points	2 module			
Οιιριί	JAMSC-B2630	12/24VDC source	16 points	QY80	12/24VDC source	16 points	1 module			
	JAMSC-B2632	12/24VDC source	32 points	QY81P	12/24VDC source	32 points	1 module			

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

# <Modules for which each common terminal is shared by 8 points>

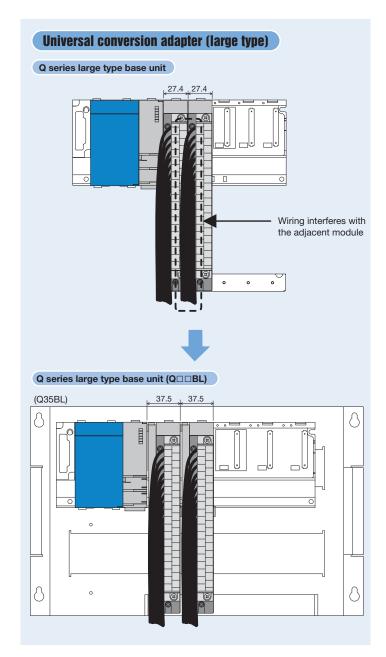
Innest Outnest	MEMOCON-SC GL Series (2000 Series I/O) before replacement			MELSEC-Q series module after replacement			
Input/Output	Model	Specifications*	No. of points	Model	Specifications*	No. of points	No. of required modules
	JAMSC-B2601	12/24VDC	16 points	QX40H	24VDC positive common, 8 points/common	16 points	1 module
Input	JAMSU-BZ001	Positive/Negative common	16 points	QX80H	24VDC negative common, 8 points/common	16 points	1 module
прис	JAMSC-B2603	12/24VDC	32 points	QX40H	24VDC positive common, 8 points/common	16 points	2 module
	JAMSO-02003	Positive/Negative common	32 points	QX80H	24VDC negative common, 8 points/common	16 points	2 module

<sup>\*</sup>Input specifications: Sink = Positive common, Source = Negative common

Verify that the MELSEC-Q series module specifications satisfy the specifications of the connected devices and equipment.

# Utilizing the Mitsubishi Electric Q series / AnS-size Q series large type base unit

If this is smaller than the width of the existing module, a wiring interference may occur with adjacent modules due to a narrow wiring space. The Mitsubishi Electric Q series large type base unit ( $Q \square \square BL$ ) or AnS-size Q series large type base unit ( $Q \square \square BLS$ ,  $Q \square \square BLS$ -D) can be used to secure a wider space and alleviate the interference.



# Universal conversion adapter (small type) Q series large type base unit Wiring interferes with the adjacent module AnS-size Q series large type base unit (Q□□BLS, Q□□BLS-D) (Q35BLS) 0

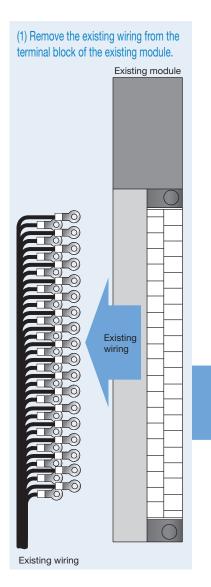
# List of the Q series large type base units

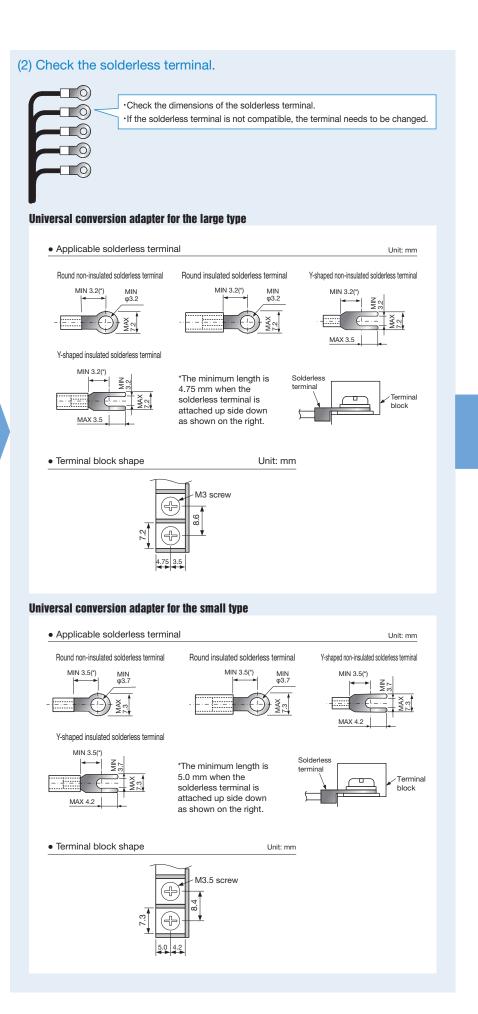
Main/Extension	Q series large type base unit model
Main	Q35BL
IVIairi	Q38BL
	Q65BL
Extension	Q68BL
	Q55BI

List of the AnS-size Q series large type base units

NA-i/Fti	Q series large type base unit model				
Main/Extension	Panel surface installation type	DIN rail installation type			
	Q35BLS	Q35BLS-D			
Main	Q38BLS	Q38BLS-D			
	Q65BLS	Q65BLS-D			
Extension	Q68BLS	Q68BLS-D			
	Q55BLS	Q55BLS-D			

# **Replacement flow**



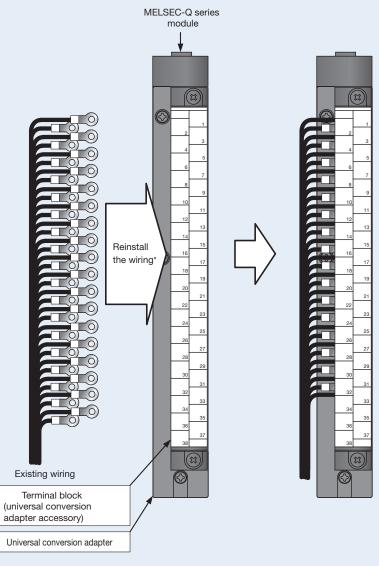


# (3) Reinstall the existing wiring to the terminal block of the universal conversion adapter.

Check the external connection diagram of each MELSEC-Q series module to be used, and reinstall the existing wiring to the terminal block of the universal conversion adapter.

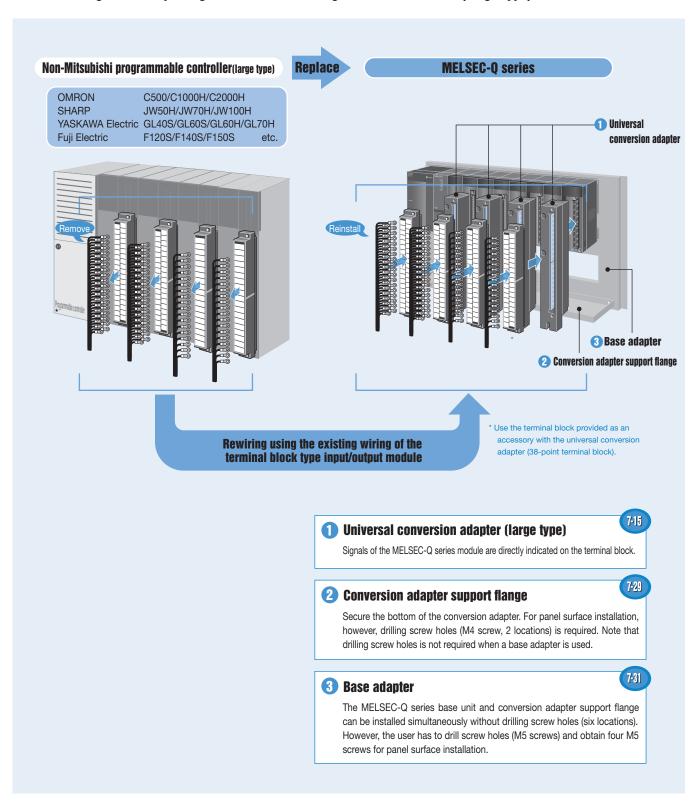
External connection diagram (example)

		[ , ,	r
		Terminal number	Signal name
	<u> </u>	TB1	X00
	<b>─</b>	TB2	X01
	<del></del>	TB3	X02
Terminal block	<del></del>	TB4	X03
Torrillia brook	<del></del>	TB5	X04
TB1	<b>├</b> ┈	TB6	X05
TB2 X00 X01 TB3	<del></del>	TB7	X06
TB4 X02	<del></del>	TB8	X07
X03 TB5	<b></b>	TB9	X08
TB6 X04	<b></b>	TB10	X09
X05 TB7 TB8 X06	<del></del>	TB11	XOA
X07 TB9	<del></del>	TB12	X0B
TB10 X08		TB13	XOC
X09TB11 TB12 X0A		TB14	XOD
X0B TB13		TB15	X0E
TB14 X0C		TB16	X0F
X0D TB15		TB17	X10
TB16 X0E X0F TB17		TB18	X10
TB18 X10		TB19	X12
X11 TB19		-	
TB20 X12 X13 TB21		TB20	X13
TB22 X14		TB21	X14
X15 TB23		TB22	X15
TB24 X16		TB23	X16
X17TB25 TB26 X18		TB24	X17
X19 TB27	<b>├</b> ┈	TB25	X18
TB28 X1A	<b>├</b> ┈	TB26	X19
X1B TB29 TB30 X1C	<b>├</b> ~~~	TB27	X1A
X1D TB31	<del></del>	TB28	X1B
TB32 X1E	<del></del>	TB29	X1C
X1F TB33	<b>─</b> ⊸	TB30	X1D
TB34 COM Open TB35	<del></del>	TB31	X1E
TB36 Open	<del></del>	TB32	X1F
Open TB37	<u> </u>	TB33	сом
TB38 Open	DC24V	TB34	Open
Cheiil		TB35	Open
		TB36	Open
		TB37	Open
		TB38	Open
		_ 1000	Open



- \* After replacement, connect the wires in accordance with the terminal numbers and signal names when the universal conversion adapter was used.
- \* Depending on the difference in the number of points per common, such as a change from 8 points/common to 16 points/common, connection changes on the connected device (switch, etc.) side may be required.
- $^{\star}$  When any wires are left unconnected, connect them to open terminals or insulate them.

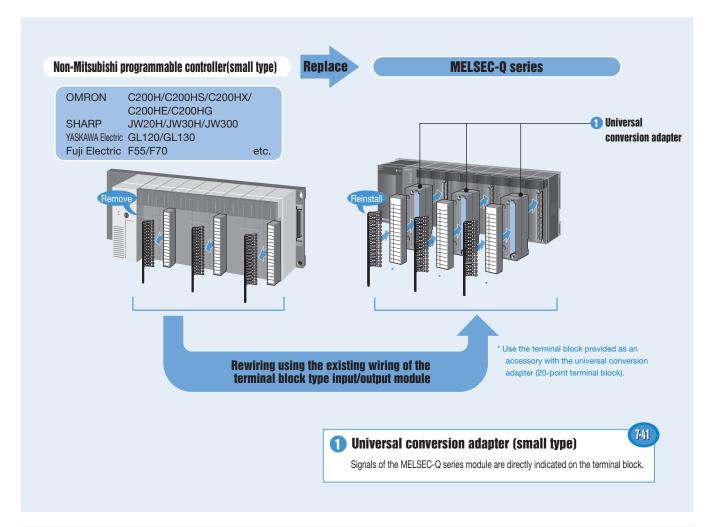
# Schematic Diagram for Replacing a Non-Mitsubishi Programmable Controller (Large Type) with the MELSEC-Q Series



Point

The universal conversion adapter (large type) can be used in the system after replacing the MELSEC-A series or SYSMAC C series with the MELSEC-Q series using the upgrade tool. The universal conversion adapter can be also used with Mitsubishi Electric Q series large type base units ( $Q \square \square BL$ ).

# Schematic Diagram for Replacing a Non-Mitsubishi Programmable Controller (Small Type) with the MELSEC-Q Series



Point

The universal conversion adapter (small type) can be used in the system after replacing the MELSEC-AnS series with the MELSEC-Q series using the upgrade tool. The universal conversion adapter can be also used with the Mitsubishi Electric AnS-size Q series large type base units ( $Q \square BLS$ ,  $Q \square BLS$ -D).

# Replacing a Non-Mitsubishi Programmable Controller (Large Type) with the MELSEC-Q Series Model List

## 1 Universal Conversion Adapter (Large Type)

Verify that the MELSEC-Q series module electrical specifications satisfy the specifications of existing connected devices.

#### For input/output module

<1-slot type>(Attachable to the Mitsubishi Electric Q series large type base unit (Q BL) as well)

	MELSEC-Q series module model after replacement	Conversion adapter			
Input/Output		Model	Sha	Page	
		iviodei	Terminal block (accessory)	MELSEC-Q series	
	QX10				
	QX28				
	QX40				
	QX40-S1				
	QX40H			1 1 1	
Input	QX50				
	QX70			 	
	QX70H				
	QX80		Townsia at blook (*)	Townsings blook	7-15
	QX80H	ERNT-AQTB20	Terminal block (*) (38 points)	Terminal block (18 points)	7-15 7-16 to 7-22
	QX90H				
	QY10				
	QY18A				
	QY40P				
Output	QY50				
	QY68A				
	QY70				
	QY80			1 1	
Combined input/output	QX48Y57				
Output	QY22	ERNT-AQTB20-S1	Terminal block (*)	Terminal block	7-15
Оптрит		ETHT AGTB20 OT	(38 points)	(18 points)	7-23
	QX41				
Input	QX41-S1				
mpat	QX41-S2			FCN connector (40P)	
	QX71	ERNT-AQTB38	Terminal block		7-15
	QY41P	ETHT-AGTEGO	(38 points)		7-24 to 7-26
Output	QY41H			1 1	
	QY71			1	
Input	QX81		Terminal block	D-Sub connector (37P)	7-15
IIIput	QX81-S2	ERNT-AQTB38-E	(38 points)		7-15 7-27 to 7-28
Output	QY81P		(oo points)	(071)	7-27 10 7-20

<sup>\*</sup>The terminal block provided as an accessory is a 38-point terminal block.

Point

The universal conversion adapter (large type) can be used in the system after replacing the MELSEC-A series or SYSMAC C series with the MELSEC-Q series using the upgrade tool.

## Conversion Adapter Support Flange (Required)

The product used is the same as the upgrade tool for the MELSEC-A/MELSEC-Q series. The support flange secures the bottom of the conversion adapter. One support flange is required per base unit.

#### Note

•For panel surface installation, drilling screw holes (M4 screw, 2 locations) is required. Drilling screw holes is not required when a base adapter is used.

