

CC613-Hxx charge controller

Charge controller for wallboxes



CC613-Hxx charge controller



CC613-Hxx

Device features (depending on the variant)

- Charge controller in accordance with IEC 61851-1 (mode 3 charging)
- Residual direct current monitoring module (external RCD type A required), different cable lengths can be selected
- Integrated emergency opener for actuator control (locking/unlocking) and monitoring of the 12 V supply voltage
- Can be integrated in single- or three-phase systems up to 80 A
- 3 USB interfaces:
- 1 CONFIG interface for local configuration and installation of software updates
- 2 USB host interfaces
- Control Pilot and Proximity Pilot communication (acc. to IEC 61851-1)
- Internal temperature sensor to reduce the charging current depending on the ambient temperature
- ISO 15118 Powerline Communication (PLC) for plug & charge and load management systems
- Ethernet interface

Certifications



Product description

The charge controller is designed for use in compact wallboxes and primarily controls the charging process of an electric vehicle. It monitors the internal hardware of the wallboxes.

Functional description

The charging system consists of an RCD type A and a contactor. These are directly connected to a type 2 socket-outlet, or to a permanently attached cable.

General functions (depending on the variant)

- The charging system can be equipped with a meter. A Modbus meter is required for digital reading of the energy consumption. The Modbus RTU wires are attached directly to the charge controller.
- A 12 V power supply is needed for operation.
- Power flow toward the vehicle is enabled by enabling the contactor via an integrated 230 V control relay in the charge controller.
- For fault current detection in an AC charging system, the charge controller features an integrated residual direct current monitoring module (RDC-M) which uses an externally connected current transformer. With the integrated monitoring of the DC fault current, only an RCD type A is required in the charging system.
- Data exchange between the electric vehicle and the charging system is possible via ISO 15118 compliant Powerline Communication (PLC).
- Data management and control functionality of the charge controller:
 - Termination of the charging process after tripping of the residual current device (RCD) due to a residual current.
 - Detection of critical fault currents by the RCM sensor. For the vehicle owner, this can be an early warning, provided that the charge controller is connected to an energy management system and that it supports this function.



The charge controller with residual direct current monitoring module (RDC-M) only works in combination with the measuring current transformer (to be ordered separately).

Dimension diagram

Dimensions in mm



* Dimensions incl. antenna socket (depending on the variant)

Charging system with type 2 socket-outlet



- A Connection measuring current transformer (CT)
- B 12 V supply, PE, Modbus, CP, PP
- C 2x USB type A (1, 2)
- D Connection Ethernet (ETH1)
- F Configuration interface
- H Weld check, relay for contactor control rated for 230 V/4 A
- J Locking, control relay GPIO, optocoupler input
- L STATUS LED
- m RCD type A
- n Voltage supply DC 12 V
- Measuring current transformer (CT)
- with plug
- p Contactor
- q Type 2 socket-outlet

Terminal assignment

0V	Input 0 V			
+ 12 V	Supply voltage +12 V			
PE	Input PE			
PE	Input PE			
B Mod.	Modbus meter B			
A Mod.	Modbus meter A			
СР	Control Pilot			
PP	Proximity Pilot			
	0V + 12 V PE B Mod. A Mod. CP PP			

H	WA	Weld check input L1		
	23	Relais 23: Switching contact contactor		
	WB	Weld check input N		
	24	Relais 24: Switching contact contactor		
J -	Α	Motor A: Locking motor output negative		
	В	Motor B: Locking motor output positive		
	HS2	Motor HS2: Locking input motor switch		
	HS1	Motor HS1: Locking 12 V output motor switch		

Technical data

Insulation coordination acc. to IEC 60	664-1/IEC 60664-3
Rated voltage	250 V
Overvoltage category	II (within terminal H)
Overvoltage category	III (terminal H and all other terminals)
Rated impulse voltage	6 kV (terminal H and all other terminals)
Rated impulse voltage	2.5 kV (within terminal H)
Double insulation acc. to OVC III between	terminal H and all other terminals
Basic insulation acc. to OVC II	within terminal H
Operating altitude	\leq 2000 m AMSL
Supply voltage (terminal B (0V, +12V	
Nominal voltage	DC 12 V
Operating range of the nominal voltage	DC 11.4 V12.6 V
Max. nominal current	750 mA
Max. nominal current without USB load	400 mA
Max. nominal current with max. USB load	750 mA
Residual direct current monitoring m	odule (RDC-M, terminal A)
Measuring range	100 mA
Response values:	
Residual current / An	DC 6 mA
Response tolerance $I_{\Delta n}$	-500 %
Restart sequence value:	
DC 6 mA	< 3 mA
LED indications	
STATUS (front panel	orange: power on/system not ready for operation
	blue: system is starting
	green: system started, not ready for operation yet
flashing	green: system running, system ready for operation
-	red: system error
Ethernet (terminal D)	off: no Ethernet connection
	steady green: Ethernet connection at 100 Mbit/s
	flashing green: data exchange at 100 Mbit/s
	steady yellow: Ethernet connection at 10 Mbit/s
	flashing yellow: data exchange at 10 Mbit/s
Data interface	
USB host 1 (terminal C1)	USB port type A; USB 2.0 max. 250 mA
USB host 2 (terminal C2)	USB port type A; USB 2.0 max. 250 mA
Ethernet (terminal D)	10/100 Mbit
CONFIG (configuration interface, terminal F)	micro USB port type AB
Modbus meter (terminal B)	9.6 kBit

