



### Product Variants

	Article no.
<i>EU generic variants</i>	
Eve Single Plus, 3 phase, type 2 socket	904460223
Eve Single Plus, 3 phase, type 2 shutter socket	904460225
Eve Single Plus, 3 phase, fixed charging cable	904460227
<i>Eve Single Plus DE</i>	
Eve Single Plus DE, 3 phase, type 2 socket	904460323
Eve Single Plus DE, 3 phase, fixed charging cable	904460327

### General Product Specifications

Number of sockets	1
Types of sockets	<ul style="list-style-type: none"> <li>Type 2 socket, in accordance with IEC 62196-2</li> <li>Type 2 shutter socket, in accordance with IEC 62196-2</li> <li>Fixed charging cable, with plug in accordance with IEC 62196-2 (charging cable holder integrated in product)</li> </ul>
Energy meter	4 quadrant meter, MID certified, EN 50470 class B <ul style="list-style-type: none"> <li>additional Eichrecht certification (only for Eve Single Plus DE)</li> </ul>
Authentication methods	Plug&Power (not available on Eve Single Plus DE) RFID card Autocharge (encoded MAC address) ISO15118 Plug & Charge * Girocard (only for Eve Single Plus DE) *
Status indication	Integrated in display
Display	3.5" IPS color display Resolution: 320 x 240 pixels Brightness: 1000 cd/m <sup>2</sup> Contrast ratio: 800:1
Earthing systems	TN-S, TN-C-S, TT, IT * *
Nominal output voltage (+/- 10%)	400 V (3x230 V)
Maximum current	32 A per phase
Maximum power	22 kW
Permissible cos phi	0.9-1



Feeder cable diameter	Cable gland, clamping range for 14-25.5 mm cable thickness Cable inlet range: <ul style="list-style-type: none"> <li>• Max. 10 mm<sup>2</sup> per wire: solid wire (PVC cable)</li> <li>• Max. 6 mm<sup>2</sup> per wire: stranded wire with ferrules (PVC cable)</li> </ul>
Contactors	Integrated simultaneous activation of all phases Extra safety relay in series for emergency situations
Overcurrent protection	Integrated in firmware, overcurrent response scenarios: 110-125% after 100 seconds 125% and higher after 5 seconds
Residual current protection	Integrated 6 mA DC fault current detection

\* Will be available in future firmware releases, also depending on car and back office integration.

\* \* Caution: not all vehicles support the IT system. In that case, or with 3-phase charging, an isolation transformer is required.

## Communication and Protocols

Controller board	Alfen Hardware Platform (AHP) version 2
Vehicle communication	Mode 3 in accordance with IEC 61851-1 ed. 3 (2017) ISO15118 hardware ready (HomePlug Green PHY)
RFID card reader authentication	ISO/IEC 14443A/B, 13.56 MHz MIFARE Classic 1K/4K, MIFARE Ultralight, DESFire (EV1/EV2) Maximum length: 10 bytes
Mobile communication	LTE Cat M1 4G: bands: 3, 8, 20 Wi-Fi / Wireless LAN (802.11 b/g/n, 2.4 GHz) *
Back office communication	OCPP 1.6 (JSON) OCPP 1.6 (JSON) + Security Whitepaper OCPP 2.0.1 (JSON) (upgradeable) * *
Ethernet	RJ-45: 2x1/100 BaseT 2 ethernet ports for ethernet daisy chaining
Available inputs for Smart Charging	<ul style="list-style-type: none"> <li>• RJ-11: DSRM 4.0-4.2 and SMR 5.0 (port P1) *</li> <li>• RJ-45: Modbus TCP/IP (external energy meter) or Modbus TCP/IP Slave (Energy Management System) *</li> <li>• RS-485: Modbus RTU (external energy meter) *</li> <li>• Télé-Information Client (TIC) (Linky smart meter) *</li> <li>• Suspend Signal §14a EnWG *</li> </ul>

\* Will be available in future firmware releases.

\* \* Ongoing integration, consult the Alfen Knowledge Base for the latest overview.

## Information on Radio Frequency

Alfen charging stations are approved according to the Radio Equipment Directive (2014/53/EU). The frequency bands and maximum power of this equipment are listed here. All radio equipment is mentioned in this table, the presence or activation for each radio equipment depends on the specific configuration. These are maximum values for all models and component sub suppliers.