Conversion adapter support flange model	Specifications	Page
ERNT-AQF12	12-slot conversion adapter support flange	
ERNT-AQF8	8-slot conversion adapter support flange	7-29 to 7-30
ERNT-AQF5	5-slot conversion adapter support flange	7-29 10 7-30
ERNT-AQF3	3-slot conversion adapter support flange	

### **3** Base Adapter

The product used is the same as the upgrade tool for the MELSEC-A/MELSEC-Q series. Both the MELSEC-Q series base unit and the conversion adapter support flange can be installed on the base adapter without drilling screw holes. For the base unit models marked with \*1 to \*5, two or more base adapter models are applicable. Select the most suitable base adapter according to the product dimensions.

#### Note

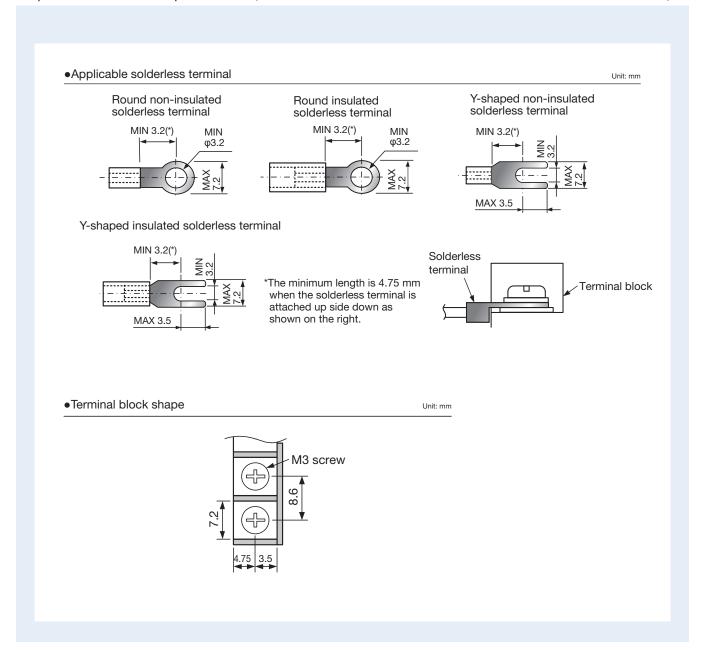
•The user has to drill screw holes (M5 screw, 4 locations) and obtain four M5 screws for panel surface installation.

	Mountable product					Product dimensions		
Base adapter model	MELSEC-Q series base unit			0	Width x Height	Page		
	12 slots	8 slots	5 slots	3 slots	2 slots	Conversion adapter support flange	(mm)	
ERNT-AQB38	Q312B					ERNT-AQF12,ERNT-AQF8	480×240	
ENIVI-AGD30		Q38B(*1)				ERNT-AQF8	400×240	
ERNT-AQB35		Q38B(*1)				ERNT-AQF8,ERNT-AQF5	382×240	
ENNI-AGD33			Q35B			ERNT-AQF5	302.8240	
ERNT-AQB32				Q33B		ERNT-AQF3	247×240	
ERNT-AQB68	Q612B					ERNT-AQF12,ERNT-AQF8	466×240	7-31 to 7-32
LINIT-AGD00		Q68B(*2)				ERNT-AQF8		
		Q68B(*2)				ERNT-AQF8,ERNT-AQF5	352×240	
ERNT-AQB65			Q65B(*3)			ERNT-AQF5		
			Q55B(*4)			ENNI-AGES		
ERNT-AQB62				Q63B	Q52B(*5)	ERNT-AQF3	238×240	
ERNT-AQB58		Q68B(*2)				ERNT-AQF8	411×240	
ERNT-AQB55			Q65B(*3)			ERNT-AQF5	297×240	
EUN I-AMBOO			Q55B(*4)			ENNI-AQF5	291 ×240	
ERNT-AQB52					Q52B(*5)	ERNT-AQF3	183×240	

# **Universal Conversion Adapter**

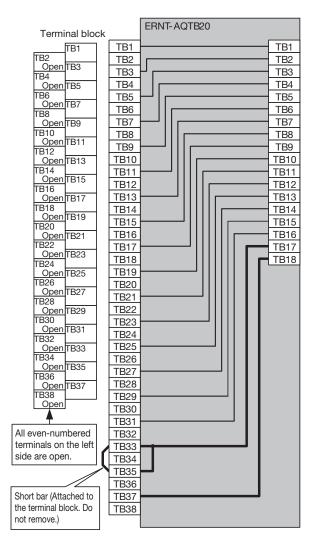
### Specifications

38-point terminal block specifications(common to ERNT-AQTB20, ERNT-AQTB20-S1, ERNT-AQTB38, ERNT-AQTB38-E)



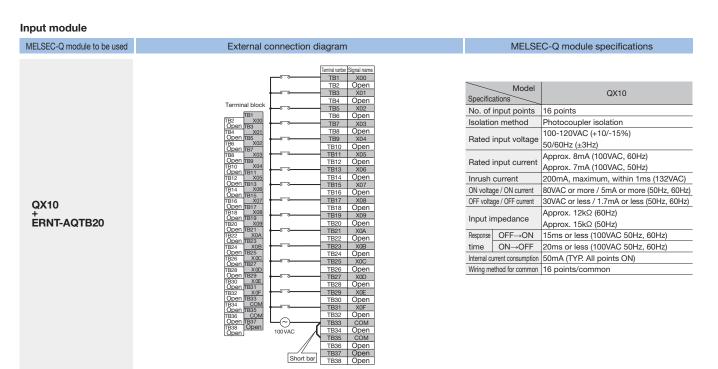
#### (1) ERNT-AQTB20

#### **Connection diagram**



MELSEC-Q series module

TB2	TB1
TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13



#### External connection diagram

#### MELSEC-Q module specifications

		Terminal number	Signal name
		TB1	X00
		TB2	
			Open
		TB3	Open
Terminal block		TB4	Open
	<b></b>	TB5	X01
TB1 X00		TB6	Open
Open TB3		TB7	Open
TB4 Open		TB8	Open
Open TB5	<del></del>	TB9	X02
TB6 X01 Open TB7		TB10	Open
TB8 Open		TB11	Open
Open TB9		TB12	Open
TB10 X02		TB13	X03
Open TB11 TB12 Open	I	TB14	Open
Open TB13		TB15	Open
TB14 X03		TB16	Open
Open TB15	1	TB17	X04
TB16 Open Open TB17	$\Gamma$		
TB18 X04		TB18	Open
Open TB19		TB19	Open
TB20 Open		TB20	Open
Open TB21 TB22 X05		TB21	X05
Open TB23		TB22	Open
TB24 Open		TB23	Open
Open TB25		TB24	Open
TB26 X06 Open TB27	<del></del>	TB25	X06
TB28 Open		TB26	Open
Open TB29		TB27	Open
TB30 X07		TB28	Open
Open TB31 TB32 Open	<u> </u>	TB29	X07
Open TB33		TB30	Open
TB34 COM		TB31	Open
Open TB35 TB36 COM		TB32	Open
TB36 COM Open TB37		TB33	
TB38 Open	~~~		COM
Open	100-240VAC	TB34	Open
		TB35	COM
		TB36	Open
	Short bar	TB37	Open
	Onort bai	TB38	Open

Model Specifications		QX28	
No. of	input points	8 points	
Isolatio	n method	Photocoupler isolation	
Datad		100-240VAC (+10/-15%)	
Hateu	input voltage	50/60Hz (±3Hz)	
Datad		Approx. 17mA (200VAC, 60Hz), Approx. 14mA (200VAC, 50Hz)	
Rated	input current	Approx. 8mA (100VAC, 60Hz), Approx. 7mA (100VAC, 50Hz)	
Inrush	current	950mA, maximum, within 1ms (264VAC)	
ON volta	ge / ON current	80VAC or more / 5mA or more (50Hz, 60Hz)	
OFF volta	age / OFF current	30VAC or less / 1.7mA or less (50Hz, 60Hz)	
Innut is	mandanaa	Approx 12kΩ (60Hz)	
Input impedance		Approx 15kΩ (50Hz)	
Response	Response OFF→ON 10ms or less (100VAC 50Hz, 60Hz)		
time	ON→OFF	15ms or less (100VAC 50Hz, 60Hz)	
Internal current consumption		50mA (TYP. All points ON)	
Wiring method for common		8 points/common	

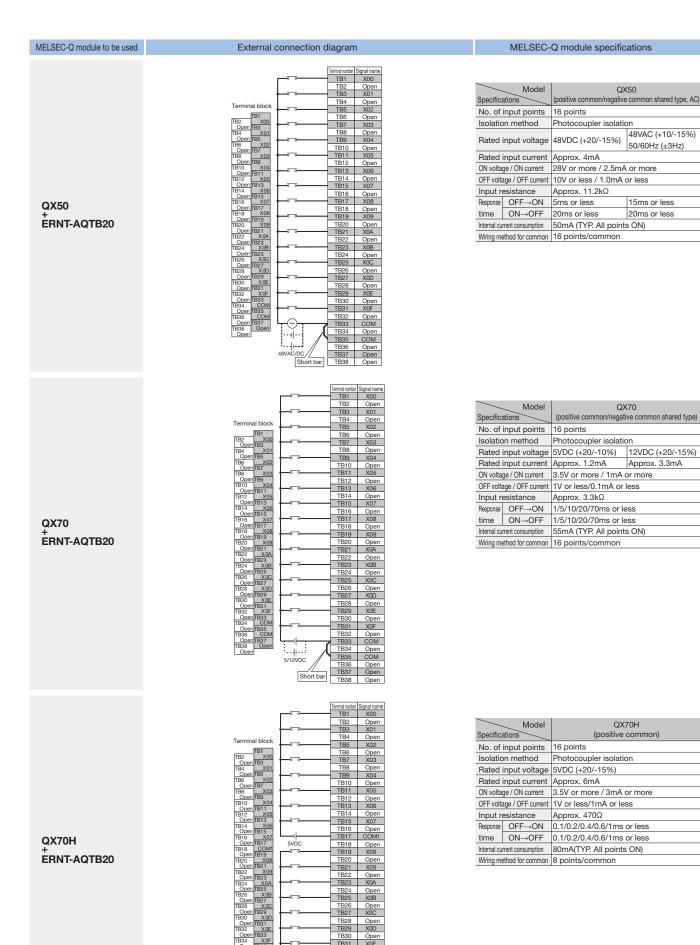
		Terminal number	Signal name
		TB1	X00
		TB2	Open
	<del></del>	TB3	X01
		TB4	Open
Terminal block	<del></del>	TB5	X02
TB1		TB6	Open
TB2 X 00 Open TB3	<del></del>	TB7	X03
TB4 X 01		TB8	Open
Open TB5	<del></del>	TB9	X04
TB6 X02 Open TB7		TB10	Open
TB8 X 03	<del></del>	TB11	X05
Open TB9		TB12	Open
TB10 X04 Open TB11		TB13	X06
TB12 X 05		TB14	Open
Open TB13	<del></del>	TB15	X07
TB14 X06 Open TB15		TB16	Open
TB16 X07	<del></del>	TB17	X08
Open TB17		TB18	Open
TB18 X08 Open TB19		TB19	X09
TB20 X 09		TB20	Open
Open TB21	<del></del>	TB21	X0A
TB22 X0A Open TB23		TB22	Open
TB24 X0B	<del></del>	TB23	X0B
Open TB25		TB24	Open
TB26 X0C Open TB27	<b>─</b> ~	TB25	X0C
TB28 X0D		TB26	Open
Open TB29	<del></del>	TB27	X0D
TB30 X0E Open TB31		TB28	Open
TB32 X0F		TB29	X0E
Open TB33		TB30	Open
TB34 COM Open TB35	<del></del>	TB31	X0F
TB36 COM		TB32	Open
Open TB37	<b>——</b>	TB33	COM
TB38 Open Open	24VDC	TB34	Open
Орон	/\	TB35	COM
		TB36	Open
	(Ob	TB37	Open
	Short bar	TB38	Open

Model		QX40	QX40-S1
Specifica	ations	(positive common)	(positive common)
No. of	input points	16 points	16 points
Isolatio	n method	Photocoupler isolation	Photocoupler isolation
Rated	input voltage	24VDC (+20/-15%)	24VDC (+20/-15%)
Rated	input current	Approx. 4mA	Approx. 6mA
ON volta	ge / ON current	19V or more / 3mA or more	19V or more / 4.0mA or more
OFF volta	age / OFF current	11V or less /1.7mA or less	11V or less / 1.7mA or less
Input r	esistance	Approx. 5.6kΩ	Approx. 3.9kΩ
Response	OFF→ON	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less
time	ON→OFF	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less
Internal cu	rrent consumption	50mA (TYP. All points ON)	60mA (TYP. All points ON)
Wiring method for common		16 points/common	16 points/common

QX40H + ERNT-AQTB20

		Terminal number	Signal name
	<u> </u>	TB1	X00
		TB2	Open
	<del></del>	TB3	X01
		TB4	Open
Terminal block		TB5	X02
TB1		TB6	Open
TB2 X00		TB7	X03
Open TB3 TB4 X01		TB8	Open
Open TB5		TB9	X04
TB6 X02	I	TB10	Open
Open TB7 TB8 X03		TB11	X05
Open TB9		TB12	Open
TB10 X04		TB13	X06
Open TB11		TB14	Open
TB12 X05 Open TB13	L	TB15	X07
TB14 X06	T ,		
Open TB15	l a	TB16	Open
TB16 X07 Open TB17	24VDC	TB17	COM
TB18 COM1	24VDC	TB18	Open
Open TB19	┌	TB19	X08
TB20 X08 Open TB21		TB20	Open
TB22 X09	$\overline{}$	TB21	X09
Open TB23		TB22	Open
TB24 X0A	<b>-</b> - •	TB23	XOA
Open TB25 TB26 X0B		TB24	Open
Open TB27	<b>─</b> ~	TB25	X0B
TB28 X0C		TB26	Open
Open TB29 TB30 X0D	<del></del>	TB27	X0C
Open TB31		TB28	Open
TB32 X0E	<del></del>	TB29	X0D
Open TB33		TB30	Open
TB34 X0F Open TB35	<del></del>	TB31	X0E
TB36 X0F		TB32	Open
Open TB37	<b>─</b> ~	TB33	X0F
TB38 COM2 Open	ار ا	TB34	Open
Obelil	Short bar	TB35	X0F
	SHOILDAN	TB36	Open
	<b>└</b>	TB37	COM2
	24VDC	TB38	Open

_			
	Model	QX40H	
Specifica	ations	(positive common)	
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	
Rated	input voltage	24VDC(+20/-15%)	
Rated	input current	Approx. 6mA	
ON volta	ge / ON current	13V or more / 3mA or more	
OFF volta	age / OFF current	8V or less / 1.6mA or less	
Input r	esistance	Approx. 3.9kΩ	
Response	OFF→ON	0.1/0.2/0.4/0.6/1ms or less	
time	ON→OFF	0.1/0.2/0.4/0.6/1ms or less	
Internal cu	rrent consumption	80mA (TYP. All points ON)	
Wiring me	ethod for common	8 points/common	



