

## Mitsubishi Electric Asset Portal

Transparency for your production

Easily recognise optimisation potential



- Reduce your maintenance costs
- Increase system availability
- Recognise your energy saving potential

**Automating  
the World**

// Simple connection of all devices - from the sensor to the line // Future-proof thanks to the use of open standards // Management of all devices and systems in one tool

# Mitsubishi Electric Asset Portal

Every system is unique and is made up of many different components. The essential requirement is that these components interact harmoniously with each other and that the production data of your line can be clearly displayed, analysed and improved in real time.

The basis for this is data collection. Open standards, such as those defined in Industry 4.0, simplify this. A portal is **needed** that can manage all the devices used, regardless of where they come from, who built them and where they are located in your process. These criteria are the basis of our Mitsubishi Electric Asset Portal.

The new Mitsubishi Electric Asset Portal helps you to structure, monitor, manage and optimise your processes more intelligently and efficiently than ever before.



Are you concerned with the following questions?

Do you have an overview of the various devices from different providers?

Would you like to have a quick overview of the status and condition of each individual system - no matter where you are or where the system is located?

Do you want to switch from a reactive to a proactive maintenance model?

Do you know the energy consumption per unit or batch?

Can you manage your energy consumption?

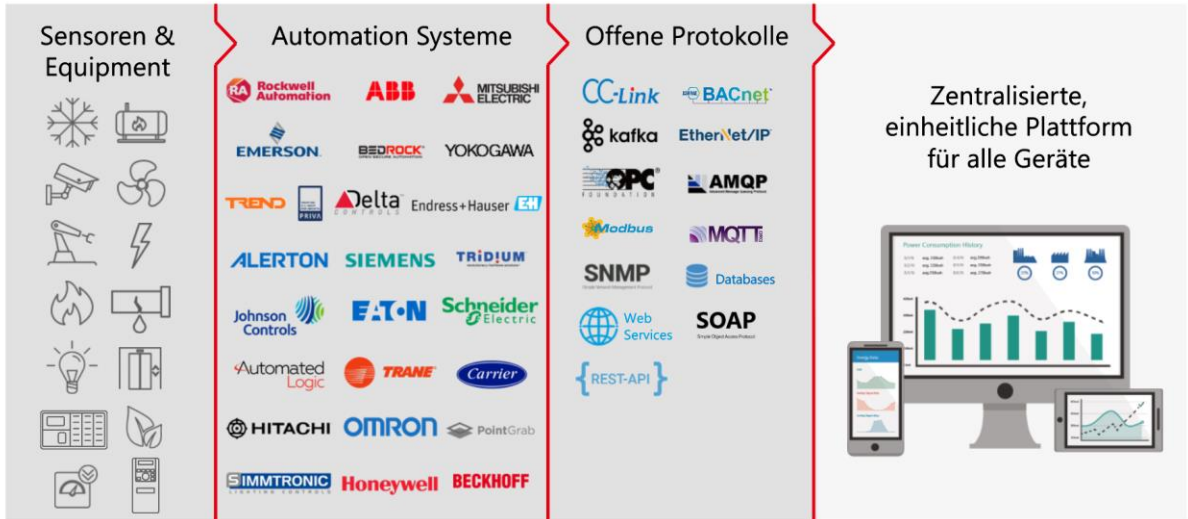
# Mitsubishi Electric Asset Portal



## Data acquisition

Initially, data from various devices will be collected and integrated into the Mitsubishi Electric Asset Portal via different interfaces. In future, this will be done via OPC UA and MQTT, the open standards used worldwide for digitalisation. Standards such as Modbus will also be supported for existing systems. Mitsubishi Electric devices are integrated directly via the Mitsubishi Electric drivers and are optimally integrated into the Mitsubishi Electric software concept.

The Mitsubishi Electric Asset Portal can also be used as a digital twin of the devices and systems.



Connection of all devices to the Mitsubishi Electric Asset Portal via open protocols

## Visualisation of the data

In the second step, the data is visualised. A large number of templates are available for this purpose. These can display the status of robots, inverters or servos. This information can be used to visualise the process or the entire system. The "Overall Equipment Effectiveness" (OEE) of devices can be easily displayed and the historical status of a system is visualised. Reasons for downtime are identified at a glance and the cause can be analysed and optimised.



