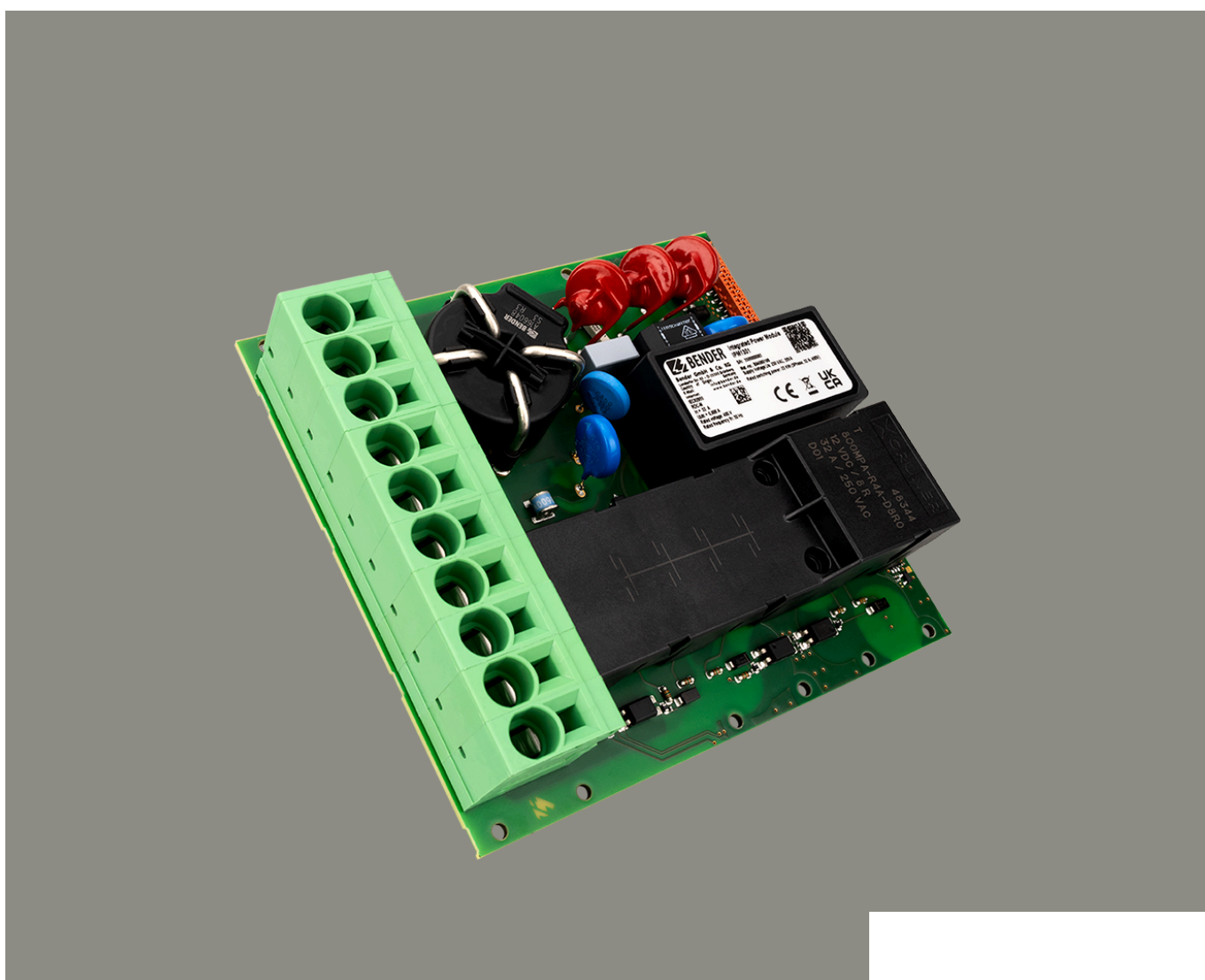
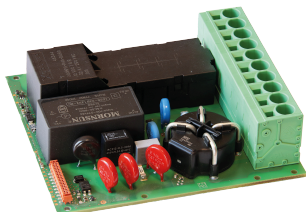

IPM1300

Integrated power module for charge controllers






Device features

- 22 kW power relay
- Integrated residual current transformer for DC fault current monitoring
- Surge Protection Device (SPD)
- Integrated DC voltage supply
- Integrated temperature sensors
- 20 pole flat ribbon cable connector for connection to the charge controller by using a flat ribbon cable
- PE monitoring

Intended use

The IPM1300 integrated power module, referred to as power module in the following, is a component for the set-up of Mode 3 charging stations for electric vehicles (EV). It is intended exclusively for use with Bender charge controllers as an accessory. Any other use than that described in this manual is regarded as improper.