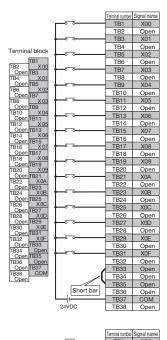
Ope TB36

TB34 Open TB35 X0F

TB36 Open TB37 COM2 TB38 Open

Short bar

### MELSEC-Q module specifications



	Model	QX80	
Specifica	ations	(negative common)	
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	
Rated	input voltage	24VDC(+20/-15%)	
Rated	input current	Approx. 4mA	
ON volta	ge / ON current	19V or more / 3mA or more	
OFF volta	ge / OFF current	11V or less / 1.7mA or less	
Input re	esistance	Approx. 5.6kΩ	
Response	OFF→ON	1/5/10/20/70ms or less	
time	ON→OFF	1/5/10/20/70ms or less	
Internal current consumption		50mA (TYP. All points ON)	
Wiring me	thod for common	16 points/common	

	<u> </u>	TB1	X00
	l	TB2	Open
		TB3	X01
Township of help of		TB4	Open
Terminal block		TB5	X02
TB1		TB6	Open
TB2 X 00 Open TB3		TB7	X03
TB4 X 01		TB8	Open
Open TB5		TB9	X04
TB6 X 02 Open TB7		TB10	Open
TB8 X 03		TB11	X05
Open TB9		TB12	Open
TB10 X04 Open TB11		TB13	X06
TB12 X 05		TB14	Open
Open TB13	<del></del>	TB15	X07
TB14 X06 Open TB15		TB16	Open
TB16 X07	<b>└</b> ─	TB17	COM1
Open TB17	24VDC	TB18	Open
TB18 COM1 Open TB19	<u> </u>	TB19	X08
TB20 X 08		TB20	Open
Open TB21		TB21	X09
TB22 X 09 Open TB23		TB22	Open
TB24 X0A		TB23	XOA
Open TB25		TB24	Open
TB26 X0B Open TB27		TB25	X0B
TB28 X0C		TB26	Open
Open TB29		TB27	XOC
TB30 X0D Open TB31		TB28	Open
TB32 X0E		TB29	X0D
Open TB33		TB30	Open
TB34 X0F Open TB35		TB31	X0E
TB36 X0F		TB32	Open
Open TB37	<b>─</b> ~	TB33	X0F
TB38 COM2 Open		TB34	Open
Open	Short bar	TB35	XOF
	Onort bar	TB36	Open
	<b>└</b>	TB37	COM2
	24VDC	TB38	Open

	Model	QX80H	
Specific	ations	(negative common)	
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	
Rated	input voltage	24VDC(+20/-15%)	
Rated	input current	Approx. 6mA	
ON volta	ge / ON current	13V or more / 3mA or more	
OFF volta	ge / OFF current	8V or less / 1.6mA or less	
Input r	esistance	Approx. 3.9kΩ	
Response	OFF→ON	0.1/0.2/0.4/0.6/1ms or less	
time	ON→OFF	0.1/0.2/0.4/0.6/1ms or less	
Internal cu	irrent consumption	80mA (TYP. All points ON)	
Wiring me	ethod for common	8 points/common	

QX90H ERNT-AQTB20

		Terminal number	Signal name
		TB1	X00
		TB2	Open
		TB3	X01
		TB4	Open
Terminal block		TB5	X02
TB1		TB6	Open
TB2 X 00 Open TB3		TB7	X03
TB4 X01		TB8	Open
Open TB5		TB9	X04
TB6 X 02 Open TB7		TB10	Open
TB8 X03		TB11	X05
Open TB9	1	TB12	Open
TB10 X04		TB13	X06
Open TB11 TB12 X05	I * *	TB14	Open
Open TB13		TB15	X07
TB14 X 06	I	TB16	Open
Open TB15		TB17	COM1
TB16 X07 Open TB17	5VDC	TB18	
TB18 COM1	3400	TB19	Open
Open TB19	□ -		X08
TB20 X 08 Open TB21	l	TB20	Open
TB22 X 09	T .	TB21	X09
Open TB23	l	TB22	Open
TB24 X0A	$\vdash$ $\cdot$	TB23	X0A
Open TB25 TB26 X0B		TB24	Open
Open TB27		TB25	X0B
TB28 X0C		TB26	Open
Open TB29 TB30 X0D		TB27	X0C
Open TB31	l	TB28	Open
TB32 X 0E		TB29	X0D
Open TB33	l	TB30	Open
TB34 X0F Open TB35		TB31	X0E
TB36 X0F	l	TB32	Open
Open TB37	<del></del>	TB33	X0F
TB38 COM2 Open	<b>ا</b> ر ا	TB34	Open
Ореп	Short bar	TB35	X0F
	SHOIL Dair	TB36	Open
	<b>└</b>	TB37	COM2
	5VDC	TB38	Open
			OPULI

	Model	QX90H	
Specific	ations	(negative common)	
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	
Rated	input voltage	5VDC(+20/-15%)	
Rated	input current	Approx. 6mA	
ON volta	ge / ON current	3.5V or more / 3mA or more	
OFF volta	ge / OFF current	1V or less / 1mA or less	
Input r	esistance	Approx. 470Ω	
Response	OFF→ON	0.1/0.2/0.4/0.6/1ms or less	
time	ON→OFF	0.1/0.2/0.4/0.6/1ms or less	
Internal cu	irrent consumption	80mA (TYP. All points ON)	
Wiring me	ethod for common	8 points/common	

#### Output module

Output module	<b>-</b>	
MELSEC-Q module to be used	External connection diagram	MELSEC-Q module specifications
QY10 + ERNT-AQTB20	Terminal block	Model   QY10
QY18A + ERNT-AQTB20	Terminal block    TB1	Model   Specifications

#### External connection diagram

# MELSEC-Q module specifications

		Terminal number	Signal name
		TB1	Y00
	l	TB2	Open
		TB3	Y01
Tamaka al lata ata		TB4	Open
Terminal block	$H$ $\Gamma$ $H$ $\Gamma$	TB5	Y02
TB1		TB6	Open
TB2 Y00 Open TB3	$+\Box$	TB7	Y03
TB4 Y01		TB8	Open
Open TB5	$+$ $\Box$ $-$	TB9	Y04
TB6 Y02 Open TB7		TB10	Open
TB8 Y03	$+\Box$	TB11	Y05
Open TB9	1 —	TB12	Open
TB10 Y04	$+\Box$	TB13	Y06
Open TB11 TB12 Y05		TB14	Open
Open TB13	HT-	TB15	Y07
TB14 Y06		TB16	Open
Open TB15 TB16 Y07	<del></del>	TB17	Y08
Open TB17		TB18	Open
TB18 Y08	<u></u>	TB19	Y09
Open TB19 TB20 Y09		TB20	Open
OpenTR21	L	TB21	YOA
TB22 Y0A		TB22	Open
Open TB23 TB24 Y0B	<u></u>	TB23	Y0B
OpenTB25		TB24	Open
TB26 Y0C	<u></u>	TB25	Y0C
Open TB27 TB28 Y0D		TB26	Open
Open TB29		TB27	YOD
TB30 Y0E	<u> </u>	TB28	Open
Open TB31	<u></u>	TB29	Y0E
TB32 Y0F Open TB33		TB30	
TB34 DC	L	TB31	Open Y0F
Open TB35			
TB36 DC Open TB37	1	TB32	Open DC
TB38 COM		TB33 TB34	
Open			Open
	Short bar	TB35	DC
		TB36	Open
	12/24VDC	TB37	COM
	12/24VDC	TB38	Open

Model		QY40P	QY50
Specific	cations	(Sink type)	(Sink type)
No. of	output points	16 points	16 points
Isolatio	on method	Photocoupler isolation	Photocoupler isolation
Rated	load voltage	12-24VDC(+20/-15%)	12-24VDC(+20/-15%)
Maximu	ım load current	0.1A/point, 1.6A/common	0.5A/point, 4A/1A/common
Maximu	m inrush current	0.7A 10ms or less	4A 10ms or less
Leakage	e current at OFF	0.1mA or less	0.1mA or less
		0.1VDC(TYP.)0.1A	0.2VDC(TYP.)0.5A
Maximum	voltage drop at ON	0.2VDC(MAX.)0.1A	0.3VDC(MAX.)0.5A
D	OFF→ON	1ms or less	1ms or less
Response	ON OFF	1ms or less	1ms or less
time	ON→OFF	(rated load, resistance load)	(rated load, resistance load)
Surge	suppressor	Zener diode	Zener diode
		None	6.7A (not replaceable)
Fuse			(fuse breaking capacity: 50A)
Protection function		Yes (overload protection and	Nama
		overheat protection)	None
Internal current consumption		65mA (TYP. All points ON)	80mA (TYP. All points ON)
Wiring method for common		16 points/common	16 points/common

			0: 1
			Signal name
(		TB1	Y00
	1 .	TB2	Open
	$\vdash$	TB3	Y00
Terminal block	5-24VDC	TB4	Open
		TB5	Y01
TB1 TB2 Y00	1 .	TB6	Open
Open TB3 With sink	<u> </u>	TB7	Y01
TB4 Y00 connection	5-24VDC	TB8	Open
Open TB5 TB6 Y01		TB9	Y02
Open TB7		TB10	Open
TB8 Y01	$\vdash$	TB11	Y02
Open TB9 TB10 Y02	5-24VDC	TB12	Open
TB10 Y02 Open TB11		TB13	Y03
TB12 Y02		TB14	Open
Open TB13	Ч	TB15	Y03
TB14 Y03 Open TB15	5-24VDC	TB16	Open
TB16 Y03	`⊢⊢—	TB17	Y04
Open TB17	5-24VDC	TB18	Open
TB18 Y04 Open TB19	L	TB19	Y04
TB20 Y04		TB20	Open
Open TB21	$\vdash$	TB21	Y05
TB22 Y05 Open TB23	5-24VDC	TB22	Open
TB24 Y05 With source	$\Box$	TB23	Y05
Open I B25 connection		TB24	Open
TB26 Y06 Open TB27	-	TB25	Y06
TB28 Y06	5-24VDC	TB26	Open
Open TB29	4	TB27	Y06
TB30 Y07 Open TB31		TB28	Open
TB32 Y07	-	TB29	Y07
Open TB33	5-24VDC	TB30	Open
TB34 Open Open TB35	ЧТ	TB31	Y07
TB36 Open	_	TB32	Open
Open TB37		TB33	Open
TB38 Open	آر	TB34	Open
Open	Short bar	TB35	Open
	SHOIL DAI	TB36	Open
		TB37	Open
		TB38	Open

	Model	QY68A	
Specific	ations	(Sink/Source type)	
No. of	output points	8 points	
Isolatio	on method	Photocoupler isolation	
Rated	load voltage	5-24VDC(+20/-10%)	
Maximu	ım load current	2A/point, 8A/module	
Maximu	m inrush current	8A 10ms or less	
Leakage	current at OFF	0.1mA or less	
Maximum	voltage drop at ON	0.3VDC(MAX.)2A	
Response	OFF→ON	3ms or less	
time	ON→OFF	10ms or less(resistance load)	
Surge	suppressor	Zener diode	
Fuse		None	
Protec	tion function	None	
Internal current consumption		110mA (TYP. All points ON)	
Wiring method for common		All points independent	

QY70 + ERNT-AQTB20

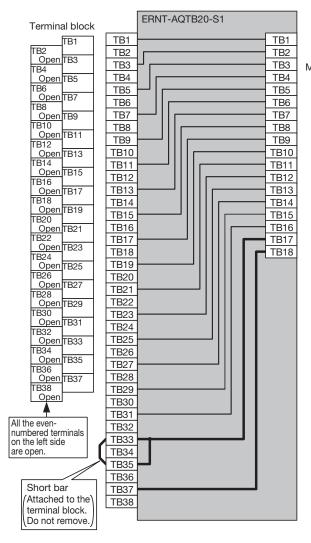
		Terminal number	Signal name
		TB1	Y00
		TB2	Open
	$\vdash$	TB3	Y01
	_	TB4	Open
Terminal block	<b>├</b> ा	TB5	Y02
TB1	_	TB6	Open
TB2 Y00 Open TB3	$+$ $\Box$ $ -$	TB7	Y03
TB4 Y01		TB8	Open
Open TB5	$\vdash$ $\Box$ $\vdash$	TB9	Y04
TB6 Y02 Open TB7	l —	TB10	Open
TB8 Y03	<del>-</del>	TB11	Y05
Open TB9		TB12	Open
TB10 Y04	$\vdash$	TB13	Y06
Open TB11 TB12 Y05	I —	TB14	Open
Open TB13	<del></del>	TB15	Y07
TB14 Y06		TB16	Open
Open TB15 TB16 Y07	<del></del>	TB17	Y08
Open TB17		TB18	Open
TB18 Y08	<u> </u>	TB19	Y09
Open TB19 TB20 Y09	-	TB20	Open
Open TB21	<u> </u>	TB21	YOA
TB22 Y0A		TB22	Open
Open TB23 TB24 Y0B	<u> </u>	TB23	YOB
Open TB25	-	TB24	Open
TB26 Y0C	<u> </u>	TB25	YOC
Open TB27 TB28 Y0D		TB26	Open
OpenTB29	<b>└</b> ──	TB27	YOD
TB30 Y0E		TB28	Open
Open TB31 TB32 Y0F	<b>├</b> ──	TB29	YOF
Open TB33	I —	TB30	Open
TB34 DC	<del></del>	TB31	YOF
Open TB35 TB36 DC		TB32	Open
Open TB37	<u> </u>	TB33	DC
TB38 COM	ار ا	TB34	Open
Open	Short bar	TB35	DC
	Snort par	TB36	Open
	∟,	TB37	COM
	5/12VDC	TB38	Open
			Open

_		
Model		QY70
Specific	ations	(Sink type)
No. of	output points	16 points
Isolatio	n method	Photocoupler isolation
Rated	load voltage	5-12VDC(+25/-10%)
Maximu	ım load current	16mA/point, 256mA/common
Maximu	m inrush current	40mA 10ms or less
Lankana		Voh:3.5VDC
Leakage	current at OFF	(Vcc=5VDC,IoH=0.4mA)
Maximum	voltage drop at ON	Vol:0.3VDC
Response	OFF→ON	0.5ms or less
time	ON→OFF	0.5ms or less(resistance load)
Surge	suppressor	None
F		1.6A (not replaceable)
Fuse		(fuse breaking capacity: 50A)
Protection function		None
Internal current consumption		95mA (MAX. All points ON)
Wiring method for common		16 points/common

#### I/O combined module

MELSEC-Q module to be used	External connection diagram	MELSEC-Q module specifications
QX48Y57 + ERNT-AQTB20	Terminal block   Term	Clinput specifications>   Model   QX48Y57   (positive common)
	Short bar   1835   DC   1836   Open   1837   COM2	Leakage current at OFF 0.1mA or less
		Maximum voltage drop at ON 0.3VDC(MAX.)0.5A
		Response   OFF→ON   1ms or less   time   ON→OFF   1ms or less(rated load, resistance load)
		Surge suppressor Zener diode  4A (not replaceable)
		Fuse (fuse breaking capacity: 50A)  Protection function   None
		Wiring method for common 7 points/common