Overview of assets in the Mitsubishi Electric Asset Portal

The integration of the individual assets is very easy. The Mitsubishi Electric Asset Portal supports the OPC UA Companion Specification for robots. This means that any robot that supports this standard can be integrated directly. The name of the robot and its IP address are displayed in an Excel spreadsheet. All the required data is then automatically read from the robot and visualised. Plug and work is the keyword here.

| TargetEquipment | InstanceName  | EquipmentClass | ParameterName      | ParameterValue              |
|-----------------|---------------|----------------|--------------------|-----------------------------|
| Assets          | Welding Robot | RobotBase      | ControllerIP       | 192.168.3.100               |
| Assets          | Welding Robot | RobotBase      | ControllerModel    | CR800-DD                    |
| Assets          | Welding Robot | RobotBase      | ControllerSerialNr | #C98710                     |
| Assets          | Welding Robot | RobotBase      | RobotSerialNr      | #R98710                     |
| Assets          | Welding Robot | RobotBase      | RobotModel         | RV-13FV-R                   |
| Assets          | Welding Robot | RobotBase      | RobotAssetID       | ID 108765                   |
| Assets          | Welding Robot | RobotBase      | X1_Position        | iot/R/NR_001/Position_Axis1 |
| Assets          | Welding Robot | RobotBase      | X2_Position        | iot/R/NR_001/Position_Axis2 |
| Assets          | Welding Robot | RobotBase      | X3_Position        | iot/R/NR_001/Position_Axis2 |
| Assets          | Welding Robot | RobotBase      | X4_Position        | iot/R/NR_001/Position_Axis3 |
| Assets          | Welding Robot | RobotBase      | X5_Position        | iot/R/NR_001/Position_Axis4 |

Other devices are integrated just as easily as the robots. The only difference is that the individual variables from the Excel spreadsheet still need to be assigned to the template.

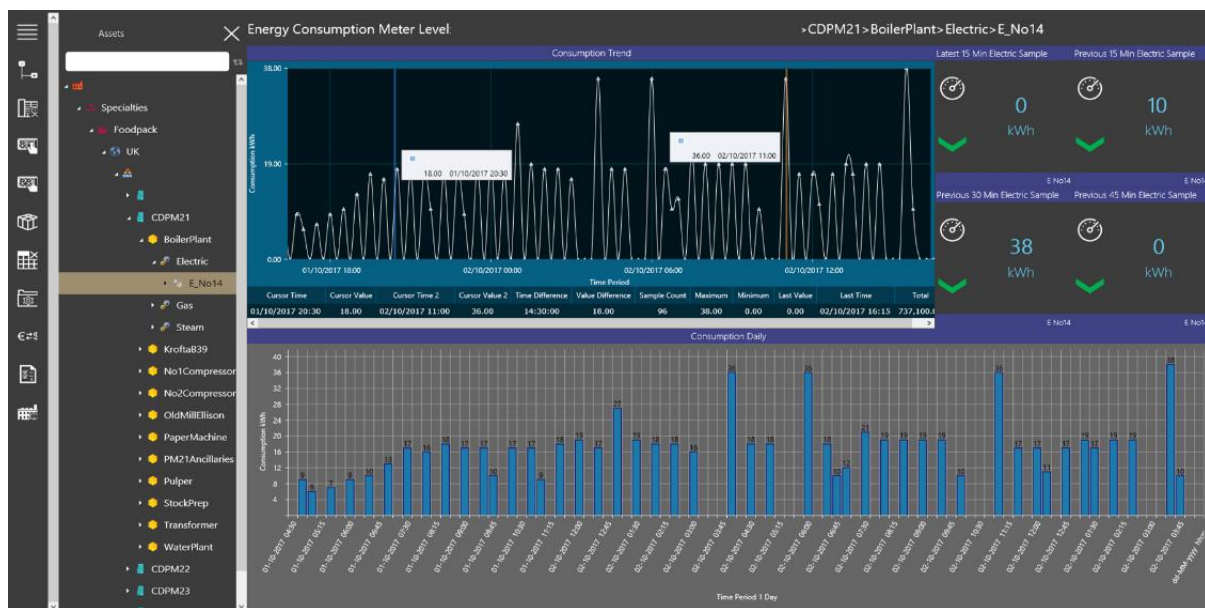


Fig. Template for visualising energy consumption

This procedure also makes energy consumption transparent. There is a template for recording energy. In the first step, we concentrate on the electricity values. The other energy sources are integrated as required.

