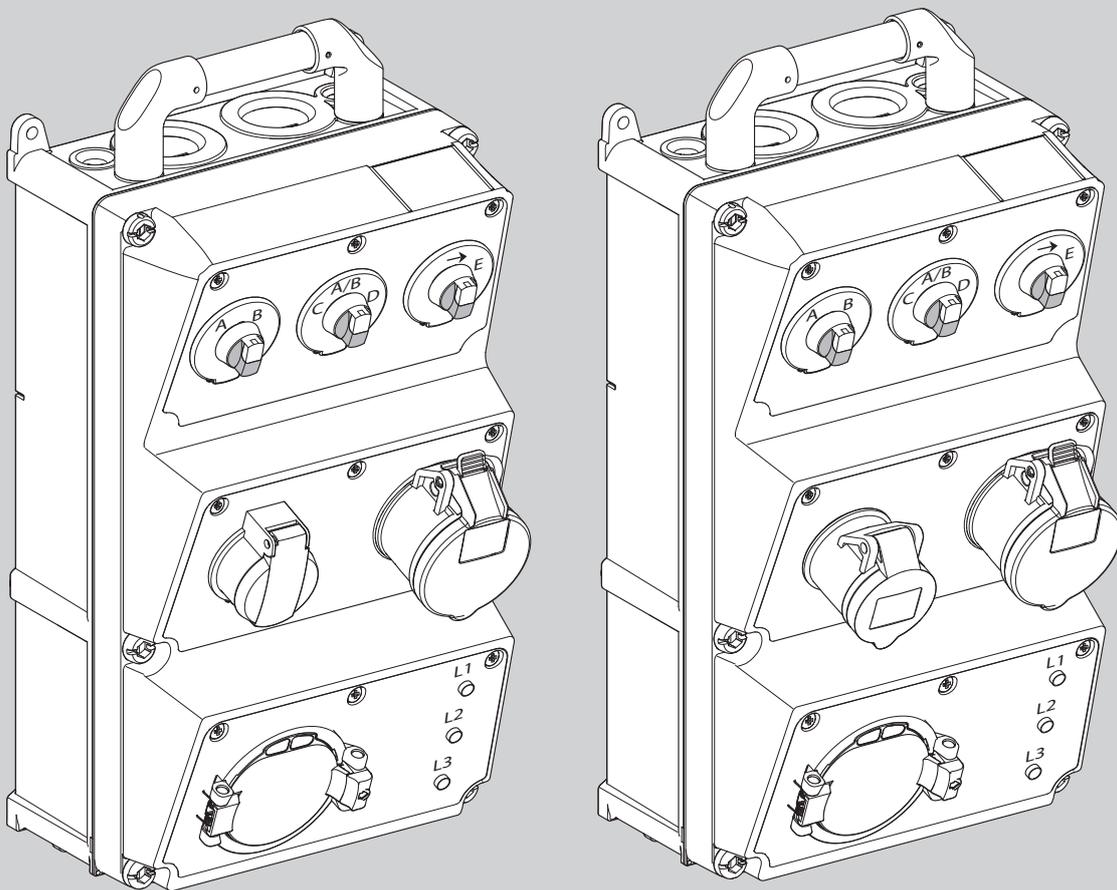


Type F test box, universal test box for charging stations



About this document

- Original manual.
- Part of the product.
- Must be read and kept safe.
- Protected by copyright.
- Duplication, reproduction, and dissemination even in part only with written permission.
- Dimension specifications in millimetres.
- We reserve the right to make technical changes for product enhancement.

Document symbols

 Action request

■ List

✓ Inspection

 Tip

➔ Reference to other sections in this document

 Reference to separate documents that must be observed

Safety instructions

DANGER!

Safety instructions for a hazard with a high risk level!

Non-observance leads immediately to death or serious injury.

WARNING!

Safety instructions for a hazard with a medium risk level!

Non-observance can lead to death or serious injury.

CAUTION!

Safety instructions for a hazard with a low risk level!

Non-observance can lead to slight to moderate injuries.

NOTICE

Safety instructions for a hazard with a low risk level!

Non-observance can lead to damage or destruction of the product.