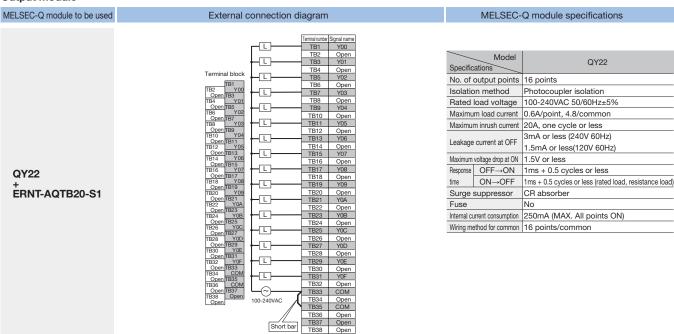
#### **Connection diagram**



MELSEC-Q series module

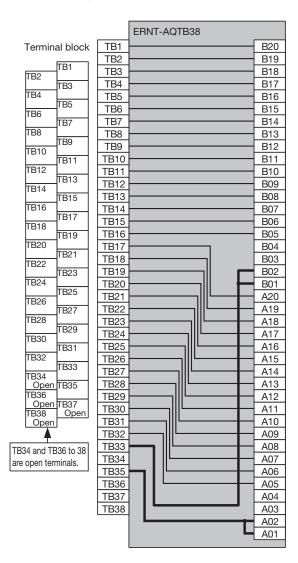
TB2	TB1
	TB3
TB4	TB5
TB6	TB7
TB8	TB9
TB10	TB11
TB12	
TB14	TB13
TB16	TB15
TB18	TB17
1010	

#### **Output module**

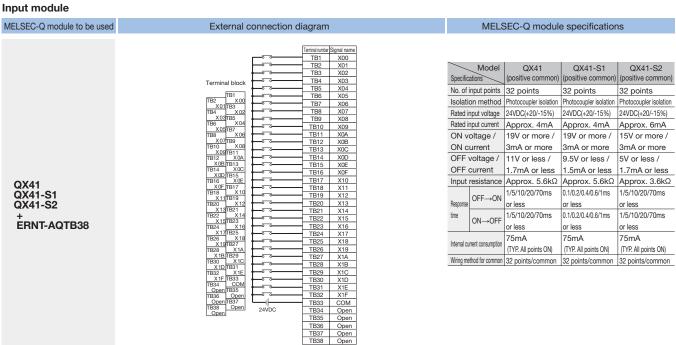


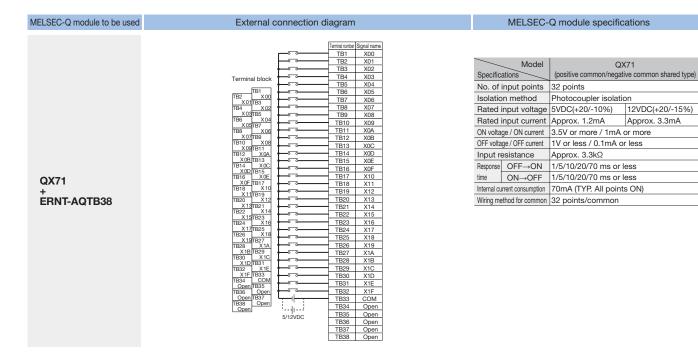
#### (3)ERNT-AQTB38

#### Connection diagram



MELSEC-Q series module 00 B20 A20 B19 A19 00 **B18** A18 00 B17 00 A17 B16 00 A16 A15 B15 00 B14 00 A14 B13 A13 00 A12 B12 00 B11 00 A11 B10 00 A10 **B9** 00 A9 B8 00 A8 B7 A7 00 **B6** 00 l A6 B5 00 A5 B4 00 A4 ВЗ АЗ 00 В2 0 0 A2 0 0 A1





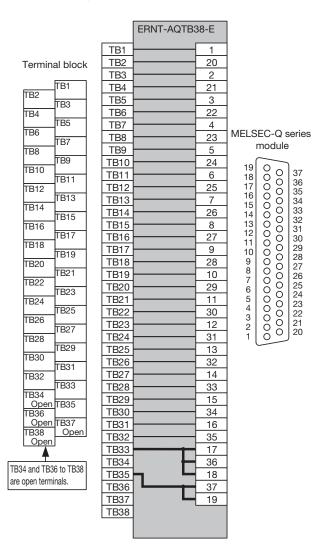
QX71

Approx. 3.3mA

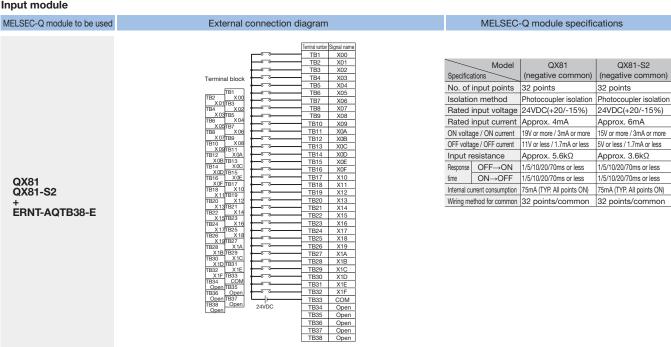
Output module			
MELSEC-Q module to be used	External connection diagram	MELSEC-	Q module specifications
QY41P + ERNT-AQTB38	Terminal block	Isolation method Rated load voltage Maximum load current Maximum involtage current Leakage current at OFF  Maximum voltage drop at 0N  Response OFF→ON time ON→OFF  Surge suppressor Fuse Protection function Internal current consumption	QY41P (Sink type)  32 points  Photocoupler isolation  12-24VDC(+20/-15%) 0.1A/point, 2A/common 0.7A 10ms or less 0.1mA or less 0.1VDC(TYP)0.1A 0.2VDC(MAX.)0.1A  1ms or less (rated load, resistance load) Zener diode None Yes (overload protection and overheat protection) 105mA (MAX. All points ON) 32 points/common

5/12VDC

#### Connection diagram



#### Input module



#### Output module

MELSEC-Q module to be used	External connection diagram	MELSEC-Q module specifications
QY81P + ERNT-AQTB38-E	Terminal block	Specifications   Specifications   Specifications   Source type

# **Conversion Adapter Support Flange (Required)**

#### **Specifications**

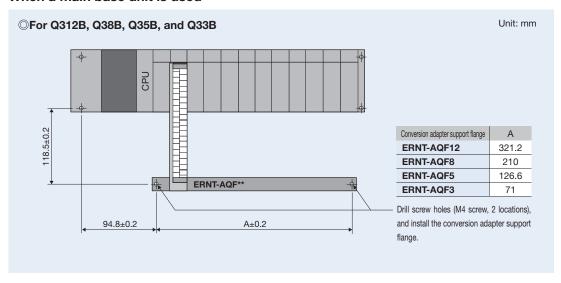
The conversion adapter support flange secures the bottom of the conversion adapter and is thus required during conversion adapter use. One support flange is required per base unit. The product used is the same as the upgrade tool for the MELSEC-A/MELSEC-Q series.

Conversion adapter support flange model	Specifications
ERNT-AQF12	Conversion adapter support flange for 12-slot MELSEC-Q series modules
ERNT-AQF8	Conversion adapter support flange for 8-slot MELSEC-Q series modules
ERNT-AQF5	Conversion adapter support flange for 5-slot MELSEC-Q series modules
ERNT-AQF3	Conversion adapter support flange for 3-slot MELSEC-Q series modules

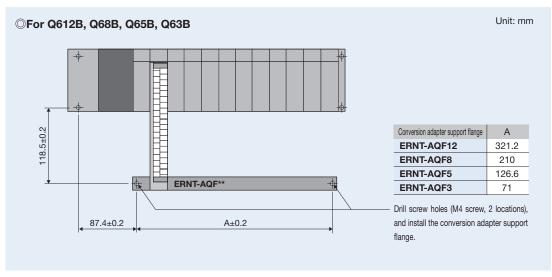
### When the base adapter is not used

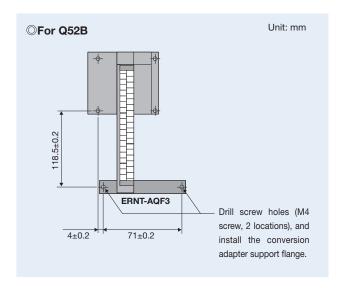
When the base adapter is not used, drilling screw holes (M4 screw, 2 locations) is required for attaching the conversion adapter support flange as shown below. Be sure to always use the conversion adapter support flange.

#### When a main base unit is used



#### When an extension base unit is used



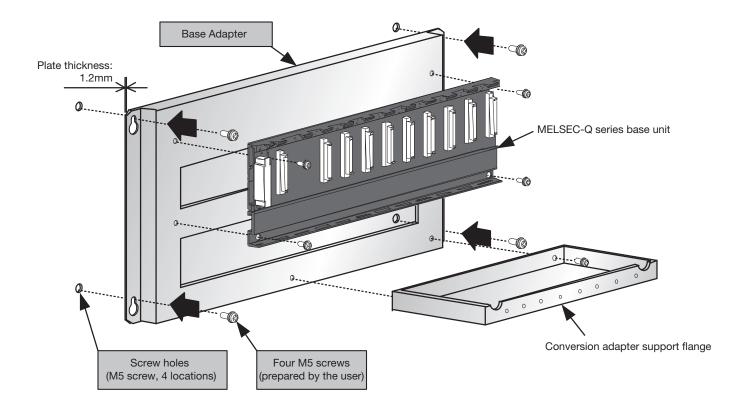


#### **Specifications**

Both the MELSEC-Q series base unit and the conversion adapter support flange can be installed on the base adapter without drilling screw holes. The product used is the same as the upgrade tool for the MELSEC-A/MELSEC-Q series.

#### Note

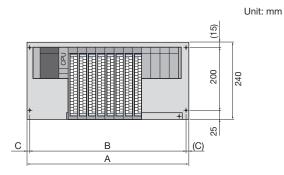
• The user has to drill screw holes (M5 screw, 4 locations) and obtain four M5 screws for panel surface installation.



For the base unit models marked with \*1 to \*5, two or more base adapter models are applicable. Select the most suitable base adapter according to the product dimensions.

	Mountable product					Product dimensions	
Base adapter model	MELSEC-Q series base unit					Conversion adapter support flange	Width x Height
	12 slots	8 slots	5 slots	3 slots	2 slots	- Conversion adapter support hange	mm
ERNT-AQB38	Q312B	i		!	i	ERNT-AQF12,ERNT-AQF8	480×240
ERINI-AQB36		Q38B(*1)		i		ERNT-AQF8	460×240
ERNT-AQB35		Q38B(*1)		!		ERNT-AQF8,ERNT-AQF5	382×240
ENIVI-AQD33			Q35B		1	ERNT-AQF5	302×240
ERNT-AQB32		! !		Q33B		ERNT-AQF3	247×240
ERNT-AQB68	Q612B					ERNT-AQF12,ERNT-AQF8	466×240
ENIVI-AQD00		Q68B(*2)		i	i	ERNT-AQF8	400×240
		Q68B(*2)				ERNT-AQF8,ERNT-AQF5	
ERNT-AQB65		I I	Q65B(*3)		1	ERNT-AQF5	352×240
		! !	Q55B(*4)		!	Ellivi / Gi o	
ERNT-AQB62		 		Q63B	Q52B(*5)	ERNT-AQF3	238×240
ERNT-AQB58	·	Q68B(*2)				ERNT-AQF8	411×240
ERNT-AQB55			Q65B(*3) Q55B(*4)		1	ERNT-AQF5	297×240
ERNT-AQB52		i			Q52B(*5)	ERNT-AQF3	183×240

# **Mounting Dimensions**



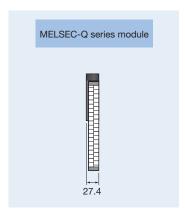
Base adapter model	А	В	С
ERNT-AQB38	480	460	10
ERNT-AQB68	466	446	10
ERNT-AQB58	411	391	10
ERNT-AQB35	382	362	10
ERNT-AQB65	352	332	10
ERNT-AQB55	297	277	10
ERNT-AQB32	247	227	10
ERNT-AQB62	238	218	10
ERNT-AQB52	183	163	10

# **Usage Precautions**

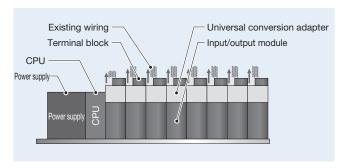
Verify that the MELSEC-Q series module specifications satisfy the specifications of the existing connected devices. Refer to the user's manual of the applicable MELSEC-Q series module.

#### **Module Width**

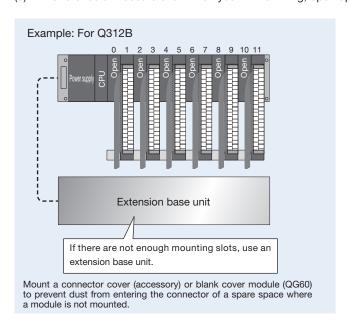
(1) The module width dimension is smaller (27.4 mm) and the wiring area is smaller, requiring verification during mounting.



(2) If the wiring interferes with a mounted module, lift the wiring forward, etc., so that there is no interference.



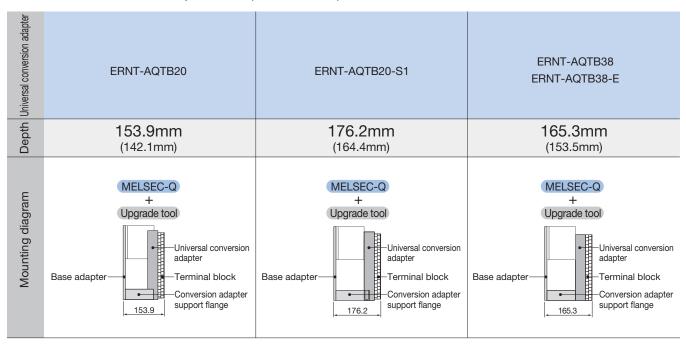
(3) If interference still occurs even when you lift the wiring, open up a slot to secure a space for wiring.



(4) If replacement is not possible based on 2) or 3) on the left, consider using the Mitsubishi Electric Q series large type base unit.



The depth dimension is as shown below. The depth is larger, requiring verification during mounting. If a base adapter is not used, the dimension is the value in parentheses (11.8 mm smaller).



#### **Conversion Adapter Support Flange / Base Adapter**

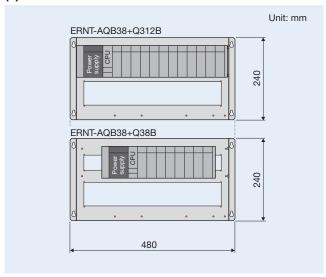
When using the universal conversion adapter, always use a conversion adapter support flange.

