Tender text Bender CC613 charge controller

Charge controller for use in electric vehicles charging stations, wallboxes or street light charging points according to IEC 61851-1 (charging mode 3).

Article numbers for each variant/type:

CC613-ELM4PR: B94060026
- Powerline Communication ISO 15118, 4G modem, Ethernet interface, dynamic load management (DLM), OCPP 1.5 & 1.6 (JSON & SOAP) compatibility, 6 mA DC fault current detection/monitoring, Modbus meter interface, user interface, emergency opener.

CC613-ELPR: B94060027
- Powerline Communication ISO 15118, Ethernet interface, dynamic load management (DLM), OCPP 1.5 & 1.6 (JSON & SOAP) compatibility, 6 mA DC fault current detection/monitoring, Modbus meter interface, user interface, emergency opener.

CC613-ELM4PR-M: B94060020
- Powerline Communication ISO 15118, 4G modem, Ethernet interface, dynamic load management (DLM), OCPP 1.5 & 1.6 (JSON & SOAP) compatibility, 6 mA DC fault current detection/monitoring, Modbus meter interface, user interface, emergency opener, external Modbus interface.

CC613-ELPR-M: B94060021
- Powerline Communication ISO 15118, Ethernet interface, dynamic load management (DLM), OCPP 1.5 & 1.6 (JSON & SOAP) compatibility, 6 mA DC fault current detection/monitoring, Modbus meter interface, user interface, emergency opener, external Modbus interface.

The charge controller is supposed to enable the simple and cost-optimised set-up of a single charging station or a networked charging infrastructure with several charging points. Furthermore, it should comply with the IEC 61851-1 standard and thus support charging mode 3 (AC charging). Both application scenarios (a charging cable permanently installed at the charging station as well as a type 2 charging socket) should also be supported by the charge controller. This enables the charge controller to provide the Control Pilot and Proximity Pilot (CP & PP) functionalities.

Master/slave communication is required so that the charge controller can enable the establishment of an infrastructure. Smart grid capability should also be provided through OCPP 1.5 & 1.6 (JSON & SOAP) transmission using an integrated 4G modem. The connection to backend and roaming platforms of various providers (e.g. Plugsurfing and Hubject) is to be ensured by integration tests.

Integrated Powerline Communication (PLC) according to ISO 15118 should enable the charging station to implement plug & charge and bidirectional communication with the vehicle. The charge controller is thus intended to serve as the basis for intelligent connection to energy management systems (EMS).

When setting up a local charging infrastructure, dynamic load management (DLM) is required to ensure that the available energy is distributed highly dynamically, efficiently and effectively among up to 250 charging points so that the common supply line of the infrastructure is not overloaded. Various charging profiles should be available for this purpose. In addition, the charge controller should be able to adjust the maximum charging current depending on the ambient temperature with the aid of an integrated temperature sensor. This function is intended to protect the system from overheating due to self-heating. To authorise charging station users, an interface to an RFID card reader is required. The charge controller should support at least the MIFARE Classic standard. Future software updates of the RFID algorithms are intended to support and take into account developments with regard to data security.

Furthermore, in addition to the authorisation via RFID, authentication and authorisation at the charging point should also be possible via a remote start of the backend, e.g. via a mobile app or plug & charge according to ISO 15118. Free charging without authorisation should also be configurable.

It should be possible to install a new firmware version on the charge controller via the Internet so that normative changes can be adjusted in the software. Via regular software updates, the operator of the charging point should be able to extend the charge controller with general functionalities or implement new DLM functions. In general, remote control/maintenance should be possible.

The charge controller should have integrated residual current sensors for 6 mA DC residual current detection, so that the use of an RCD type A in the supply line of the charge point is sufficient in normative terms. By using a measuring current transformer (required accessory), the charge controller is supposed to react even to the smallest residual currents in order to be able to indicate deterioration of the charging point or the vehicle at an early stage. The measured values of the AC and DC residual current are to be transmitted by the charge controller to a backend for long-term monitoring. If the DC residual current limit is exceeded, the charge controller should deliberately terminate the charging process in order to avoid "blinding" of the RCD type A (IEC 62955).

The safety of a charging point user is to be further increased by continuously monitoring the PE connection to the charge controller. A "Weld Check" function integrated in the charge controller is intended to detect "sticking" or "welding" of the power contactor. In addition, a universal charging plug/actuator control is to be provided to support various type 2 socket manufacturers. The charge controller should also be able to release the charging plug by means of an integrated emergency opener in the event of a power failure.

The charge controller should have a separate relay which can control the contactor for power release of the charging point directly and without additional hardware components. The rated values for this output are to be defined as follows: 230 V/4 A. The controller should also provide the functionality of controlling an additional standard household SCHUKO socket outlet.

For easy and efficient setup of a networked charging infrastructure, an integrated Ethernet interface is necessary. The charge controller should also offer a USB interface for local configuration and two additional USB host interfaces for peripheral expansion with e.g. USB-WiFi adapters. It should also be possible to enable master/slave hardware configuration via the USB interfaces. Alternatively, the charge controller should have an external, galvanically separated Modbus interface (RTU) with which the controller can be controlled, e.g. via an energy management system, independently of a backend connection.

A Modbus meter interface that allows the use of various Modbus meters from different manufacturers is also required. Compatibility with other Modbus meters should be ensured within the scope of software updates.

Technical data:
Dimensions in mm (L x W x H): 112.3 x 99 x 23.5
Nominal voltage: DC 12 V (11.4 V…12.6 V)
Nominal current: 750 mA
Measuring range RDC-MD: 100 mA
SIM card slot: micro SIM
Operating temperature: -30…+70 °C
Degree of protection: IP20

Interface:
- Integrated web server
- Ethernet interface
- 3 separate USB interfaces (1x USB-CONFIG, 2x USB-Host)
- 230 V relay to control the power contactor
- An additional digital input and an additional digital output
- 1 meter interface (Modbus TCP & RTU)
- 1 actuator control for plug locking

Accessories:
- B94060110, RFID110-L1 with LEDs and RJ45 cable (length 500 mm)
- B94060114, RFID114 with RJ45 cable (length 500 mm)
- B98080065, measuring current transformer*) W15BS (cable length 1500 mm)
- B98080067, measuring current transformer*) W15BS-02 (cable length 180 mm)
- B98080068, measuring current transformer*) W15BS-03 (cable length 320 mm)
- B94060120, DPM2x16FP (display module)

* The internal diameter of the measuring current transformer is 15 mm.

Manufacturer:
Bender GmbH & Co. KG
Londorfer Straße 65
35305 Grünberg

Product: Bender CC613 or equivalent
Article: CC613 (please specify variant/type)

Selected type: '_____'
Unit: piece