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Eve Single

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Product variants

Product variant	Article no.
Eve Single S-line	
Eve Single S-line, 1-phase, LED, type 2 socket	904460503
Eve Single S-line, 1-phase, LED, RFID, type 2 socket	904460553
Eve Single S-line, 1-phase, LED, LTE, type 2 socket	904460573
Eve Single S-line, 1-phase, LED, fixed charging cable	904460507
Eve Single S-line, 1-phase, LED, RFID, fixed charging cable	904460557
Eve Single S-line, 1-phase, LED, LTE, fixed charging cable	904460577
Eve Single S-line, 1-phase, LED, type 2 socket shutters	904460505
Eve Single S-line, 1-phase, LED, RFID, type 2 socket shutters	904460555
Eve Single S-line, 1-phase, LED, LTE, type 2 socket shutters	904460575
Eve Single S-line, 3-phase, LED, type 2 socket	904460523
Eve Single S-line, 3-phase, LED, RFID, type 2 socket	904460583
Eve Single S-line, 3-phase, LED, LTE, type 2 socket	904460593
Eve Single S-line, 3-phase, LED, fixed charging cable	904460527
Eve Single S-line, 3-phase, LED, RFID, fixed charging cable	904460587
Eve Single S-line, 3-phase, LED, LTE, fixed charging cable	904460597
Eve SingleS-line, 3-phase, LED, type 2 socket shutters	904460525
Eve Single S-line, 3-phase, LED, RFID, type 2 socket shutters	904460585
Eve Single S-line, 3-phase, LED, LTE, type 2 socket shutters	904460595
Eve Single Pro-line	
Eve Single Pro-line, 1-phase, display, type 2 socket	904460003
Eve Single Pro-line, 1-phase, display, type 2 socket shutters	904460005
Eve Single Pro-line, 1-phase, display, fixed charging cable	904460007
Eve Single Pro-line, 3-phase, display, type 2 socket	904460023
Eve Single Pro-line, 3-phase, display, fixed charging cable	904460027
Eve Single Pro-line, 3-phase, display, type 2 socket shutters	904460025

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Product variant	Article no.
Pro-line DE	
Eve Single Pro-line DE, 3-phase, display, type 2 socket	904460123
Eve Single Pro-line DE, 3-phase, display, fixed charging cable *	904460127

* Only for Austria: Sales, installation and usage of charging stations with charging cables > 5 m is not allowed according to the Austrian calibration law ("Maß- und Eichgesetz").

Specification of Eve Single Product Lines

Specification	S-line	Pro-line	Pro-line DE
1-phase	✓	✓	—
3-phase	✓	✓	✓
RFID authentication	✓	✓	✓
RGB Status LED	✓	—	—
Display	—	✓	✓
Mobile network communication	✓	✓	✓
Ethernet/LAN dedicated network connection	✓	✓	✓
Energy meter	MID certified	MID certified	MID certified, encrypted data transport
"Eichrecht" conformity	—	—	✓
Residual Current Device (RCD) on board	—	—	—
Max. 6 mA DC detection	✓	✓	✓
Short-circuit protection on board	—	—	—
Provision of electrical connection for E-socket	*	*	—
Giro-e Support	—	—	✓
Type 2 socket	✓	✓	✓
Type 2 socket with shutters	✓	✓	—
Fixed charging cable	✓	✓	✓

* Provision of electrical connection for E-Socket is only available on shutter socket variants

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General Product Specifications