This document is to be used together with the manual D00520 for the following charge controllers:

Type	Part No.	Link to manual
ICC1314-Connect-Plus-G1	B94060030	
ICC1314- Companion-G1	B94060031	

Functional description

The power module is an assembly that expands the functional range of the charge controller. The assembly combines many individual components of a Mode 3 charging unit.

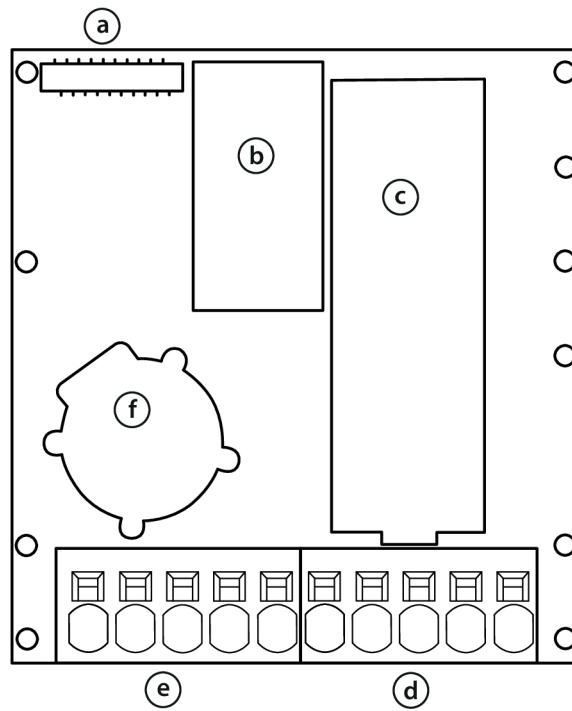
A connection to the charge controller via a 20 pole flat band cable, enables the power module to combine important components of an AC charging system that are required by standards according to IEC 61851-1.

The integrated monitoring of the DC residual current means that an RCD type A in the charging system is sufficient.

General functions

- The IPM1300 contains an integrated DC voltage supply. It is supplied by the AC network connection. The ICC1314 charge controller is supplied with power via the flat band cable. No separate voltage supply is required.
- The device can be used for charging systems with up to 22 kW of charging capacity. The charge controller controls the charging process in the charging system and thereby the main relay of the power module.
- The signal of the integrated residual current transformer is evaluated by the charge controller. The measuring current transformer and charge controller together form a 6 mA DC residual current detecting device according to IEC 62955. (Reference to chapter "DC residual current monitoring module (RDC-M)" in the ICC1314 manual)
- The residual current transformer is connected in such a way that monitoring of the PE connection in the direction of the infrastructure is possible. No additional wiring is required on the charge controller.
- To monitor the 3-phase system, the power module provides the charge controller with information about faults in the rotating field. Further evaluation takes place in the charge controller.
- The device supplements the charge controller with additional temperature sensors for recording the current PCB temperature. Based on these, the charge controller can adjust the charge current depending on the temperature.
- The power module supplements the charge controller with a three-phase switching element. It is activated by a control signal from the charge controller.
- A normatively required monitoring of the Weld Check is integrated in the power module. The evaluation takes place in the charge controller.