The Maximum power is rated power plus maximum tolerance.

Radio equipment	Frequency / Frequency bands	Max. power
DCS1800/PCS1900	1800 / 1900 MHz	30 dBm
GSM850/EGSM900	850 / 900 MHz	33 dBm
LTE-FDD	B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/ B25/ B26/B27/B28/B66/B85	21 dBm
RFID card reader	13.56 MHz	-1 dBuA/m at 10 m
Wi-Fi 802.11 b/g/n *	2.4 GHz to 2.4835 GHz	19 dBm

\* Will be available in future firmware releases.

## Cyber Security

Default network interfaces	Web Service on port 443, finds charging station using mDNS
Privacy	When using the NFC reader, the charging station will read, process and cache the unique identifier contained within the tag. This data, along with location data (if configured), can be erased in the ACE Service Installer
SIM card	Mini SIM card (4G), gold plated APN username and password authentication via: <ul style="list-style-type: none"> <li>• PAP</li> <li>• CHAP *</li> </ul>
Charging Station Management System authentication	TLS 1.2 with x509 certificates. Supported CSMS root certificate algorithms: <ul style="list-style-type: none"> <li>• RSA-2048/4096</li> <li>• ECDSA (P-256 or P-384)</li> </ul>
EVSE authentication	HTTP Basic authentication <ul style="list-style-type: none"> <li>• with TLS</li> <li>• with TLS and Client Side Certificates</li> <li>• without TLS</li> </ul>
Diagnostic files	Encryption: AES-128-CBC
Firmware update files	Encrypted and signed. Algorithms: Encryption: AES-256-CBC Signature: ECDSA (P-384) with SHA-256
Root certificate	Installed in the factory, updateable through OCPP management system using UpdateFirmware message, or locally with ACE Service Installer
Tamper detection *	Security notification will be sent to the back office

\* Will be available in future firmware releases.



### Available Memory

RFID card	Local list: approx. 1,000 tokens (via the Back office) White list: approx. 1,200 tokens (local)
Transaction database	Approx. 1,500 transactions (of 4 h with 15 min Wh metering values)
Logging for diagnostics	Approx. 1,750,000 lines

### Environmental Conditions and Product Properties

Operating temperature *	-25°C to +55°C
Electrical safety class	Class I
Ingress protection	IP55
Impact protection	IK10
Stand-by power consumption	Eve Single Plus: 6.7 W Eve Single Plus DE: 6.3 W
Environmental conditions	Indoor / outdoor use
Electromechanical environmental conditions	E2 * *
Mechanical environmental conditions	M1 * *

\* More information about the indicated operating temperature:

- The stated charging performance is solely applicable to the charging station itself. The actual performance depends on the vehicle and the grid connection.
- A front cover in a colour other than RAL9016, and the addition of customizations, can increase the heat transfer from solar radiation transferred to the charging station. This also affects the charging performance.

\* \* according to 2014/32/EU (Measuring Instruments Directive)

Charging stations which are installed outside without protection will be affected by weather conditions and will discolour. Alfen recommends to install the charging stations in a sheltered environment to optimize the lifetime of the product.

### Casing

Type	Wall-mounted charging station	
Mounting options	Wall mounting Pole mounting (optional)	
Material	Polycarbonate, UV resistant and flame retardant	
Color	RAL 9016 (Traffic White): front side RAL 7043 (Traffic Grey B): front side (optional) RAL 7043 (Traffic Grey B): rear	
Locking	Torx T20 screws	
<b>Casing</b>	<b>Dimensions (H x W x D)</b>	<b>Weight</b>
Eve Single Plus, model with socket	373 x 242 x 138 mm	3.8 kg