Number of sockets	1
Types of sockets	Fixed charging cable, with plug in accordance with • SAE J1772 Type 1 or • IEC 62196 Type 2 (charging cable holder integrated in product) Type 2 socket, in accordance with IEC62196-2 Type 2 socket shutters, in accordance with IEC62196-2, ed. 2
Authentication methods	Plug & Charge RFID charge card (Pro-line or selected S-line models only) Girocard (Pro-line DE) Back office
Status indication	S-line: RGB LED Pro-line: Integrated in display
Display (Pro-line models only)	3.5" TFT color display Resolution: 320 x 240 pixels Brightness: 400 cd/m^2
Supported power systems	TN-S, TN-C-S, TT, IT *
Nominal output voltage (+/- 10%)	230 V, 1-phase products 400 V (3x230 V), 3-phase products
Maximum design current	1-phase products: 32 A per phase S-line 3-phase: 16 A per phase Pro-line 3-phase: 32 A per phase
Maximum design power	1-phase products: 7.4 kW S-line 3-phase: 11 kW Pro-line 3-phase: 22 kW
Cable diameters	Cable gland, clamping range for 14-25.5 mm cable thickness Cable clamps on main switch, range: • Max. 10 mm^2 per wire: solid wire (PVC cable) • Max. 6 mm^2 per wire: stranded wire with ferrules (PVC cable)
Contactors	Per phase controllable relays Integrated per socket, simultaneous activation of all phases Extra safety relay in series for emergency situations
Overcurrent protection	Integrated in firmware, overcurrent response scenarios: 105% after 1,000 seconds 110% after 100 seconds 120% after 10 seconds 150% after 2 seconds
Residual current protection	Integrated 6 mA DC fault current detection Response time: 0.1-10 seconds

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

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Communication and Protocols for the Charging Station Management System

Controller board	NG910
Vehicle communication	Mode 3 in accordance with IEC 61851-1 ed. 3 (2017)
RFID authentication (Pro-line or selected S-line models only)	ISO/IEC 14443A/B, 13.56 MHz MIFARE Classic 1K/4K, MIFARE Ultralight, DESFire (EV1/EV2) Maximum length: 7 bytes
Internet/networking possibilities	GPRS 2G (Pro-line or selected S-line models only) LTE Cat M1 4G (Pro-line or selected S-line models only) Ethernet/LAN
Supported mobile communication bands (Pro-line or selected S-line models only)	2G: EGPRS quad-band: 850 / 900 / 1800 / 1900 MHz 4G: LTE Cat M1 bands: 3, 8, 20
Communication protocol Central System	OCPP 1.5 (JSON) OCPP 1.6 (JSON) 2nd edition, certified OCPP 2.0.1 (JSON)
Available inputs for Smart Charging	RJ-11: DSMR 4.0-4.2 and SMR5.0 (port P1) or external relay RJ-45: Modbus TCP/IP (external energy meter) or Modbus TCP/IP Slave (Energy Management System) RS-485: Modbus RTU (external energy meter) Télé-Information Client (Linky smart meter)

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.

Maximum power = rated power + maximum tolerance

Radio equipment	Frequency / Frequency bands	Max. power
DCS1800/PCS1900	1800 / 1900 MHz	32 dBm
GSM850/EGSM900	850 / 900 MHz	35 dBm
LTE-FDD	B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/ B25/B26/B27/ B28/B66/B85	23 dBm
RFID	13.56 MHz	32 dBm

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Cyber Security

SIM card	Mini SIM card (2G/4G) APN username and password
Charging Station Management System authentication	TLS 1.2 x509 2048/4096 bit root certificate
EVSE authentication	HTTP Basic authentication, with TLS (recommended) or without TLS
Remote console access (SSH, telnet)	Not supported
Diagnostic files	Encryption: AES 128 bit
Firmware update files	Encrypted and digitally signed Encryption: SHA256 hash (pkcs1/PSS padding with 2048 RSA key) Signature: RSA public key 2048 bit
EVSE Internal Flash	AES 128 bit (erased when read)

Available Memory

Charge card	Local list: approx. 800 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. 45,000 lines

Operating Conditions

Operating temperature *	-25°C to +55°C
Relative atmospheric humidity	5 to 95 %
Electrical safety class	Class I
Degree of protection (casing)	IP55
IK protection (mechanical impact)	IK10
Stand-by power consumption	S-line: approx. 8.0 W Pro-line: approx. 8.9 W Pro-line DE: approx 9.9 W
Environmental conditions	indoor / outdoor use
Electromechanical environmental conditions	E2 * *
Mechanical environmental conditions	M1 * *

* The operating temperature stated is under the following conditions:

- A maximum charging power of 11 kW is guaranteed at an ambient temperature above 40 °C and below the stated maximum operating temperature.
- The influence of direct solar radiation on the charging station is excluded.
- The influence of a front cover with another color than RAL9016 is excluded.
- The influence of customizations applied on the charging station is excluded.

