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Product Sheet
Versie 1.0

Smart Charge Controller

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Smart Charge Controller for EV Charging Point

Product overview

The Smart Charge Controller is an electronic device which is used in conjunction with an EV charging station.

It measures the grid current and controls the charge current of the EV charging station based on the station's Dynamic Load Balancing function and a chosen charging mode.

It can control any EV charging station that supports Dynamic Load Balancing based on an Modbus RTU of Modbus TCP/IP current meter.
The Smart Energy Controller can be used for both, single phase and multi phase installations.

Maximum 3 current transformers can be connected to the Smart Charge Controller to measure the grid current. Or as a device option, the P1 output of a connected grid Smart Meter can be used for grid measurements.
Wi-Fi is available to commission the unit and to enable firmware updates when connected to the internet via the home router. The unit is powered by the mains voltage.
The user selects the charging mode via the user interface, which consists of an OLED display and 3 buttons.

Selecting the charging mode by a smartphone app is a roadmap feature.
There are charging modes:
- PV only
- PV + 6 A
- Capacity (4-22kW, in steps of 1 kW)

Specifications

Physical Characteristics

–	Housing	DIN43880, 4 unit
–	Weight	142 gr
–	Dimensions	90 x 72 x 65 mm

Environmental conditions

–	Protection	Class II
–	Overvoltage category	Class II
–	Ambient Temperature	-10ºC ~ 55 ºC
–	Storage Temperature	-20ºC ~ 80º C
–	Operating Humidity	10%-95%RH (Non-Condensing)
–	Storage Humidity	5%-95%RH (Non-Condensing)
–	Pollution Degree	2
–	Altitude	< 2000m
–	Application area	Residential, Indoors in suitable meter cabinet

Power interface

–	Connector	Screw terminal connector for N, L1 ② ③ and functional ground ①
–	Power rating	230V AC mains < 5W

Modbus RTU interface

–	Connector	Screw terminal connector for A, B and Shield ⑫,...14
–	Protocol	Modbus RTU over RS485
–	Max cable length	100 meter
–	Cable location	Indoor + outdoor

Modbus TCP/IP interface

–	Connector	RJ-45 ⑪
–	Protocol	Modbus TCP over Ethernet
–	Max cable length	100 meter
–	Cable location	Indoor + outdoor

Metering Interface

–	Connector	Screw terminal connectors for max 3 Current Transformers ⑤,...10
–	Measuring principle	Current measurement by Current Transformer
–	Measurement range	1A ... 80A (if CT ratio = 2000)
–	CT ratio	Configurable (default = 2000)
–	Input impedance	20 Ohm
–	Accuracy Typically	<5 % at 23 ºC
–	Max Cable length	1 meter

P1 Interface (optional)

–	Connector	RJ-11 ④
–	Protocol	DSMR4 / DSMR5
–	Max cable length	3 meter
–	Cable location	Indoor

GUI interface

–	LCD	OLED ⑮
–	Buttons	3 push buttons ⑯
–	Wi-Fi	WEP64/128, AES, WPA, WPA2, WAP 2.4GH
		AP, STA, AP&STA mode
		Encryption modes IEEE 802.11 b/g/n

Standards and certifications   RED (2014/53/EU)

–	Health & Safety	EN 62311, EN 61010-1: 2010 + A1: 2019
–	EMC	EN 301 489
–	Radio	EN 300 328 - Wi-Fi 2.4 GHz
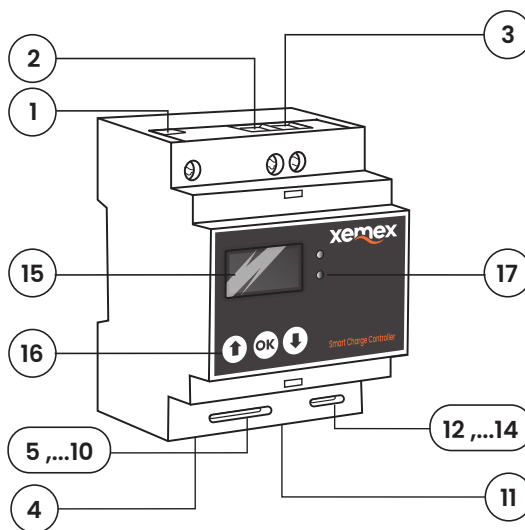
1.	Ground connection
2.	230AC, N connection
3.	230AC, L1 connection
4.	P1 input connection
5,...10	current transformer connection
11.	Modbus TCP/IP connection
12,...14	Modbus RJ485/RTU connection
15.	OLED screen
16.	Control buttons
17.	LED indicators