The templates correspond to the state of the art, but every system is different. This means that the templates can be customised and expanded to meet your technical requirements or regulations. Logos, colours, fonts and even the graphs can be flexibly adapted to your requirements. Numerous libraries are available for this purpose.

**An selection of the templates that are freely available to you:**

- Comparison of consumption at different times
- Evaluation of power peaks
- Analysing energy consumption
- OEE Management
- and many more

## Analysis and optimisation of data

Many system operators have data acquisition and visualisation well under control. However, very few take the next step - analysis and optimisation. However, this is absolutely essential when it comes to energy management.

The Mitsubishi Electric Asset Portal provides various statistical and AI-supported analysis methods. This includes the simple comparison of consumption at different times, the evaluation of power peaks and also the reaction to them.

The wear limit of the robots is automatically analysed and preventive maintenance recommendations are provided in the form of warnings and faults.

If the internal analyses are not sufficient, the MaiLab real-time analysis from Mitsubishi Electric can also be used via the digital twin. Here, a model is automatically created using AI in order to implement preventive maintenance, avoidance of waste/rejects, process optimisation, energy savings, etc.

You don't need to be a data analyst for either solution. The portal and MaiLab are written for production employees.

You can find more information about MaiLab on our homepage:

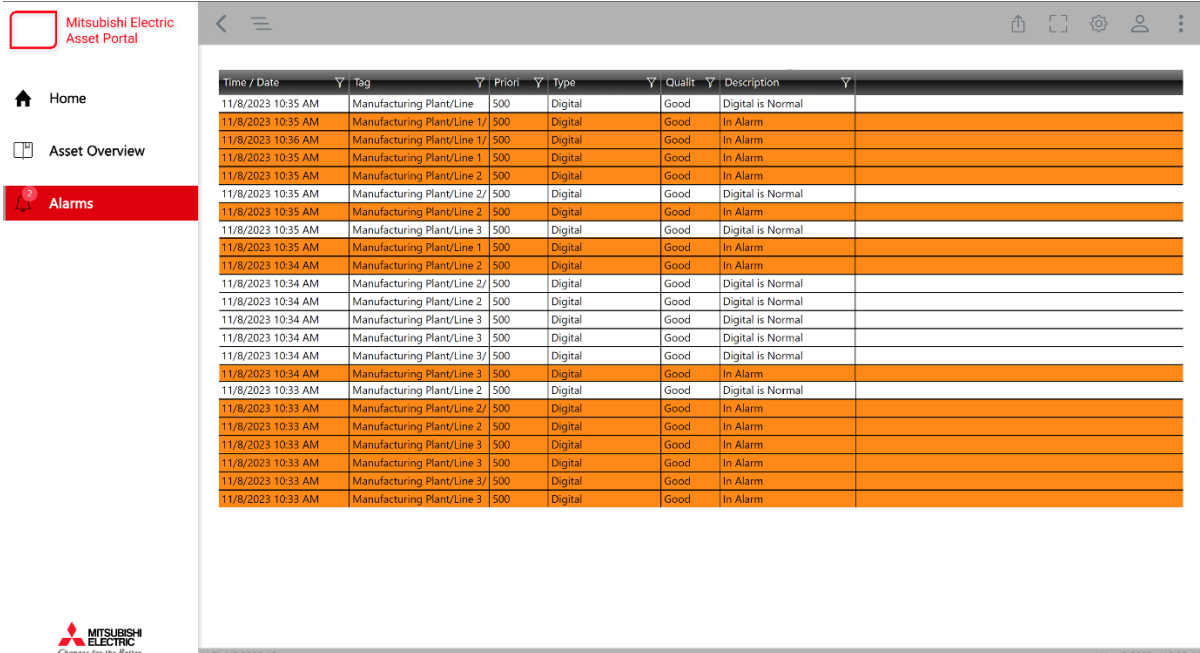


[en.mitsubishielectric.com/fa/products/edge/edgsw/edgap/melsoft-mailab](https://en.mitsubishielectric.com/fa/products/edge/edgsw/edgap/melsoft-mailab)

## Error analysis and reports

A separate error analysis can be carried out for each device. Error information is also available for all assets.

Reports on energy consumption, errors, OEE etc. can be created using the integrated report tool. These reports are based on Excel and can be created individually, but also in accordance with standards.