Also, it is recommended to use a base adopter, which enables installation of both the MELSEC-Q series base unit and the conversion adapter support flange without drilling screw holes.

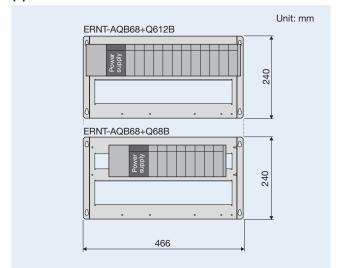
#### **Slot Positions**

When you use the MELSEC-Q series for replacement, the slot positions are as shown below. Change the slot positions where modules are mounted and adjust the wiring lengths prior to use.

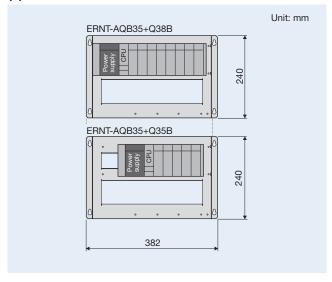
#### (1)ERNT-AQB38



#### (4)ERNT-AQB68



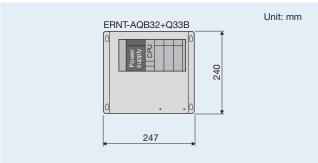
#### (2)ERNT-AQB35



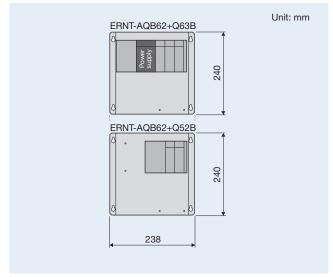
#### (5)ERNT-AQB65



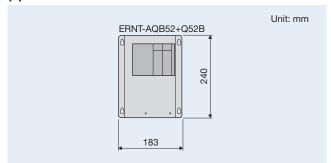
### (3)ERNT-AQB32



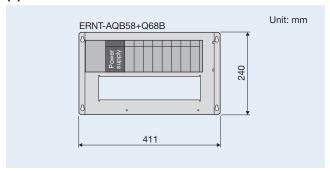
# (6)ERNT-AQB62



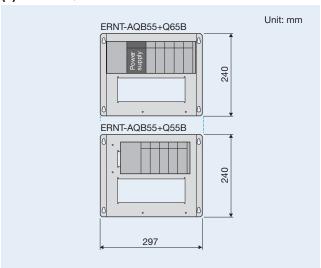
### (9)ERNT-AQB52



# (7)ERNT-AQB58



#### (8)ERNT-AQB55



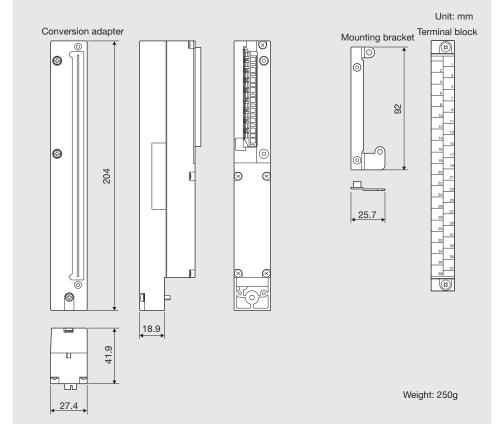


# **External Dimensions**

### **Universal Conversion Adapter**

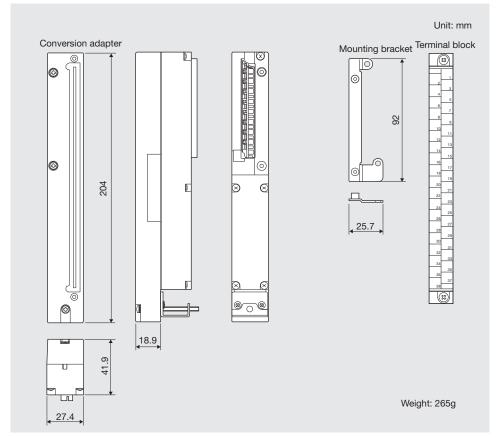


Model: ERNT-AQTB20



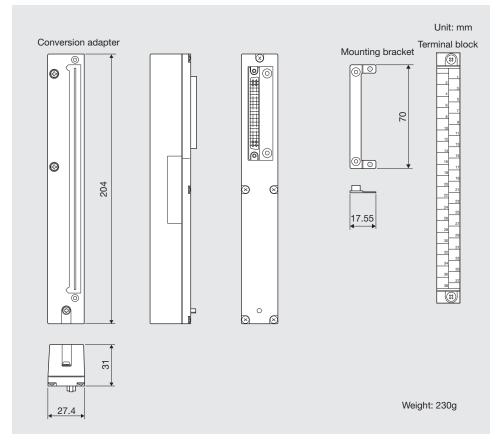


Model: ERNT-AQTB20-S1



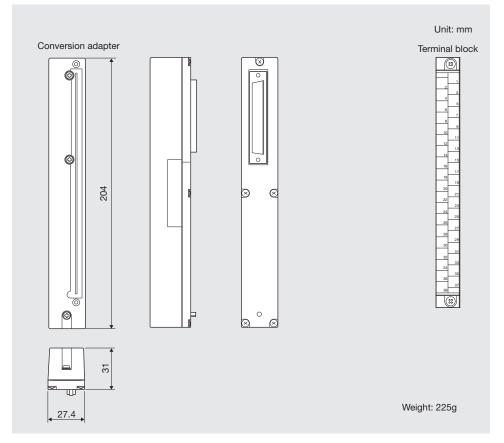


Model: **ERNT-AQTB38** 





Model: **ERNT-AQTB38-E** 



# **Base Adapter**

The product used is the same as the upgrade tool for the MELSEC-A/MELSEC-Q series. See 1-37.

# **Conversion Adapter Support Flange**

The product used is the same as the upgrade tool for the MELSEC-A/MELSEC-Q series. See 1-37.

# Replacing a Non-Mitsubishi Programmable Controller (Small Type) with the MELSEC-Q Series Model List

## 1 Universal Conversion Adapter (Small Type)

Verify that the MELSEC-Q series module electrical specifications satisfy the specifications of existing connected devices.

For input/output module

<1-slot type> (Attachable to the Mitsubishi Electric AnS-size Q series large type base units (Q□□BLS, Q□□BLS-D) as well.)

	MELSEC-Q series		Conversion adapter	· ·	
Input/Output	module model	Model	Sha	Page	
	before replacement	Model	Terminal block (accessory)	MELSEC-Q series	
	QX10				
	QX28				
	QX40				
	QX40-S1				7-41 to 7-47
	QX40H				
Input	QX50			Terminal block (18 points)	
	QX70	ERNT-ASQTB20	Terminal block (20 points)		
	QX70H				
	QX80				
	QX80H				
	QX90H				
	QY10				
	QY18A				
	QY22				
Output module	QY40P				
	QY50				
	QY68A				
	QY70				
	QY80				
Input/Output combination	QX48Y57				

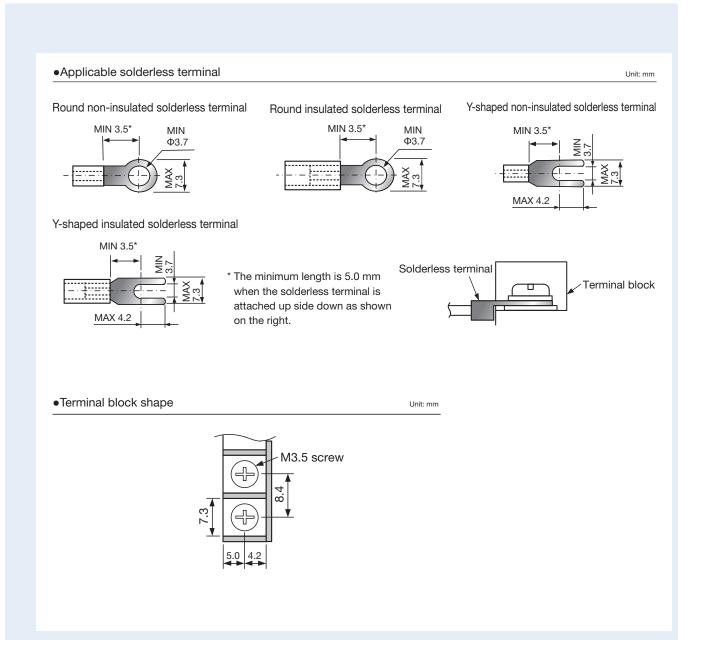
Point

The universal conversion adapter (small type) can be used in the system after replacing the MELSEC-AnS series with the MELSEC-Q series using the upgrade tool.

# **Universal Conversion Adapter**

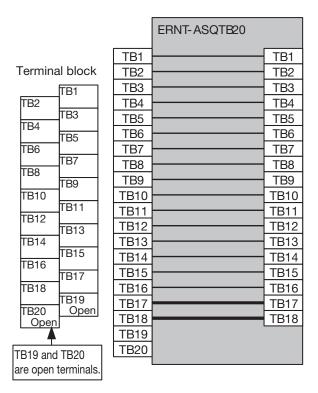
## **Specifications**

# 20-point terminal block specifications



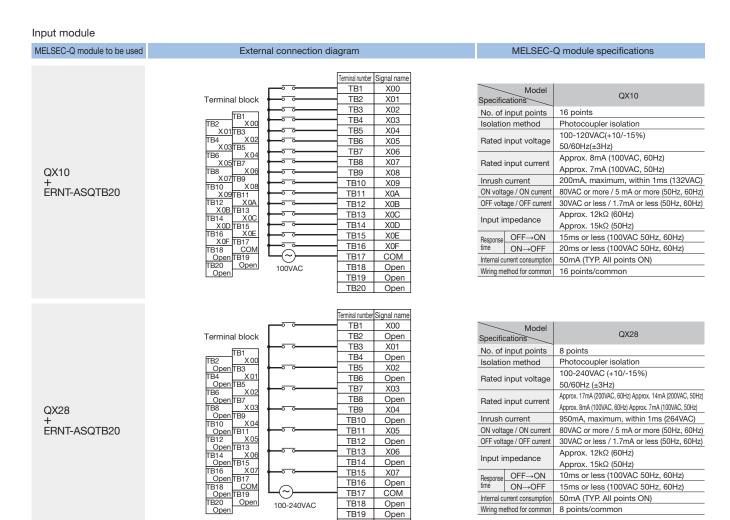
#### (1)ERNT-ASQTB20

Connection diagram



MELSEC-Q series module

TB2	TB1
TB4	TB3
TB6	TB5
TB8	TB7
TB10	TB9
TB12	TB11
TB14	TB13
TB16	TB15
TB18	TB17
11010	



TB20

		Taminal number	0:
			Signal name
	<del></del>	TB1	X00
Terminal block	<del></del>	TB2	X01
	<del></del>	TB3	X02
TB1 X00	<del></del>	TB4	X03
X 01 TB3	<del></del>	TB5	X04
TB4 X 02	<del></del>	TB6	X05
X 03 TB5 TB6 X 04	<del></del>	TB7	X06
X 05 TB7	<del></del>	TB8	X07
TB8 X 06	<del></del>	TB9	X08
X07TB9 TB10 X08	<del></del>	TB10	X09
X 09TB11	<del></del>	TB11	X0A
TB12 X0A	<del></del>	TB12	X0B
X0B TB13 TB14 X0C	<del></del>	TB13	X0C
X0D TB15	<del></del>	TB14	X0D
TB16 X0E	<del></del>	TB15	X0E
X0F TB17 TB18 COM	<del></del>	TB16	X0F
Open TB19	<b>└</b> ┤├──	TB17	COM
TB20 Open	24VDC	TB18	Open
Open		TB19	Open
		TB20	Open

External connection diagram

	Model	QX40	QX40-S1
Specifica	tions	(positive common)	(positive common)
No. of	input points	16 points	16 points
Isolatio	n method	Photocoupler isolation	Photocoupler isolation
Rated	input voltage	24VDC(+20/-15%)	24VDC(+20/-15%)
Rated	input current	Approx. 4mA	Approx. 6mA
ON volta	ge / ON current	19V or more / 3mA or more	19V or more / 4.0mA or more
OFF volta	ige / OFF current	11V or less / 1.7mA or less	11V or less / 1.7mA or less
Input r	esistance	Approx. 5.6kΩ	Approx. 3.9kΩ
Response	OFF→ON	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less
time	ON→OFF	1/5/10/20/70ms or less	0.1/0.2/0.4/0.6/1ms or less
Internal cu	irrent consumption	50mA (TYP. All points ON)	60mA (TYP. All points ON)
Wiring method for common		16 points/common	16 points/common

MELSEC-Q module specifications

QX40H
+
<b>ERNT-ASQTB20</b>

	Terminal number	Signal name
<u> </u>	TB1	X00
Terminal block	TB2	X01
	TB3	X02
TB1 X 00	TB4	X03
X 01 TB3	TB5	X04
TB4 X 02	TB6	X05
X03TB5 TB6 X04	TB7	X06
X 05 TB7	TB8	X07
TB8 X06 24VDC	TB9	COM1
TB10 COM1	TB10	X08
X08TB11	TB11	X09
TB12 X09	TB12	X0A
X0A TB13 TB14 X0B	TB13	X0B
X0C TB15	TB14	X0C
TB16 X0D	TB15	X0D
X0E TB17 TB18 X0F	TB16	X0E
COM2 TB19	TB17	X0F
TB20 Open —	TB18	COM2
Open 24VDC	TB19	Open
	TB20	Open

Specificat	Model	QX40H (positive common)	
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	
Rated	input voltage	24VDC(+20/-15%)	
Rated	input current	Approx. 6mA	
ON volta	ge / ON current	13V or more / 3mA or more	
OFF volta	ige / OFF current	8V or less / 1.6mA or less	
Input r	esistance	Approx. 3.9kΩ	
Response	OFF→ON	0.1/0.2/0.4/0.6/1ms or less	
time	ON→OFF	0.1/0.2/0.4/0.6/1ms or less	
Internal current consumption		80mA (TYP. All points ON)	
Wiring method for common		8 points/common	