	5.0 KDIL
Control Pilot (terminal B (CP))	acc. to IEC 61851
Proximity Pilot (terminal B (PP))	acc. to IEC 61851
Inputs	
Weld check (terminal H (WB, WA))	

Input voltage	AC 180 V277 V
Input current	0.61.3 mA
Input PE (terminal B (PE, PE))	

Outputs	
Contact data acc. to IEC 60947-5-1:	
Switching contact for contactor (termina	al H (relay 23, relay 24))
Rated operational voltage U _e	AC 230 V
Rated operational current <i>l</i> e	AC 4 A
Minimum contact rating	50 mA at \geq 10 V (AC)
Environment/EMC	
EMC	see CE declaration
Operating temperature	-30…+70 °C
Classification of climatic conditions acc.	to IEC 60721:
Stationary use (IEC 60721-3-3)	3K23 (except condensation and formation of ice)
Transport (IEC 60721-3-2)	2K11
Long-term storage (IEC 60721-3-1)	1K21
Classification of mechanical conditions a	acc. to IEC 60721:
Stationary use (IEC 60721-3-3)	3M11
Transport (IEC 60721-3-2)	2M4
Long-term storage (IEC 60721-3-1)	1M12
Cable lengths/cable types	
Ethernet (terminal D)	
Connection cable	CAT 6
Max. connection cable length	100 m
Connection type (terminal blocks B and J)	push-wire terminal
Connection specifications:	
rigid /flexible	0.21.5 mm ² (AWG 2416)
flexible with ferrule without plastic sleeve	0.251.5 mm ² (AWG 2416)
flexible with ferrule with plastic sleeve	0.140.75 mm ² (AWG 2618)
Stripping length	10 mm
Max. connection cable length	2 m
Cross-section	\geq 0.5 mm ²
Max. connection cable length (PE)	4 m
Cross-section (PE)	$\geq 1 \mathrm{mm^2}$
Connection type (terminal H)	push-wire terminal
Connection specifications:	
rigid /flexible	0.21.5 mm ² (AWG 2416)
flexible with ferrule without plastic sleeve	0.251.5 mm ² (AWG 2416)
flexible with ferrule with plastic sleeve	0.250.75 mm ² (AWG 2418)
Stripping length	10 mm
Max. connection cable length	2 m
Cross-section	\geq 0.75 mm ²
Other	
0	

Operating mode	continuous operation
Mounting position	front panel orientated, air must pass through cooling slots vertically
Degree of protection	IP20
DIN rail	IEC 60715
Documentation number	D00423
Weight	max. 500 g (depends on variant)

Ordering details

LED	RDC-M	PLC ¹⁾	Meter interface	Ethernet interface	USB host interface	Туре	Art. No.
STATUS		-	-	-	-	CC613-HB	B94060024
		-	Modbus	-	-	CC613-HEM-X2	B94060028

¹⁾ Powerline Communication acc. to ISO/IEC 15118

The charge controller with residual direct current monitoring module (RDC-M) only works in combination with the measuring current transformer (to be ordered separately). Different cable lengths are available.

Accessory

(i)

Description	Art. No.	Plug kit	Content / Quantity	Art. No.
Current transformer W15BS (cable length 1450 mm) ¹⁾ Current transformer W15BS-02 (cable length 180 mm) ¹⁾	B98080065 B98080067	Plug kit (to be ordered separatly)	3-pole (1 x), 4-pole (1 x), 8-pole (2 x)	B94060129
Current transformer W15BS-03 (cable length 300 mm) ¹⁾	B98080068	Plug kit bulk pack, HB	4-pole (50 x), 8-pole (50 x)	B94060127
¹⁷ Internal diameter: 15 mm		Plug kit bulk pack, HEM-X2	4-pole (50 x), 8-pole (100 x)	B94060126

8-pole (100 x)



Bender GmbH & Co. KG

PO Box 1161 • 35301 Grünberg • Germany Londorfer Strasse 65 • 35305 Grünberg • Germany Tel.: +49 6401 807-0 • Fax: +49 6401 807-259 E-Mail: info@bender.de • www.bender.de