# Eve Single Plus

## Technical specification



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POWER TO ADAPT

Eve Single Plus, model with fixed charging cable	373 x 242 x 173 mm	3.6 kg
• Charging cable	5 m / 7.5 m	2.5 kg / 3.6 kg
Eve Single Plus DE, model with socket	373 x 242 x 181 mm	4.2 kg
Eve Single Plus DE, model with fixed charging cable	373 x 242 x 216 mm	4.0 kg
• Charging cable	5 m / 7.5 m	2.5 kg / 3.6 kg
<b>Packaging *</b>	<b>Dimensions (L x W x H)</b>	<b>Weight</b>
Box with Eve Single Plus, model with socket	390 x 290 x 210 mm	4.8 kg
Box with Eve Single Plus, model with fixed charging cable	390 x 290 x 210 mm	4.6 kg
Box with Eve Single Plus DE, model with socket	390 x 290 x 270 mm	5.6 kg
Box with Eve Single Plus DE, model with fixed charging cable	490 x 290 x 370 mm	7.9 kg
Box with charging cable 5 m / 7.5 m	390 x 290 x 130 mm	2.9 kg / 4.0 kg

\* Eve Single Plus DE charging stations have the fixed charging cable connected to the charging station ex-factory. Non-DE charging stations have the charging cable delivered in a separate box.

## Installation Instructions

Input: minimum recommended cable diameters  
(based on assumed max. 50 m cable length)

1 phase 3.7 kW charging, 16 A per phase: 3 x 4 mm<sup>2</sup>  
 3 phase 11 kW charging, 16 A per phase: 5 x 4 mm<sup>2</sup>  
 1 phase 7.4 kW charging, 32 A per phase: 3 x 6 mm<sup>2</sup>  
 3 phase 22 kW charging, 32A per phase: 5 x 6 mm<sup>2</sup>

Short-circuit protection *	With circuit breakers:	With fuses:
1 phase 16 A (3.7 kW):	1x 20 A, 1P, type B or C	1 x 20 A gG
3 phase 16 A (11 kW):	1x 20 A, 3P, type B or C	3 x 20 A gG
1 phase 32 A (7.4 kW):	1x 40 A 1P, type B or C	1 x 35 A gG
3 phase 32A (22 kW):	1x 40 A 3P, type B or C	3 x 35 A gG
Residual current protection *	Residual Current Device (RCD): 30 mA type A, 2P (1 phase) or 4P (3 phase)	
Nominal input voltage	V <sub>L1-N</sub> : 230 V (+/-10%) V <sub>L2-N</sub> : 230 V (+/-10%) V <sub>L3-N</sub> : 230 V (+/-10%) V <sub>PE-N</sub> : ≈ 0 V	V <sub>L1-L2</sub> : 400 V (+/-10%) V <sub>L1-L3</sub> : 400 V (+/-10%) V <sub>L2-L3</sub> : 400 V (+/-10%)
Nominal frequency	50 Hz	
Earthing system	TN system: separate PE cable TT system: separately installed earthing electrode < 100 Ω spreading resistance IT system: connected to a shared reference (common earth) with other metal parts	

\* Please take derating into account to ensure minimum operation of the charging station.



### Standard and Selectable Settings Ex-Works

Authorization	Plug&Power (not available on Eve Single Plus DE) RFID card Autocharge (encoded MAC address) * ISO15118 Plug & Charge * *
Smart Charging	Off Active Load Balancing * * Active Load Balancing + Smart Charging Network * *
Personalized display	Off (Alfen logo) On (your own logo) *
Languages supported	English, Dutch, German, French, Spanish, Portuguese, Italian, Norwegian, Swedish, Finnish, Czech, Danish, Hungarian, Icelandic, Latvian, Polish, Romanian, Slovak, Slovenian.
Management system	Stand alone OCPP charging station management systems *
Direct Payment options	Off Dynamic QR code * Payment Terminal Wall Mount (904464010) * Payment Terminal Single pole (904460700) (Eve Single (Duo) Pole not included) * Girocard (only for Eve Single Plus DE) * *

\* Optional feature. Adding it may result in additional costs when purchasing your charging station. The default settings are always mentioned first. For more information about the optional features, contact your sales representative.

\* \* Will be available in future firmware releases.

### Accessories

	Article no.
Type 2 charging cable for fixed cable variants, 5 m, 3 phase, up to 32 A (22 kW)	803993440
Type 2 charging cable for fixed cable variants, 7.5 m, 3 phase, up to 32 A (22 kW)	803993441
Eve Single Pole	803873036
Eve Single Duo Pole	803873280
Concrete base	833829300
Metal base	803828601
Additional RFID card	203120010
Payment Terminal Wall Mount	904464010
Payment Terminal Single pole (Eve Single (Duo) Pole not included)	904460700