QX50	
+	
ERNT-	ASQTB20

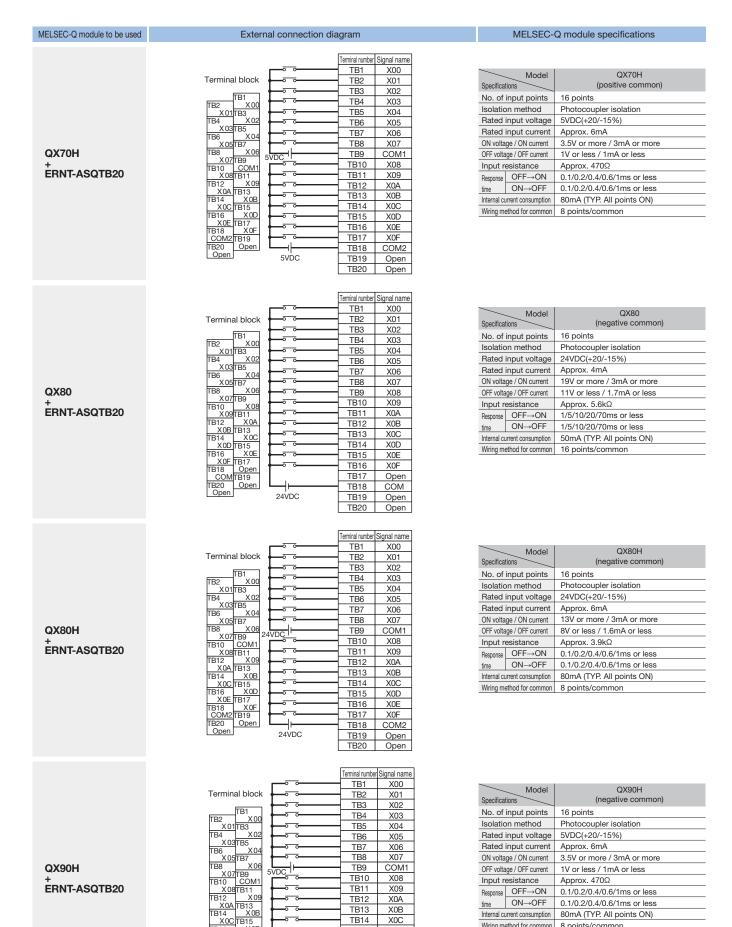
		Terminal number	Signal name
		TB1	X00
Terminal block	<del></del>	TB2	X01
F-0.	<del></del>	TB3	X02
TB1 X 00		TB4	X03
X 01 TB3	<del></del>	TB5	X04
TB4 X 02		TB6	X05
X 03 TB5 TB6 X 04	<b>├</b>	TB7	X06
X 05 TB7		TB8	X07
TB8 X 06		TB9	X08
X07TB9 TB10 X08		TB10	X09
X 09 TB11		TB11	X0A
TB12 X0A	<del></del>	TB12	X0B
X0B TB13 TB14 X0C	<del></del>	TB13	X0C
X0D TB15	<del></del>	TB14	X0D
TB16 X0E	<del></del>	TB15	X0E
X0F TB17 TB18 COM		TB16	X0F
Open TB19	<del></del>	TB17	COM
TB20 Open		TB18	Open
Open	and an	TB19	Open
	· · · ·     · · · · · ·	TB20	Open
	48VAC/VDC		

	Model	QX	50
Specificat	tions	(Positive common / Nega	tive common shared, AC)
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	on
Datad		40\/DC/+00/ 150/\	48VAC(+10/-15%)
Rated	input voltage	48VDC(+20/-15%)	50/60Hz(±3Hz)
Rated	input current	Approx. 4mA	
ON volta	ge / ON current	28V or more / 2.5mA or more	
OFF volta	ige / OFF current	10V or less / 1.0mA	or less
Input r	esistance	Approx. 11.2kΩ	
Response	OFF→ON	5ms or less	15ms or less
time	ON→OFF	20ms or less	20ms or less
Internal cu	rrent consumption	n 50mA (TYP. All points ON)	
Wiring me	ethod for common	n 16 points/common	

QX70			
+			
ERNT-	ASC	<b>TB</b>	20

		Terminal number	Signal name
	_ <del>-</del>	TB1	X00
Terminal block	<del></del>	TB2	X01
Fra.	<del></del>	TB3	X02
TB1 X00	<del></del>	TB4	X03
X 01 TB3	<del></del>	TB5	X04
TB4 X 02	<del></del>	TB6	X05
X 03 TB5 TB6 X 04	<del></del>	TB7	X06
X 05 TB7	<del></del>	TB8	X07
TB8 X 06	<del></del>	TB9	X08
X07TB9 TB10 X08	<del></del>	TB10	X09
X 09 TB11	<del></del>	TB11	X0A
TB12 X0A	<del></del>	TB12	X0B
X0B TB13 TB14 X0C	<del></del>	TB13	X0C
X0D TB15	<del></del>	TB14	X0D
TB16 X0E	<del></del>	TB15	X0E
X0F TB17 TB18 COM	<del></del>	TB16	X0F
Open TB19	<del></del>	TB17	COM
TB20 Open		TB18	Open
Open	5/12VDC	TB19	Open
	3/ 12 100	TB20	Open

Specifical	Model	QX70 (Positive common / Negative common shared)	
No. of	input points	16 points	
Isolatio	n method	Photocoupler isolation	on
Rated	input voltage	5VDC(+20/-10%)	12VDC(+20/-15%)
Rated	input current	Approx. 1.2mA	Approx. 3.3mA
ON volta	ge / ON current	3.5V or more / 1mA or more	
OFF volta	ige / OFF current	1V or less / 0.1mA or less	
Input r	esistance	Approx. 3.3kΩ	
Response	OFF→ON	1/5/10/20/70ms or le	ess
time	ON→OFF	1/5/10/20/70ms or less	
Internal cu	rrent consumption	tion 55mA (TYP. All points ON)	
Wiring me	ethod for common	16 points/common	



TB10

TB11

TB12

**TB13** 

TB14

TB15

TB16

TB17

TB18

TB19

TB20

X0C TB15

1816 X0D X0E TB17 TB18 X0F COM2 TB19 TB20 Open Open

5VDC

X09

X0A

X0B

X<sub>0</sub>C

X0D

X0E

XOF

COM2

Open

**ERNT-ASQTB20** 

Input resistance

Response OFF→ON

Internal current consumption

ON→OFF

Wiring method for common 8 points/common

Approx.  $470\Omega$ 

0.1/0.2/0.4/0.6/1ms or less

0.1/0.2/0.4/0.6/1ms or less

80mA (TYP. All points ON)

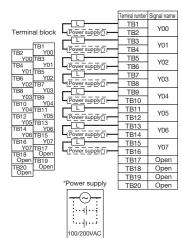
#### **Output module**

MELSEC-Q module to be used External connection diagram MELSEC-Q module specifications

QY10 + ERNT-ASQTB20

Specifica	Model	QY10	
No. of o	output points	16 points	
Isolatio	n method	Relay isolation	
	Rated switching 24VDC/2A (resistance load) / poi 240VAC/2A (cosΦ =1) / point 8A/common		
Minimum switching load		5VDC 1mA	
Maximum	switching voltage	264VAC 125VDC	
Response	OFF→ON	10ms or less	
time	ON→OFF	12ms or less	
Surge suppressor		No	
Fuse		No	
Internal cu	rrent consumption	430mA (TYP. All points ON)	
Wiring method for common		16 points/common	

QY18A + ERNT-ASQTB20



or 24VDC

Model Specifications		QY18A
No. of	output points	8 points
Isolatio	n method	Relay isolation
	Rated switching voltage/current 24VDC/2A (resistance load) / poir 240VAC/2A (cosΦ =1) / point 8A/module	
Minimum switching load		5VDC 1mA
Maximum	switching voltage	264VAC 125VDC
Response	OFF→ON	10ms or less
time ON→OFF		12ms or less
Surge suppressor		No
Fuse		No
Internal current consumption		240mA (TYP. All points ON)
Wiring method for common		All points independent

QY22 + ERNT-ASQTB20

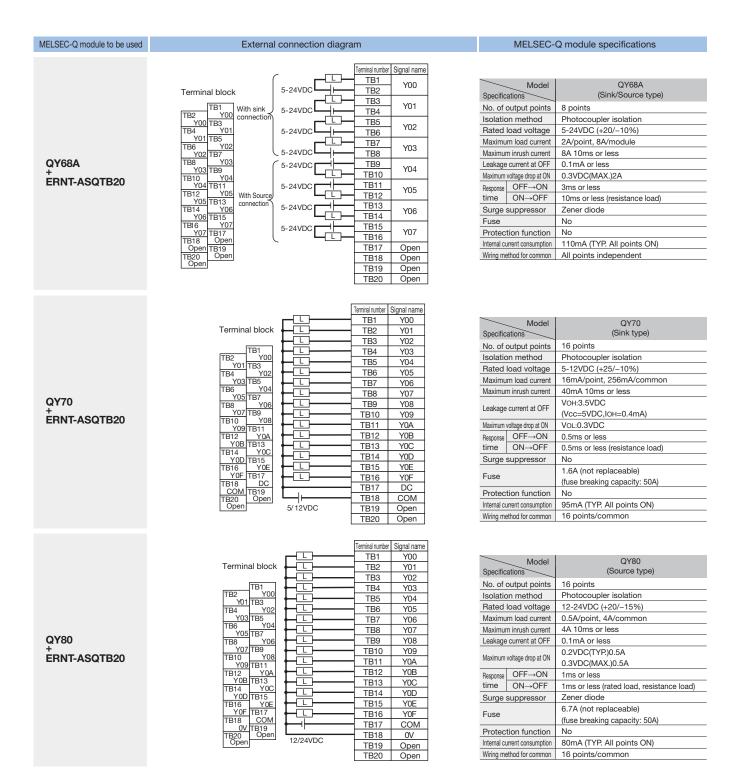
	Terminal number	Signal name
	TB1	Y00
Terminal block	TB2	Y01
+	TB3	Y02
TB1 Y00	TB4	Y03
Y01 TB3	TB5	Y04
TB4 Y02 L	TB6	Y05
Y03 TB5 TB6 Y04	TB7	Y06
Y05 TB7	TB8	Y07
TB8 Y06 L	TB9	Y08
Y07 TB9 TB10 Y08	TB10	Y09
Y09 TB11	TB11	Y0A
TB12 Y0A L	TB12	Y0B
Y0B TB13 TB14 Y0C	TB13	Y0C
YOD TB15	TB14	Y0D
TB16 Y0E	TB15	Y0E
Y0F TB17 TB18 COM	TB16	Y0F
Open TB19	TB17	COM
TB20 Open 100-240VAC	TB18	Open
Open 100-240VAC	TB19	Open
	TB20	Open

Model		QY22	
No. of	output points	16 points	
Isolatio	on method	Photocoupler isolation	
Rated	load voltage	100-240VAC 50/60Hz±5%	
Maximu	m load current	0.6A/point, 4.8/common	
Maximu	m inrush current	20A, one cycle or less	
Lankana		3mA or less(240V 60Hz)	
Leakage	current at OFF	1.5mA or less(120V 60Hz)	
Maximum	voltage drop at ON	1.5V or less	
Response	OFF→ON	1ms + 0.5 cycles or less	
time	ON→OFF	1ms + 0.5 cycles or less (rated load, resistance load)	
Surge	Surge suppressor CR absorber		
Fuse		No	
Internal current consumption 250mA (MAX.All point		250mA (MAX.All points ON)	
Wiring me	ethod for common	16 points/common	

QY40P QY50 + ERNT-ASQTB20

			•
		Terminal number	Signal name
		TB1	Y00
Terminal block		TB2	Y01
		TB3	Y02
TB1		TB4	Y03
TB2 Y00 Y01 TB3		TB5	Y04
TB4 Y02		TB6	Y05
Y03 TB5		TB7	Y06
TB6 Y04 Y05 TB7		TB8	Y07
TB8 Y06		TB9	Y08
Y07 TB9		TB10	Y09
TB10 Y08 Y09 TB11		TB11	Y0A
TB12 Y0A		TB12	Y0B
Y0B TB13		TB13	Y0C
TB14 Y0C Y0D TB15		TB14	Y0D
TB16 Y0E		TB15	Y0E
Y0F TB17		TB16	Y0F
TB18 DC COM TB19	<del> </del>	TB17	DC
TB20 Open	<b>└</b>	TB18	COM
Open	12/24VDC	TB19	Open
		TB20	Open

	Model	QY40P	QY50
Specific	ations	(Sink type)	(Sink type)
No. of	output points	16 point	16 point
Isolatio	n method	Photocoupler isolation	Photocoupler isolation
Rated	load voltage	12-24VDC(+20/-15%)	12-24VDC(+20/-15%)
Maximu	m load current	0.1A/point,1.6/common	0.5A/point,4/common
Maximur	m inrush current	0.7A 10ms or less	4A 10ms or less
Leakage	current at OFF	0.1mA or less	0.1mA or less
Maximum	voltage drop at ON	0.1VDC(TYP.)0.1A 0.2VDC(MAX.)0.1A	0.2VDC(TYP.)0.5A 0.3VDC(MAX.)0.5A
	OFF→ON	1ms or less	1ms or less
Response time	ON→OFF	1ms or less (rated load, resistance load)	1ms or less (rated load, resistance load)
Surge	suppressor	Zener diode	Zener diode
Fuse		No	6.7A (not replaceable) (fuse breaking capacity: 50A)
Protec	tion function	Yes (overload protection and overheat protection)	No
Internal cu	urrent consumption	65mA (TYP. All points ON)	80mA (TYP. All points ON)
Wiring me	ethod for common	16 points/common	16 points/common



#### I/O combined module

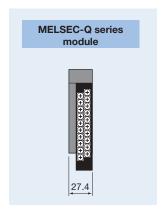
I/O combined module						
MELSEC-Q module to be used	External connection diagram			MELSEC-	MELSEC-Q module specifications	
				<input specificati<="" th=""/> <th colspan="2"><input specifications=""/></th>	<input specifications=""/>	
				Model Specifications —	QX48Y57 (positive common)	
QX48Y57 + ERNT-ASQTB20				No. of input points	8 points	
		Terminal number	Signal name	Isolation method	Photocoupler isolation	
		TB1	X00	Rated input voltage	24VDC(+20/-15%)	
		TB2	X01	Rated input current	Approx. 4mA	
	Terminal block	- TB3	X02	ON voltage / ON current	19V or more / 3mA or more	
	TB1			OFF voltage / OFF current	11V or less / 1.7mA or less	
	TB2 X00	TB4	X03	Input resistance	Approx. 5.6kΩ	
	X01 TB3	TB5	X04	Response OFF→ON	1/5/10/20/70ms or less	
	TB4 X 02	TB6	X05	time ON→OFF	1/5/10/20/70ms or less	
	X 03 TB5	TB7	X06	Internal current consumption	80mA (TYP. All points ON)	
	TB6 X 04 X 05 TB7	TB8	X07	Wiring method for common	8 points/common	
	TB8 X06 24VDC	TB9	COM1	<output specifications=""></output>		
	X 07 TB9	TB10	Y08			
	TB10 COM1 Y08 TB11	TB11	Y09	Model	QX48Y57 (Sink type)	
	TB12 Y09	TB12	Y0A	No. of output points	7 points	
	Y 0A TB13	TB13	Y0B	Isolation method	Photocoupler isolation	
	TB14 Y0B	TB14	YOC	Rated load voltage	12-24VDC (+20/-15%)	
	YOC TB15			Maximum load current	0.5A/point, 2A/common	
	TB16 Y0D L	TB15	Y0D	Maximum inrush current	4A 10ms or less	
	TB18 DC	TB16	Y0E	Leakage current at OFF	0.1mA or less	
	COM2TB19	TB17	DC	Maximum voltage	0.2VDC(TYP.)0.5A	
	TB20 Open	TB18	COM2	drop at ON	0.3VDC(MAX.)0.5A	
	Open 12/24VDC	TB19	Open	Response OFF→ON	1ms or less	
		TB20	Open	time ON→OFF	1ms or less (rated load, resistance load)  Zener diode	
		1020	Opon	Surge suppressor	4A (not replaceable	
				Fuse	(fuse breaking capacity: 50A)	
				Protection function	No	
				Wiring method for common	7 points/common	
				THINING INCLINE OF COMMINE	/ points/common	

# **Usage Precautions**

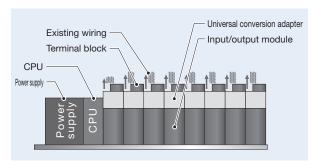
Verify that the MELSEC-Q series module specifications satisfy the specifications of the existing connected devices. Refer to the user's manual of the applicable MELSEC-Q series module.