Table of contents

1.	For your safety.....	4
1.1	Intended use	4
1.2	Target group.....	4
1.3	General safety instructions.....	4
1.4	Service.....	5
2.	Product overview.....	5
2.1	Versions and equipment	5
2.1.1	Type F test box	6
2.1.2	Universal test box.....	6
2.2	Scope of delivery	7
2.3	Technical data.....	7
2.4	Name plate.....	7
3.	Set-up process.....	8
4.	Operation	8
4.1	Charging mode 3	8
4.1.1	Status A	8
4.1.2	Status B.....	9
4.1.3	Status C	9
4.1.4	Status D	9
4.1.5	Status E.....	9
5.	Maintenance and repair.....	10
5.1	Overview of the maintenance and repair work ...	10
5.2	Maintenance tasks.....	10
5.3	Troubleshooting.....	10
6.	Storage and disposal.....	11
6.1	Storage.....	11
6.2	Disposal.....	11
7.	Annexe	11
7.1	Accessories	11
7.2	Glossary.....	11

1. For your safety

1.1 Intended use

The MENNEKES test box simulates the charging of electrical vehicles connected virtually to a charging station.

- Charging according to mode 3 in accordance with IEC 61851-1:2010.
- Plugs and sockets in accordance with IEC 62196.

The test box is used to test MENNEKES charging stations.

Intended use also includes compliance with MENNEKES' terms of installation, operation, and maintenance and repair.

Any other use is considered improper use and is not permitted.

1.2 Target group

Installation, set-up process, maintenance and repairs may only be performed by qualified electricians.

Requirements for qualified electricians:

- Knowledge of general and special safety and accident prevention regulations.
- Knowledge of the relevant electrical regulations (e. g. DIN VDE 0100 Part 600, DIN VDE 0100-722).
- Ability to recognise risks and prevent possible hazards.
- Knowledge of the operation manual.

Using and testing the charging system to ensure it is kept in good working order by the operator.

Requirements for the operator of the charging system:

- Knowledge and safe keeping of the operation manual.
- Knowledge of the relevant accident prevention regulations.
- Knowledge of generally recognised safety, occupational health, and road traffic rules.

1.3 General safety instructions

DANGER!

Risk of death from electric current!

Handling electrical current can lead to hazardous situations. Touching live parts may cause electric shock, burns or death.

☞ Always follow the safety advice and instructions in this document.

Use of the product is prohibited in the following cases:

- If explosive or highly inflammable materials are in the vicinity.
- If the product is in water.
- At ambient temperatures of less than -25 °C or more than 40 °C .
- If the product or individual components are damaged.
- By children and persons who are not able to assess the dangers when handling the product.

MENNEKES is not liable for damages in the cases below.

The warranty for the product and accessories shall be void.

- Non-observance of this operation manual
- Improper use
- Improper handling
- Use of unqualified personnel
- Conversions or changes to the product
- Use of spare parts that were not manufactured or approved by MENNEKES
- Cleaning with high pressure cleaners or sand blasters

Additional safety instructions are included in the relevant sections of the document.

- ➡ "3. Set-up process"
- ➡ "4. Operation"
- ➡ "5. Maintenance and repair"
- ➡ "6. Storage and disposal"

1.4 Service

The product has left the factory in safe and perfect working order.

☞ For complaints concerning the product, contact MENNEKES or your responsible service partner immediately.

➔ Contact details are on the back page.

☞ Have the following information ready:

- Type description/serial number
 - Date of manufacture
 - Reason for complaint
 - Period of use
 - Ambient conditions (temperature, humidity)
- ➔ "2.4 Name plate"