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- The stated charging performance is solely applicable to the charging station, actual performance is dependent on the vehicle and the grid connection.

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

Charging stations which are exposed to the elements will gradually age and/ or discolor. Alfen recommends to place the charging stations in a sheltered environment to optimize the lifetime of the product.

Casing

Type	Wall-mounted charging station	
Mounting options	Wall mounting or mounting post (accessory)	
Material	Polycarbonate, UV resistant and flame retardant	
Color	RAL 9 016 (Traffic White): front side RAL 7043 (Traffic White): front side RAL 7043 (Traffic Grey B): rear	
Locking	Torx T20 screws	
Casing (exterior) dimensions (H x W x D)	**S-line/Pro-line**	**Pro-line DE**
model with socket model with fixed charging cable **	373 x 242 x 138mm 373 x 242 x 173mm	373 x 242 x 181mm 373 x 242 x 216mm
Packaging Dimensions (H x W x D)	**S-line/Pro-line**	**Pro-line DE**
Packaging model with socket model with fixed charging cable, including charging cable	470 x 320 x 250mm 470 x 320 x 370mm	470 x 320 x 290mm 470 x 320 x 410mm
Weight	**S-line/Pro-line**	**Pro-line DE**
Casing Total, incl. packaging	Approx. 4 kg Approx. 4.5 kg	Approx. 4.5 kg Approx. 5 kg

* The charging cable is not part of the delivery scope. It has to be ordered separately and is shipped in a separate box.

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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^2 3-phase 11 kW charging, 16 A per phase: 5 x 4 mm^2 1-phase 7.4 kW charging, 32 A per phase: 3 x 6 mm^2 3-phase 22 kW charging, 32A per phase: 5 x 6 mm^2
Short-circuit protection	With circuit breakers: 1-phase 16A (3.7 kW): 1 x 20A, 1P, type B or C 3-phase 16A (11 kW): 1 x 20A, 3P, type B or C 1-phase 32A (7.4 kW): 1 x 40A, 1P, type B or C 3-phase 32A (22 kW): 1 x 40A, 3P, type B or C With fuses: 1-phase 16A (3.7 kW): 1 x 20A, gG 3-phase 16A (11 kW): 3 x 20A gG 1-phase 32A (7.4 kW): 1. x 35A gG 3-phase 32A (22 kW): 3 x 35A gG
Residual current protection (possibly i.c.w. circuit breakers)	Earth leakage circuit breakers: 30 mA type A or B, 4P 3.7 kW/11 kW charging: minimum 20 A 7.4 kW/22 kW charging: 40 A
Nominal input voltage	• V_{L1-N}: 230 V (+/-10%) • V_{L2-N}: 230 V (+/-10%) • V_{L3-N}: 230 V (+/-10%) • V_{L1-L2}: 400 V (+/-10%) • V_{L1-L3}: 400 V (+/-10%) • V_{L2-L3}: 400 V (+/-10%) • V_{PE-N}: ≈ 0V
Nominal frequency	50 Hz
Earthing	TN system: separate PE cable TT system: separately installed earthing electrode < 100 Ohm spreading resistance) IT system: connected to a shared reference (common earth) with other metal parts

External protection according to EV/ZE-Ready

IEC 61000-4-16 or IEC 61543

	Level 3		Level 4	
Frequency range	**Continuous test V_{rms} (V)**	**Current (mA)**	**Continuous test V_{rms} (V)**	**Current (mA)**
1 kHz - 1.5 kHz	1	6.6	3	20
1.5 kHz - 15 kHz	1-10	6.6-66	3-30	20-200
15 kHz - 150 kHz	10	66	30	200