Mitsubishi Electric Asset Portal

Home

Asset Overview

Alarms

| Time / Date        | Tag                        | Priori | Type    | Quality | Description       |
|--------------------|----------------------------|--------|---------|---------|-------------------|
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 1 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 1 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:36 AM | Manufacturing Plant/Line 1 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 1 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:35 AM | Manufacturing Plant/Line 1 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:34 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | Digital is Normal |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 2 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | In Alarm          |
| 11/8/2023 10:33 AM | Manufacturing Plant/Line 3 | 500    | Digital | Good    | In Alarm          |

V TL/KF 2023:10

Nov 8 2023 - 10:25 AM

Error messages from the Mitsubishi Electric Asset Portal according to ISA 18.2

## Theoretical basis: Smart Manufacturing Kaizen Level (SMKL)

The Mitsubishi Electric Asset Portal is based on the SMKL concept for digitalising a factory. It follows the Japanese virtues of Kaizen and Poka Yoke. Kaizen means solving problems in small steps and Poka Yoke means avoiding mistakes. Together, these form the basis for ensuring the success of your digitalisation approach.

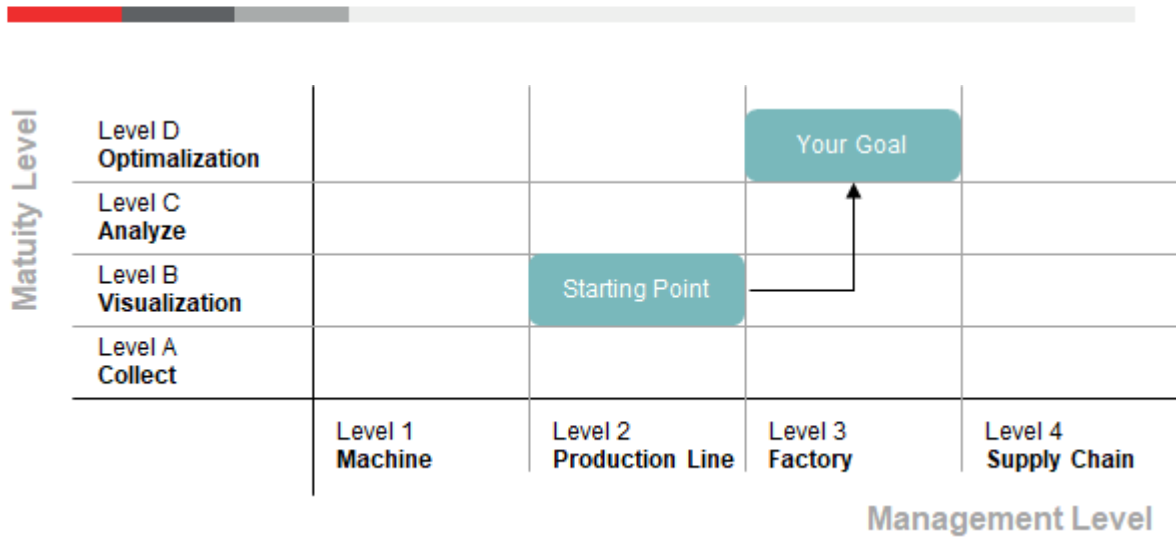


Fig. SMKL matrix

The vertical axis represents the degree of maturity of data utilisation based on 4 levels: Data collection, visualisation, analysis and optimisation.

Firstly, your status (starting point) in terms of maturity is determined. We then define the goal together and plan how to achieve it in sensible and manageable steps.

The approach is completed by considering the management level from the machine to the entire supply chain and can therefore be scaled as required.

You can find more information about SMKL on our homepage:



[en.mitsubishielectric.com/fa/lp/smart-manufacturing-smkl](https://en.mitsubishielectric.com/fa/lp/smart-manufacturing-smkl)

## Security of the Mitsubishi Electric Asset Portal

Data security is very important to the Mitsubishi Electric Asset Portal. Because your data is your capital.

By complying with the globally recognised standard for cybersecurity in industrial automation IEC 62443, we support and continuously adapt state-of-the-art security technology.



## Mitsubishi Electric branches

|  |   |   |  |
|--|---|---|--|
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|--|--|---|
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|--|--|---|

## Austria

|   |
|---|
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|---|



The e-F@ctory concept from Mitsubishi Electric utilises both FA and IT technologies to minimise the total costs of development, production and maintenance, with the aim of achieving a level of production that "fulfils the One step ahead of the times". It is supported by the e-F@ctory Alliance partners covering software, devices and system integration and thus create the optimal e-F@ctory architecture that meets the needs of the customer and investment plans of end customers.



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