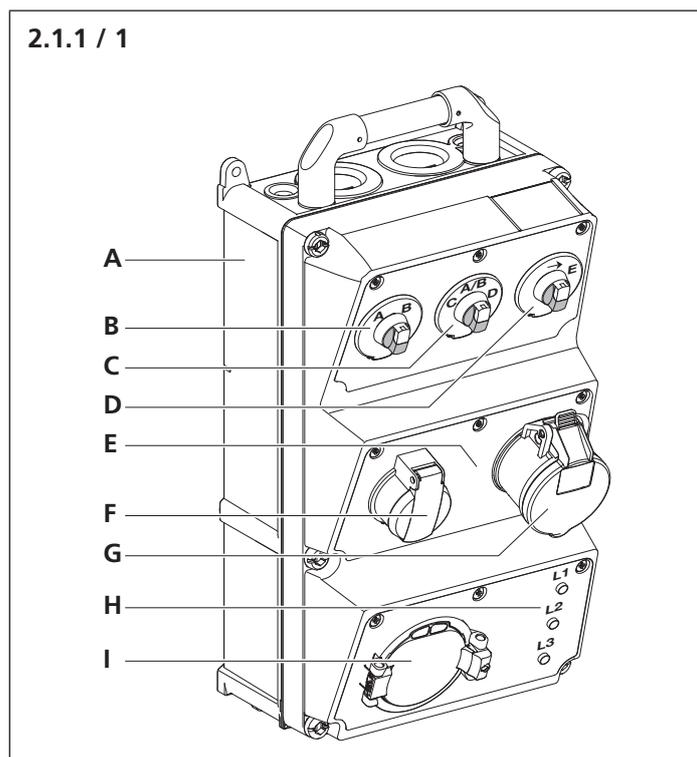
2. Product overview

2.1 Versions and equipment

- Charging procedure simulation on a virtually connected electric vehicle
- Adjustment options for vehicles with gassing or non-gassing batteries
- Simulation of an alternating current load
- Simulation of a three-phase load and control of the rotating field
- Simulation of a defective line
- Test of the residual current protective device using external measurement devices
- Meter test using hookup to external loads
- Displays for blown fuses

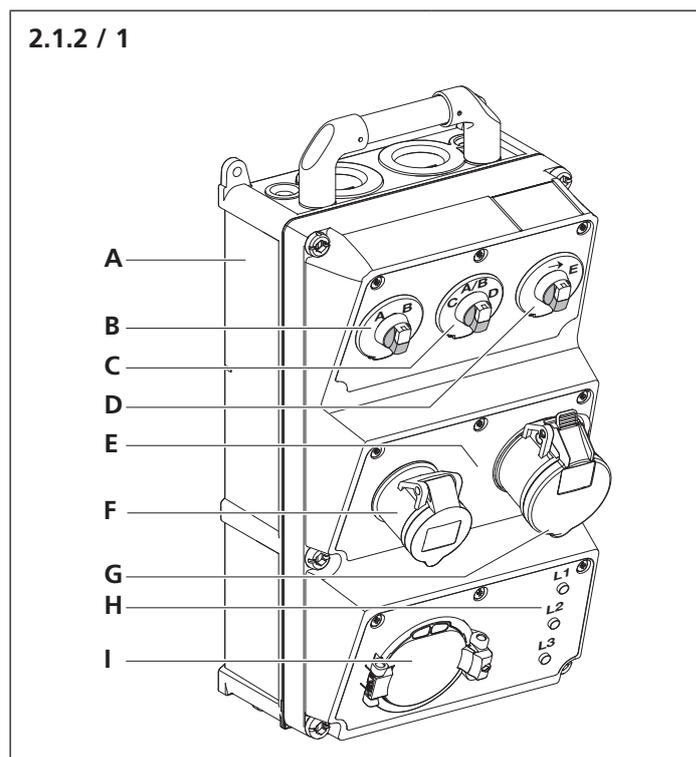
➔ "7.2 Glossary"

2.1.1 Type F test box



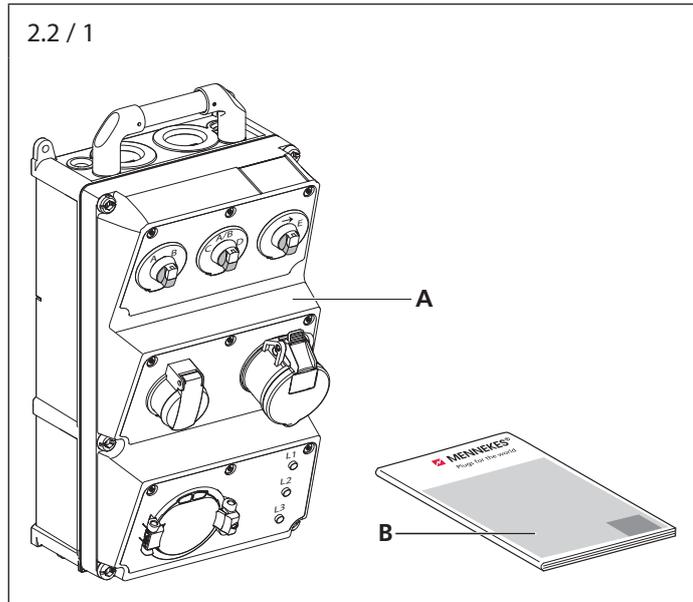
- A Basic enclosure
- B Vehicle switch (status A/B)
- C Ventilation request switch (status C/D)
- D Error message switch (status E)
- E MCB fuse protection (internal)
- F SCHUKO® socket
- G CEE socket
- H Phase control lights (LED)
- G Type 2 socket (mode 3)