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OCPP Specifications

Supported feature profiles and functionalities

	OCPP 1.5	OCPP 1.6
Core (Transactions, Availability, remote control, Authorization, Meter value, Data transfer)	✓	✓
FirmwareManagement	✓	✓
Reservation	✓	✓
LocalAuthlistManagement	—	✓
RemoteTrigger	—	✓
SmartCharging	⛉	✓
Security	—	✓
Provisioning	—	✓
Tariff and Cost	⛉	⛉
ISO 15118 certificate management	—	—
Diagnostics	✓	✓
Display message	—	—

- ✓ Follows OCPP specifications
- ⛉ Using Alfen-specific messages and/or license keys
- — Not implemented

Alfen specific OCPP 1.6/2.0.1 performance parameters

Meter value interval request	900
Heartbeat interval	30
Maximum number of data fields per message	9
Authorization of charge cards	
Size of list	800
Size of list transfer	50
Smart Charging Specifications	
Charging profiles	45
Periods in one charging profile	100
Maximum Stack level of charging profiles	15

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Standard and Selectable Settings ex Works

Authorization	Plug & Charge RFID * (Pro-line or selected S-line models only)
Maximum charging current	16 A 32 A *
Smart Charging	Off Active Load Balancing * Smart Charging Network *
Own logo in display (Pro-line models only)	Off (Alfen logo) On (your own logo) *
Languages supported (Pro-line models only)	English, Dutch, German, French, Spanish, Portuguese, Italian, Romanian, Danish, Norwegian, Swedish, Finnish, Polish, Czech, Hungarian, Islandic, Slovenian, Slovak, Latvian
User availability if temporarily off line	Accept all RFID passes Only accept locally registered RFID cards Charging not possible
Response if plug is released on vehicle side	Stop transactions and release the plug Pause charging until charging cable plugged back in
Selected management system	Stand alone ICU Connect * Other options *
Network communication options *	2G: GPRS (Pro-line or selected S-line models only) 4G: LTE-M (Pro-line or selected S-line models only) UTP/LAN Autodetect

The settings marked with a * may result in additional costs when purchasing your charging station. The default settings are always mentioned first. For more information about the options, please contact your sales representative.

Accessories

Product variant	**Article no.**
General accessories for Eve Single	
Eve Single pole	803873036-ICU
Dimensions (H x W x D)	Pole: 1,180 x 60 x 120 mm (baseplate: 300 x 200 mm) Backplate: 335 x 196 x 3 mm
Material	Stainless steel AISI 304, fine-structure powder coating
Color	RAL 7043 (Traffic Grey B)
Packaging (H x W x D)	1,200 x 340 x 220 mm

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Product variant	Article no.
Weight	11.4 kg
Eve Single Duo-pole	803873037-ICU
Dimensions (H x W x D)	Pole: 1,180 x 60 x 120 mm (baseplate: 300 x 200 mm) Backplate: 335 x 196 x 3 mm
Material	Stainless steel AISI 304, fine-structure powder coating
Color	RAL 7043 (Traffic Grey B)
Packaging (H x W x D)	1,200 x 340 x 220 mm
Weight	11.4 kg
Concrete base	833829300-ICU
Dimensions (H x W x D)	570 x 350 x 220 mm
Weight	42 kg
Metal base	803828601-ICU
Dimensions (H x W x D)	598 x 204 x 300 mm
Weight	8.2 kg
Packaging (H x W x D)	50 x 295 x 620 mm
Type 2 charging cable, 5 m, 1-phase, up to 32 A (7.4 kW)	203100306-ICU
Type 2 charging cable, 7.5 m, 1-phase, up to 32 A (7.4 kW)	203100303-ICU
Type 2 charging cable, 5 m, 3-phase, up to 32 A (22 kW)	203100304-ICU
Type 2 charging cable, 7.5 m, 3-phase, up to 32 A (22 kW)	203100305-ICU

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