#### **Module Width**

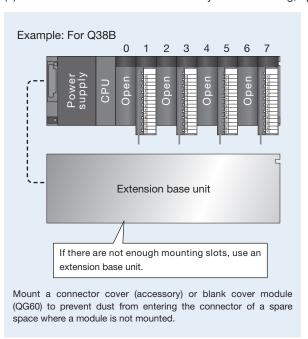
(1) The module width is 27.4mm. Check the conditions for securing an enough wiring space for installation.



(2) If the wiring interferes with a mounted module, lift the wiring forward, etc., so that there is no interference.



(3) If interference still occurs even when you lift the wiring, open up a slot to secure a space for wiring.



(4) If replacement is not possible based on 2) or 3) on the left, consider using the Mitsubishi Electric AnS-size Q series large type base unit. ▶ 7-7

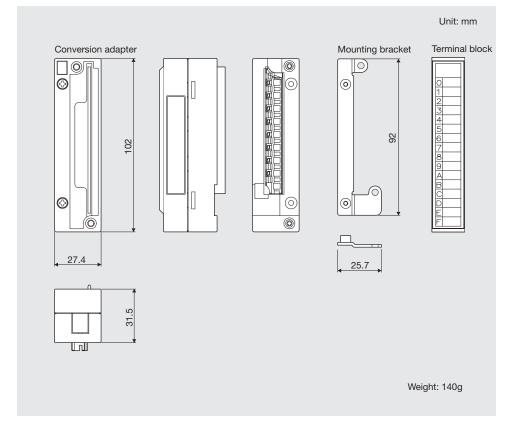


# **External Dimensions**

# **Universal Conversion Adapter**



Model: ERNT-ASQTB20



# **-** List of Applicable Standards

	: Compliant	x : Not compliant	- : Out of scope
١	/ . Oomphant	A . NOT COMPITAIN	Out of scope

Product name		M- d-I	Standard		
Troduct	Tiatile	Model	UL	cUL	CE(LVD)
		ERNT-AQTX10	√	J	√
		ERNT-AQTX40	J	J	√
		ERNT-AQTX80	√	J	√
		ERNT-AQTX41	√	J	√
		ERNT-AQTX81	√	J	√ .
	4	ERNT-AQTY10	√ .	J	√ .
	1-slot type	ERNT-AQTY22	√	√	V
		ERNT-AQTY40	√	√	√
Input/Output module		ERNT-AQTY50	√	√	V
conversion adapter		ERNT-AQTY80	√	√	√
		ERNT-AQTY41	√	√	√
		ERNT-AQTY81	√	√	√
		ERNT-AQTX11	√	J	√
	2-slot type	ERNT-AQTY10A	√	√	V
		ERNT-AQTY13	√	√	√
		ERNT-AQTY23	√	√	√
		ERNT-AQTY51	√	√	√
	1-slot type	ERNT-AQT68AD	√	√	√
		ERNT-AQT68ADN	√	√	√
		ERNT-AQT62DA	√	√	√
Analog/High-speed counter module		ERNT-AQT68DA	√	√	√
conversion adapter		ERNT-AQTD61	√	√	√
	2-slot type	ERNT-AQT68AD-GH	√	J	√
		ERNT-AQT616AD	√	√	√
		ERNT-AQT616DA	√	√	<b>√</b>
		ERNT-AQF12	_	_	_
Conversion adoptor aumort flore		ERNT-AQF8	_	_	_
Conversion adapter support flang	je	ERNT-AQF5	-	_	_
		ERNT-AQF3	_	_	_
		ERNT-AQB38	-	_	_
		ERNT-AQB68	-	_	_
		ERNT-AQB58	-	_	_
		ERNT-AQB35	-	-	_
Base adapter		ERNT-AQB65	_	_	_
		ERNT-AQB55	-	_	_
		ERNT-AQB32	-	_	_
		ERNT-AQB62	-	_	_
		ERNT-AQB52	-	_	_

# 

√: Compliant ×: Not compliant -: Out of scope

Product name				Standard		
		Model	UL	cUL	CE(LVD)	
		ERNT-ASLTXY10	<b>√</b>	√	J	
Input/Output module		ERNT-ASLTX40	√	√	√	
		ERNT-ASLTX80	1	√	√	
		ERNT-ASLTY22	√	J	J	
conversion adapter	1-module type	ERNT-ASLTY40	√	J	J	
·		ERNT-ASLTY50	√	√	J	
		ERNT-ASLTY80	√	J	J	
		ERNT-ASLCXY81	√	√	J	
Analog module	1-module type	ERNT-ASLT64AD	√	J	J	
conversion adapter	1-module type	ERNT-ASLT62DA	√	√	J	
High-speed counter module	1-module type	ERNT-ASLTD61	√	J	J	
conversion adapter		ERNT-ASLTD62	√	√	J	
		ERNT-ASLB38	_	_		
		ERNT-ASLB35	_	_		
		ERNT-ASLB33	_	-		
		ERNT-ASLB32	_	_		
Base adapter		ERNT-ASLBJ	_	_		
		ERNT-ASLB68	_	-		
		ERNT-ASLB65	_	_		
		ERNT-ASLB58	_	_		
			_	_	_	
		ERNT-ASLB52	_	_	_	

√: Compliant ×: Not compliant -: Out of scope

			y . compliant	2. Not compliant	. out of coop
Product name		Model		Standard	OF(IVID)
			UL ,	cUL √	CE(LVD)
		ERNT-ASQTXY10 ERNT-ASQTX40	√		√
		ERNT-ASQTX80	√ 	√ ,	<u>√</u>
	1 alat tura	ERNT-ASQTY22		J	√
Input/Output module	1-slot type	ERNT-ASQTY40		J J	<u>√</u>
conversion adapter		ERNT-ASQTY50		√ √	<u>√</u>
		ERNT-ASQTY80	J	√ √	<u>√</u>
		ERNT-ASQTX20	√ √	√ √	√
	2-slot type	ERNT-ASQTY60	1	√ √	√
	2 slot type	ERNT-ASQTY60E	1	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	√
		ERNT-ASQT64AD	J	√ √	√
		ERNT-ASQT68AD	√ √	1	√
		ERNT-ASQT62DA	J	1	√
		ERNT-ASQT68DA	J	1	√
		ERNT-ASQT68AD-G	J	1	√
		ERNT-ASQT63ADA	1	\ \J	√
		ERNT-ASQTD61	1	1	√
	1-slot type	ERNT-ASQTD62	√ √	\ \J	√
		ERNT-ASQTD62D	J	1	√
A   /        -		ERNT-ASQT68TD-H01	J	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	√
Analog/High-speed counter/ Temperature input module		ERNT-ASQT68TD-H02	J	1 1	√
conversion adapter		ERNT-ASQT62RD	7	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	√
·		ERNT-ASQT64TCTT	./	1	√
		ERNT-ASQT64TCRT	√ √	1	√
		ERNT-ASQT62TCTT		J	√
		ERNT-ASQT62TCRT	1	1	√
	1-slot type + Conversion cable	ERNT-ASQT64TCTTBW	1	1	
		ERNT-ASQT64TCRTBW	√ √	1	√ (*)
		ERNT-ASQT62TCTTBW	1	1	√ (*)
		ERNT-ASQT62TCRTBW	J	1 1	√ (*)
	1	ERNT-ASQB38N	_	_	_
		ERNT-ASQB35N	_	_	_
		ERNT-ASQB33N	_	_	_
		ERNT-ASQB32N	_	_	_
		ERNT-ASQB68N	_	_	_
		ERNT-ASQB65N	_	_	_
Base adapter		ERNT-ASQB58N	_	_	_
> adapto.		ERNT-ASQB55N	_	_	_
		ERNT-ASQB52N	_	_	_
		ERNT-ASQB00JN	_	_	_
		ERNT-ASQB38N-S1	_	_	_
		ERNT-ASQB35N-S1	_	_	_
		ERNT-ASQB33N-S1	_	_	_
		ERNT-ASQDIN3868	_	_	_
		ERNT-ASQDIN356500J	_	_	_
Conversion adapter DIN rail mod	unting bracket	ERNT-ASQDIN3355	_	_	_
			_	_	_
		ERNT-ASQDIN52	_		

<sup>\*</sup> Only the conversion adapter is CE (LVD) compatible. The disconnection detection connector conversion cable is not related to CE (LVD).

#### 

 $\sqrt{\ }$ : Compliant  $\times$ : Not compliant -: Out of scope

Product name		Model	Standard		
			UL	cUL	CE(LVD)
		ERNT-CQTX121	1	√	<b>√</b>
		ERNT-CQTX112213	V	√	√
		ERNT-CQTX215218	√	√	J
		ERNT-CQCX218501	√	J	√
		ERNT-CQCX114219	√	√	J
		ERNT-CQTY221	√	J	√
	1-slot type	ERNT-CQTY226	√	J	√
	1-Slot type	ERNT-CQTY219217	√	J	√ .
Input/Output module		ERNT-CQTY411	J	√	<b>√</b>
conversion adapter		ERNT-CQTY412	√	J	J
		ERNT-CQTY414218	√	J	√
		ERNT-CQCY415	√	√	J
		ERNT-CQCY501	J	√	√
		ERNT-CQCY213	J	J	√
	2-slot type	ERNT-CQTX122	J	J	√
		ERNT-CQTY224	√	√	√
		ERNT-CQTY225	J	J	√
		ERNT-CQTY218	J	√	<b>√</b>
		ERNT-QF12	_	_	-
Conversion adapter support flan-	ge	ERNT-QF8	_	_	_
		ERNT-QF5	_	_	_
		ERNT-CQB081	_	_	_
Base adapter		ERNT-CQB051	_	_	_
		ERNT-CQB031	_	_	_

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 $\sqrt{:}$  Compliant  $\times:$  Not compliant -: Out of scope

			Standard		
Product name		Model	UL	cUL	CE(LVD)
		ERNT-1JQ11N12N	×	×	<b>√</b>
Input/Output module conversion adapter		ERNT-1JQ32N34N	×	×	√
	1-slot type	ERNT-1JQ64NC	×	×	√
		ERNT-1JQ13S	×	×	√
		ERNT-1JQ12S	×	×	√
		ERNT-1JQ32S	×	×	$\checkmark$
		ERNT-1JQ32SC62SC	×	×	$\checkmark$
		ERNT-2JQ210NS	×	×	√
		ERNT-2JQ212S	×	×	√
		ERNT-2JQ234N264N	×	×	√
		ERNT-2JQ232S262S	×	×	$\sqrt{}$
	2-slot type	ERNT-1JQ31N34S	×	×	√
	2-slot type ERNT-1JQ33S	ERNT-1JQ33S	×	×	√

Product name		NA- dal		Standard	
		Model	UL	cUL	CE(LVD)
Input/Output module conversion adapter		ERNT-1Y2Q501	×	×	J
	1-slot type	ERNT-1Y2Q601611	×	×	J
		ERNT-1JQ32N34N	×	×	J
		ERNT-1Y2Q615625	×	×	√ .
		ERNT-1Y2Q500	×	×	√
		ERNT-1Y2Q600	×	×	√
		ERNT-1Y2Q602606	×	×	√
		ERNT-CQCY213	√	J	J
	2-slot type	ERNT-1Y2Q505	×	×	√
	2 slot type	ERNT-1JQ33S	×	×	√

Non-Mitsubishi Programmable Controller <b>♦ MELSEC-Q</b> Series Upgrade Tool
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Non-Mitsubishi Programi	nable Controller 5/10	√ : Compliant	x : Not compliant	- : Out of scope		
Product name			Standard			
		Model	UL	cUL	CE(LVD)	
Input/Output module universal conversion adapter		ERNT-AQTB20	×	×	√	
		ERNT-AQTB20-S1	×	×	√	
		ERNT-AQTB38	×	×	√	
		ERNT-AQTB38-E	×	×	√	
		ERNT-ASQTB20	×	×	√	

# Product Configuration

## 

Product na		Model	Product configuration
- Todaot Hai		ERNT-AQTX10	- Todas comgalation
		ERNT-AQTX40	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
		ERNT-AQTX80	user's manual
		ERNT-AQTX41	
		ERNT-AQTX81	Conversion adapter (main body), user's manual
		ERNT-AQTY10	
	1-slot type	ERNT-AQTY22	
		ERNT-AQTY40	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
Input/Output module		ERNT-AQTY50	user's manual
conversion adapter		ERNT-AQTY80	
		ERNT-AQTY41	
		ERNT-AQTY81	Conversion adapter (main body), user's manual
		ERNT-AQTX11	
	2-slot type	ERNT-AQTY10A	Conversion adapter (main body), mounting bracket, mounting bracket screws (4),
		ERNT-AQTY13	user's manual
		ERNT-AQTY23	
		ERNT-AQTY51	
		ERNT-AQT68AD	
		ERNT-AQT68ADN	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
Analog/High-speed	1-slot type	ERNT-AQT62DA	user's manual
counter module		ERNT-AQT68DA	
conversion adapter		ERNT-AQTD61	
adaptor		ERNT-AQT68AD-GH	Conversion adapter (main body), mounting bracket, mounting bracket screws (4),
	2-slot type	ERNT-AQT616AD	user's manual
		ERNT-AQT616DA	
		ERNT-AQF12	
Conversion adapter sup	port flange	ERNT-AQF8	Conversion adapter, support flange (main body), mounting screws (2)
,		ERNT-AQF5	· · · · · · · · · · · · · · · · · · ·
		ERNT-AQF3	
		ERNT-AQB38	
		ERNT-AQB68	
		ERNT-AQB58 ERNT-AQB35	Base adapter (main body).
Page adapter		ERNT-AQB35 ERNT-AQB65	MELSEC-Q series base unit mounting screws (4),
Base adapter		ERNT-AQB55	user's manual
		ERNT-AQB32	users manual
		ERNT-AQB62	
		ERNT-AQB52	