View of device

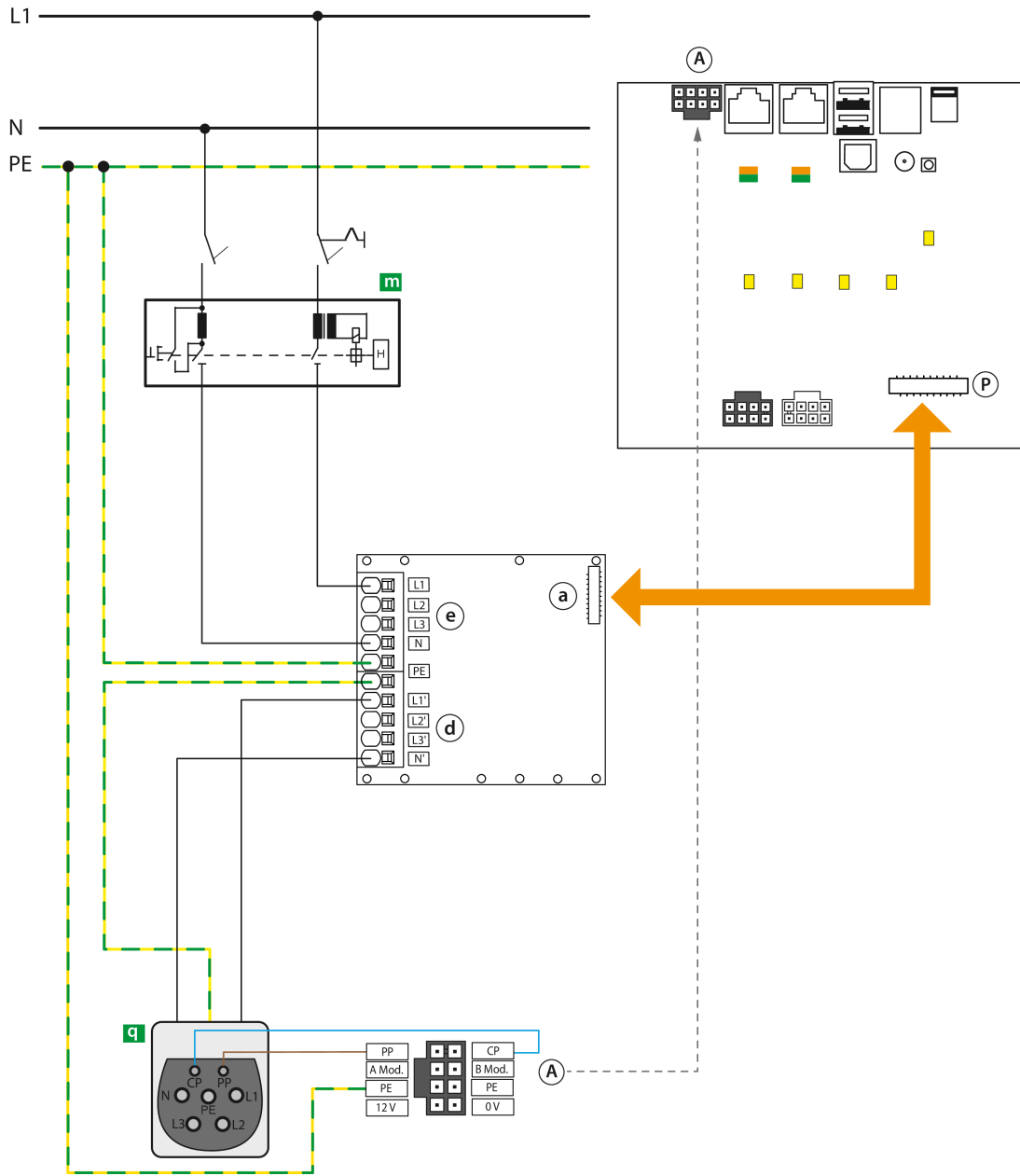


- a Charge controller connection, 20 pole
- b 12 V power supply unit
- c Main relay
- d Connection, type 2 connector
- e AC network connection
- f Measuring current transformer

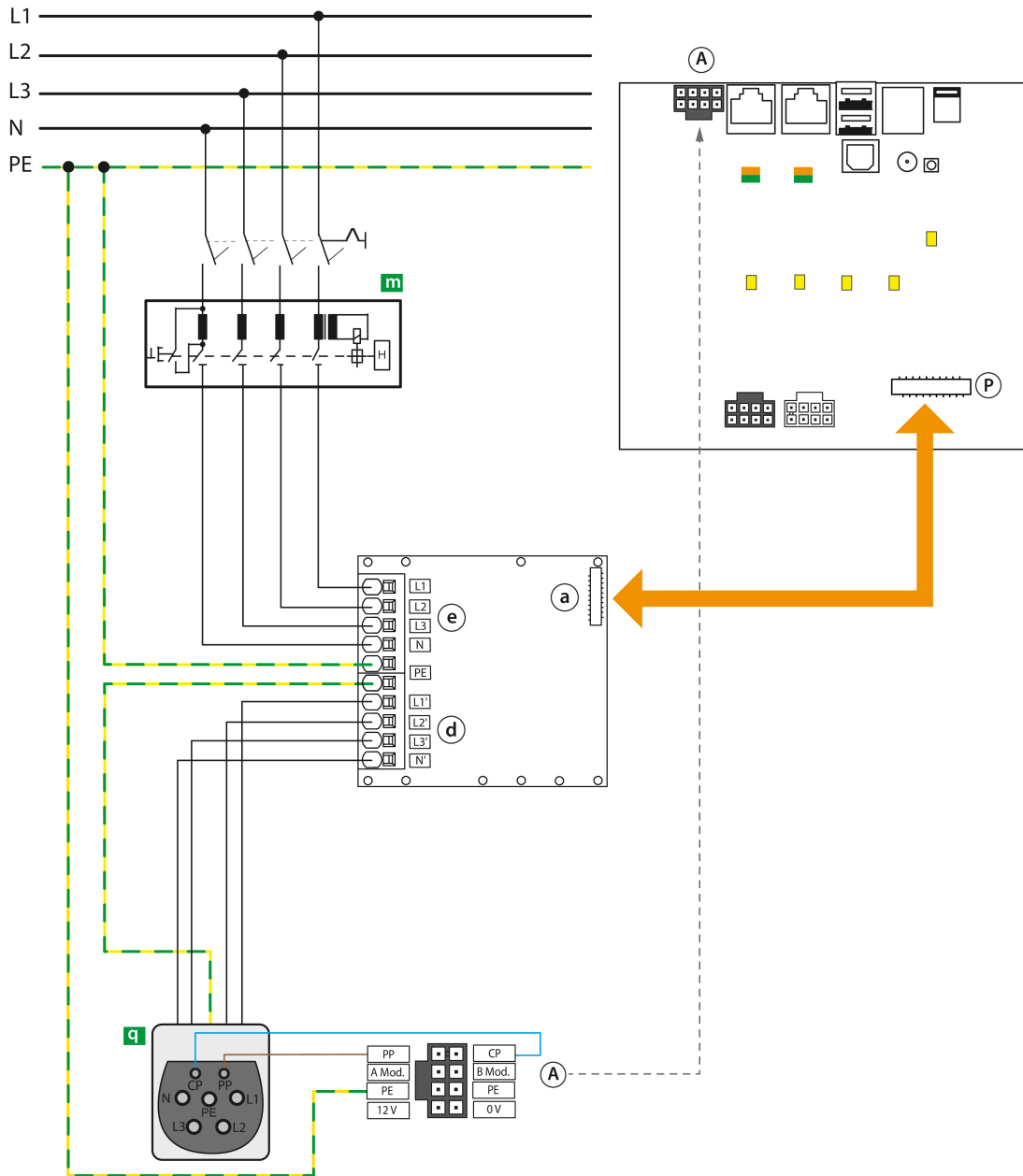
Connection type 2 plug

The following wiring diagrams illustrate the wiring options of the power module to the ICC1314 charge controller.

Single phase connection



Three phase connection



Legend for both connection options

A*	12 V, PE, Modbus meter, CP, PP (Molex Nano-Fit 105310-3508)	d	Connection type 2 connector
P*	Connection integrated power module (IPM) 20-pole	e	AC network connection
		m	RCD Type A
a	Charge controller connection 20 pole	q	Type 2 socket or fixed charging cable

* Refers to ICC1314

Technical Data

Insulation coordination acc. to IEC 60664-1 or IEC 60664-3

Rated voltage	250 V
Overvoltage category (terminal e)	III
Pollution degree	2
Rated impulse voltage	4 kV
Operating altitude	≤ 2000 m above mean sea level

AC network connection, single-phase / three-phase (terminal block e (L1, L2, L3, N, PE))

Nominal voltage	220...230 V / 400 V
Nominal voltage tolerance	198...253 V / 343...400 V
Nominal voltage tolerance*	208...253 V / 361...440 V
Charging current max.	1 x 32 A / 3 x 32 A
Charging power max.	7.3 kW / 22 kW
Frequency	50 Hz
Self-consumption max.	5.5 W