# $\textbf{MELSEC-AnS Series} \Leftrightarrow \textbf{MELSEC-L Series Upgrade Tool}$

Product name		Model	Product configuration
		ERNT-ASLTXY10	
land to Control to the land		ERNT-ASLTX40	
		ERNT-ASLTX80	
	4	ERNT-ASLTY22	Conversion adapter (main body), mounting bracket, mounting bracket screws (1),
Input/Output module	1-module	ERNT-ASLTY40	terminal block cover, user's manual
conversion adapter	type	ERNT-ASLTY50	
		ERNT-ASLTY80	
	ERNT-ASLCXY81 Conversion adapter (main body), mounting bracket, mounting buser's manual	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),	
		ERNI-ASLCXY81	user's manual
Analog module	1-module	ERNT-ASLT64AD	Conversion adapter (main body), mounting bracket, mounting bracket screws (1),
conversion adapter	type	ERNT-ASLT62DA	terminal block cover, user's manual
High-speed counter module	1-module	ERNT-ASLTD61	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
conversion adapter	type	ERNT-ASLTD62	terminal block cover, user's manual
		ERNT-ASLB38	
		ERNT-ASLB35	
		ERNT-ASLB33	
		ERNT-ASLB32	Base adapter (main body),
Base adapter		ERNT-ASLBJ	base adapter mounting screws (4),
base adapter		ERNT-ASLB68	retaining clip (2),
			user's manual
		ERNT-ASLB58	
		ERNT-ASLB55	
		ERNT-ASLB52	

### $\textbf{MELSEC-AnS Series} \Leftrightarrow \textbf{MELSEC-Q Series Upgrade Tool}$

Product nar		Model	Product configuration
		ERNT-ASQTXY10	<b>V</b>
		ERNT-ASQTX40	
		ERNT-ASQTX80	
Input/Output module	1-slot type	ERNT-ASQTY22	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
		ERNT-ASQTY40	terminal block cover, user's manual
conversion adapter		ERNT-ASQTY50	
oom order adaptor		ERNT-ASQTY80	
		ERNT-ASQTX20	
	2-slot type	ERNT-ASQTY60	Conversion adapter (main body), mounting bracket, mounting bracket screws (4),
	2 0.01 1,00	ERNT-ASQTY60E	user's manual
		ERNT-ASQT64AD	
		ERNT-ASQT68AD	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
		ERNT-ASQT62DA	terminal block cover, user's manual
		ERNT-ASQT68DA	torrima albert corol, acor e manual
		ERNT-ASQT68AD-G	Conversion adapter (main body), support flange mounting screw (1),
	1-slot type	ERNT-ASQT63ADA	terminal block cover, user's manual  Conversion adapter (main body), mounting bracket, mounting bracket screws (2), terminal block cover, user's manual
		ERNT-ASQTD61	Conversion adapter (main body), mounting breaket, mounting breaket agreeue (0)
Analog /		ERNT-ASQTD62	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
Analog /		ERNT-ASQTD62D	support flange screw (1), terminal block cover, user's manual
High-speed counter /		ERNT-ASQT68TD-H01	Conversion adapter (main body), support flange screw (1),
Temperature input module		ERNT-ASQT68TD-H02	terminal block cover, user's manual
conversion adapter		ERNT-ASQT62RD	Conversion adapter (main body), mounting bracket, mounting bracket screws (2), terminal block cover, user's manual
		ERNT-ASQT64TCTT ERNT-ASQT64TCRT ERNT-ASQT62TCTT	Conversion adapter, mounting bracket, mounting bracket screws (2), terminal block cover, user's manual,
		ERNT-ASQT62TCRT	cold junction temperature compensation resistor (ERNT-ASQT6□TCTT only)
	1-slot type	ERNT-ASQT64TCTTBW	Conversion adapter, mounting bracket, mounting bracket screws (2), terminal block cover,
	+	ERNT-ASQT64TCRTBW	disconnection detection connector conversion cable,
	Conversion	ERNT-ASQT62TCTTBW	disconnection detection connector conversion cable screws (2), user's manual,
	cable	ERNT-ASQT62TCRTBW	cold junction temperature compensation resistor (ERNT-ASQT6 TCTTBW only)
		ERNT-ASQB38N	, , , , , , , , , , , , , , , , , , , ,
		ERNT-ASQB35N	
		ERNT-ASQB33N	
		ERNT-ASQB32N	
		ERNT-ASQB00JN	Base adapter (main body), MELSEC-Q series base unit mounting screws (4),
		ERNT-ASQB68N	base adapter screws (4), user's manual
Base adapter		ERNT-ASQB65N	
		ERNT-ASQB58N	
		ERNT-ASQB55N	
		ERNT-ASQB52N	
		ERNT-ASQB35N-S1	Base adapter (main body), base adapter screws (4), user's manual
		ERNT-ASQB33N-S1 ERNT-ASQDIN3868	0
		ERNT-ASQDIN356500J	Conversion adapter DIN rail mounting bracket (main body), screws (4),
Conversion adapter		ERNT-ASQDIN3355	user's manual
DIN rail mounting brack	et		Conversion adapter DIN rail mounting bracket (main body), screws (3),
		ERNT-ASQDIN52	user's manual
		•	

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Product name		Model	Product configuration
	1-slot type	ERNT-CQTX121	
		ERNT-CQTX112213	Conversion adapter (main body), mounting bracket,
		ERNT-CQTX215218	mounting bracket screws (2), user's manual
		ERNT-CQCX218501	
		ERNT-CQCX114219	Conversion adapter (main body), user's manual
		ERNT-CQTY221	
		ERNT-CQTY226	
		ERNT-CQTY219217	Conversion adapter (main body), mounting bracket,
0 ' '		ERNT-CQTY411	mounting bracket screws (2), user's manual
Conversion adapter		ERNT-CQTY412	
		ERNT-CQTY414218	
		ERNT-CQCY415	
		ERNT-CQCY501	Conversion adapter (main body), user's manual
		ERNT-CQCY213	
	2-slot type	ERNT-CQTX122	
		ERNT-CQTY224	Conversion adapter (main body), mounting bracket,
		ERNT-CQTY225	mounting bracket screws (4), user's manual
		ERNT-CQTY218	
Conversion adapter support flange		ERNT-QF12	
		ERNT-QF8	Conversion adapter support flange (main body), screws (2)
		ERNT-QF5	
Base adapter		ERNT-CQB081	Base adapter (main body), MELSEC-Q series base unit screws (4),
		ERNT-CQB051	user's manual
		ERNT-CQB031	asoi s manaai

# SHARP or YASKAWA Electric Programmable Controller MELSEC-Q Series Upgrade Tool

Prod	duct name	Model	Product configuration
		ERNT-1JQ11N12N	
		ERNT-1JQ12S	Conversion adapter (main body), mounting bracket,
		ERNT-1JQ13S	mounting bracket screws (2), user's manual
	1-slot type	ERNT-1JQ32N34N	
		ERNT-1JQ32S	
		ERNT-1JQ32SC62SC	Conversion adapter (main body), user's manual
		ERNT-1JQ64NC	
	2-slot type	ERNT-1JQ31N34S	Conversion adapter (main body), mounting bracket,
	2-3lot type	ERNT-1JQ33S	mounting bracket screws (4), user's manual
		EDNIT O IOO40NO	Conversion adapter (main body), mounting bracket,
Conversion adapter		ERNT-2JQ210NS	mounting bracket screws (2), user's manual
		EDNIT O IOO400	Conversion adapter (main body), mounting bracket, mounting bracket screws (2),
	1-slot type	ERNT-2JQ212S	external power supply connector, user's manual
	1-Slot type	ERNT-2JQ234N264N	Conversion adapter (main body), mounting bracket,
			mounting bracket screws (2), user's manual
		ERNT-2JQ232S262S	Conversion adapter (main body), mounting bracket,
			mounting bracket screws (2), user's manual
		ERNT-1Y2Q501	
		ERNT-1Y2Q601611	Conversion adapter (main body), mounting bracket,
	1-slot type	ERNT-1Y2Q600	mounting bracket screws (2), user's manual
	1-Slot type	ERNT-1Y2Q500	
		ERNT-1Y2Q602606	
		ERNT-1Y2Q615625	Conversion adapter (main body), user's manual
		ERNT-1Y2Q505	Conversion adapter (main body), mounting bracket,
	2-slot type		mounting bracket screws (2), user's manual
	2-3iot type	ERNT-1Y2Q904914	Conversion adapter (main body), mounting bracket,
		Liller 1120304314	mounting bracket screws (4), user's manual

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Product name		Model	Product configuration
Product name			Ŭ
Universal conversion adapter	1-slot type	ERNT-AQTB20	Universal conversion adapter, mounting bracket,
		ERNT-AQTB20-S1	mounting bracket screws (2),
		ERNT-AQTB38	terminal block, user's manual
		ERNT-AQTB38-E	Universal conversion adapter,
			terminal block, user's manual
		ERNT-ASQTB20	Universal conversion adapter, mounting bracket,
			mounting bracket screws (2),
			terminal block, user's manual

Memo

# **Warranty**

Please confirm the following product warranty details prior to product use.

# Gratis Warranty Terms and Gratis Warranty Range

If any fault or defect (hereinafter referred to as "Failure") attributable to Mitsubishi Electric Engineering should occur within the gratis warranty period, Mitsubishi Electric Engineering shall repair the product free of charge via the distributor from whom you made your purchase.

Should the repair require a business trip, a charge will be incurred for the expense required for the dispatch of an engineer (domestic support only).

Further, onsite readjustments and testing associated with failed module replacement shall be outside the scope of responsibility of Mitsubishi Electric Engineering.

#### **■**Gratis Warranty Period

The gratis warranty period of this product shall be one (1) year from the date of purchase or delivery to the designated place. Note that after manufacture and shipment from Mitsubishi Electric Engineering, the maximum distribution period shall be six (6) months, and the gratis warranty period after manufacturing shall be limited to eighteen (18) months. Further, the gratis warranty period for repaired products shall not exceed the gratis warranty period of the product prior to repair.

#### **■**Gratis Warranty Range

- (1) The gratis warranty range shall be limited to normal use based on the usage conditions, methods and environment, etc., defined by the terms and precautions, etc., given in the instruction manual, user's manual, and caution labels on the product.
- (2) In the following cases, a repair fee shall be applied even if within the gratis warranty period.
  - Failure resulting from inappropriate storage or handling, carelessness or negligence by the user, or Failure caused by the user's hardware or software design.
  - Failure caused by unapproved modifications, etc., to the product by the user.
  - 3) Failure that could have been avoided if, when the Mitsubishi Electric Engineering product was assembled into the user's device, safeguards defined by legal regulations applicable to the user's device or functions or structures considered standard by the industry had been provided.
  - Failure recognized as preventable if the consumed products specified in instruction manuals, etc., were normally maintained or replaced.
  - 5) Failure caused by external factors beyond anyone's control such as fires or abnormal voltage, and Failure caused by Force Majeure such as earthquakes, lightning, or wind and water damage.
  - 6) Failure caused by reasons unpredictable by scientific technology standards at the time of shipment from Mitsubishi Electric Engineering.
  - Any other failure not attributable to Mitsubishi Electric Engineering or found by the user to not be attributable to Mitsubishi Electric Engineering.

# Warranty period after discontinuation of production (fee applied)

- (1) The period in which product repair (fee applied) is available is seven (7) years after product discontinuation. Discontinuation of production shall be reported by Mitsubishi Electric Engineering sales services.
- (2) Product supply (including spare parts) is not possible after production has been discontinued.

#### **Overseas Services**

Overseas services are out of scope.

# Exclusion of opportunity loss and secondary loss from warranty liability

Regardless of the gratis warranty period, Mitsubishi Electric Engineering shall not be liable for compensation for damages arising from causes not attributable to Mitsubishi Electric Engineering, opportunity losses or lost profits incurred by the user due to Failures of Mitsubishi Electric Engineering products, damages or secondary damages arising from special circumstances, whether foreseen or unforeseen by Mitsubishi Electric Engineering, compensation for accidents, compensation for damages to products other than Mitsubishi Electric Engineering products, or compensation for replacement work, readjustment of onsite machinery and equipment, startup test runs or other duties carried out by the user.

### **Changes in product specifications**

The specifications given in the catalogs, manuals, and technical documents are subject to change without notice.

#### **Product application**

- (1) This product shall be used in applications that will not lead to a major accident even in the unlikely event any failure or defect should occur in the product in which the product is incorporated, and shall be systematically provided with external backup and fail-safe functions that operate in the event of any failure or defect.
- (2) This product has been designed and manufactured as a general-purpose product for general industry applications, etc. Thus, the product shall be excluded from use in applications in which the public could be greatly affected such as the applications of the nuclear and other power plants operated by the respective power companies, and applications in which a special quality assurance system is required, such as the applications of railway companies or government or other public offices. The product shall also be excluded from use in aircraft, medical applications, incineration and fuel devices, manned transport devices, equipment for recreation and amusement, and safety devices, in which human life or assets could be greatly affected.

Note that if the user consults with Mitsubishi Electric Engineering in advance with regard to such an application and the user accepts that the application is to be limited and a special quality is not to be required, application shall be made possible upon exchange of required documents.

### Related catalogs

Various catalogs are provided that describe the detailed information of related products. Contact your nearest sales office.

# ■FA Goods General Catalog Devices for wire saving and process time reduction (MEIC098E-136)



- Conversion module for DC I/O
- Terminal module for DC I/O input/output type
- Conversion module for Analog I/O
- Conversion module for high-speed counter
- Cable for positioning module
- Conversion Module for MELSEC-L CPU
- Analog signal converter input/output type
- Goods for MELSEC iQ-F /MELSEC-F FX Series

#### ■ Mitsubishi Programmable Controllers MELSEC-A/QnA Series Transition Guide (L(NA)08077E)



Includes various information related to other Q series large type base / Q series I/O module upgrades.

# ■ Mitsubishi Programmable Controllers MELSEC-AnS/QnAS (Small Type) Series Transition Guide (L(NA)08236E)



Includes various information related to other Q series large type base / L series space module upgrades.

# **Precautions for Choosing the Products**

This catalog explains the typical features and functions of the Mitsubishi Electric Programmable Controller Upgrade Tool and does not provide restrictions and other information on usage and module combinations. When using the products, always read the user's manuals and operating manuals of the products. Mitsubishi Electric Engineering will not be held liable for damage caused by factors found not to be the cause of Electric Engineering; machine damage or lost profits caused by faults in the Mitsubishi Electric Engineering products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi Electric Engineering; damages to products other than Mitsubishi Electric Engineering products; and to other duties.

## ♠ For safe operations

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi Electric Engineering.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

# MITSUBISHI ELECTRIC ENGINEERING

 $[NAGOYA\ ENGINEERING\ OFFICE]\ 139, Shimoyashikicho, Shimoyashiki, Kasugai, Aichi, 486-0906, Japan$ 

Before using this product, ensure the safety in case of failure. We shall not bear any responsibility for consequential damages caused by failure of the product.