* when using PE monitoring

Connection, type 2-socket AC single-phase / three-phase (terminal block d (L1, L2, L3, N, PE))

Nominal voltage	230 V / 400 V
Charging current max.	1 x 32 A / 3 x 32 A
Charging power max.	7.3 kW / 22 kW
Frequency	50 Hz

Cable lengths/ cable types Terminal blocks e and d

Connection type	Push-wire terminal
Connection data*	
Rigid/ flexible	2.5...16 mm ²
Flexible with ferrule without plastic sleeve	2.5...16 mm ²
Flexible with ferrule with plastic sleeve	2.5...10 mm ²
Stripping length	18 mm
Charging cable length max. (terminal „d“)	< 10 m

* Depends on the power capacity connected to the power module

Flat band cable connection a

Permissible connection plug/ connector system	Micromatch W+P 6990-5-20-1-PPTR
Flat band cable length	< 0.3 m

Environment

Operating temperature	-25...+65 °C
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Classification of climatic conditions acc. to IEC 60721

Stationary use (IEC 60721-3-3)	3K22
Transport (IEC 60721-3-2)	2K11
Long-term storage (IEC 60721-3-1)	1K21

Classification of mechanical conditions acc. to IEC 60721

Stationary use (IEC 60721-3-3)	3M11
Transport (IEC 60721-3-2)	2M4
Long-term storage (IEC 60721-3-1)	1M2

Other

Protection class	IP00
Weight	ca. 470 g

Standards and approvals

The IPM1300 has been developed in compliance with the following standards:

- IEC 62955
- DIN EN IEC 61851-1
- DIN EN IEC 61851-21-2
- IEC 61439-1
- DIN EN 61439-7
- IEC 61439-7



Declarations of conformity

EU Declaration of conformity

The device is in compliance with the following directives:

- Low Voltage Directive (2014/35/EU)
- Directive on Electromagnetic Compatibility (2014/30/EU)

UK Declaration of Conformity

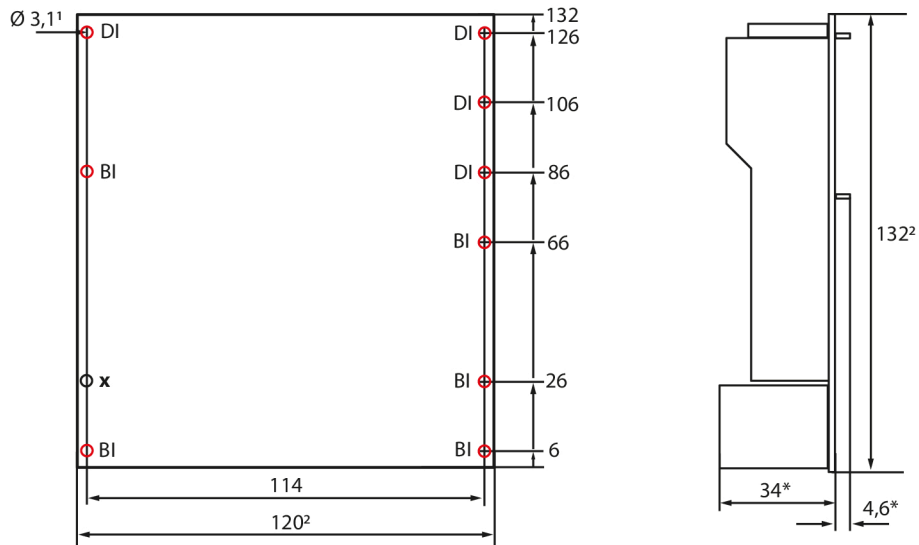
The device is in compliance with the following regulations:

- Electromagnetic Compatibility Regulations 2016
- Electrical Equipment (Safety) Regulations 2016

Ordering information

Type	Part number	Manual no.
IPM1300	B94060198	D00462

Dimension diagram



Dimensions in mm

- * max.
- ¹ ± 0.1 mm
- ² ± 0.2 mm - or all other dimensions according to DIN ISO 2768-f
- x not recommended, only insulated

i Red markings: possible fixing points

i Recommendation for fastening:

- Pan head screws: 4 x M 2.5
- Torque: 0.36 Nm



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Subject to change!
The specified standards take into account the
edition valid until 02.2025 unless otherwise
indicated.