2.1.2 Universal test box



- A Basic enclosure
- B Vehicle switch (status A/B)
- C Ventilation request switch (status C/D)
- D Error message switch (status E)
- E MCB fuse protection (internal)
- F Single-phase CEE socket
- G CEE socket
- H Phase control lights (LED)
- G Type 2 socket (mode 3)

2.2 Scope of delivery



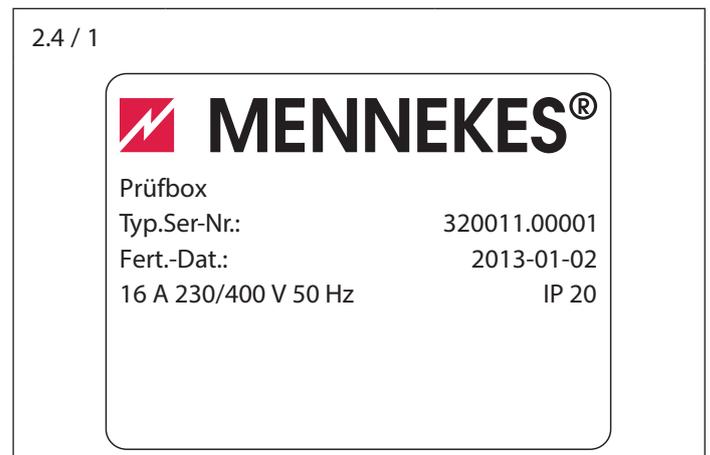
- A Test box
B Operation manual

2.3 Technical data

	Test box Type F	Universal test box
Nominal voltage	230 V AC ±10% 400 V AC ±10%	230 V AC ±10% 400 V AC ±10%
Nominal frequency	50 Hz	50 Hz
Nominal current	16 A	16 A
Maximum back-up fuse	63 A	63 A
Protection class	IP 20	IP 20
Dimensions (H x W x D)	390 x 225 x 165 mm	390 x 225 x 165 mm
Weight	4.0 kg	4.0 kg

2.4 Name plate

The name plate is located on the back side of the device.



Information on the name plate:

- ④ Manufacturer
- ④ Type
- ④ Serial number
- ④ Date of manufacture
- ④ Nominal current
- ④ Nominal voltage
- ④ Nominal frequency
- ④ Protection class

3. Set-up process

Requirements for the operation site

! DANGER!

Risk of death from improper installation!

Non-observance of the ambient conditions can cause dangerous situations when handling current.

☞ Make sure that the requirements at the operation site are always complied with.

- Not in potentially explosive areas (e. g. filling stations).
- Not in flood hazard areas.
- Compliance with the local technical connection conditions and safety rules.
- Max. 95% air humidity (non-condensing).
- Ambient temperature of -25 °C to 40 °C , average temperature over 24 hours $< 35\text{ °C}$.

4. Operation

4.1 Charging mode 3

☞ MENNEKES charging station documentation is to be complied with.

The following tests are possible:

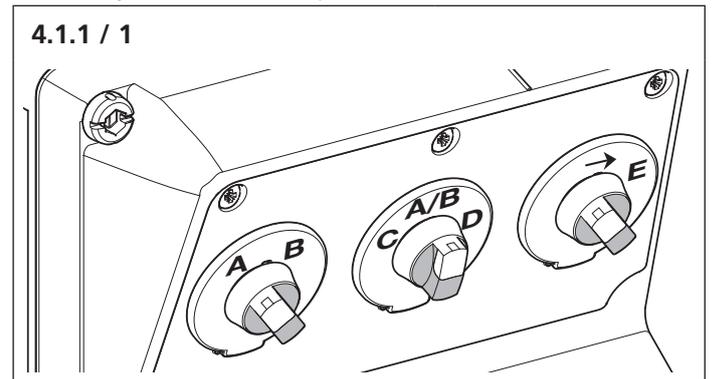
- Charging procedure simulation on a virtually connected electric vehicle.
- Adjustment options for vehicles with gassing or non-gassing batteries.
- Simulation of a defective line.

- ☞ Plug the charging plug fully into the type 2 charging socket on the test box.
- ☞ Connect the charging cable to the MENNEKES charging station.
- ☞ Set the three switches to the vehicle status to be simulated (status A through E).

4.1.1 Status A

The vehicle is not connected.

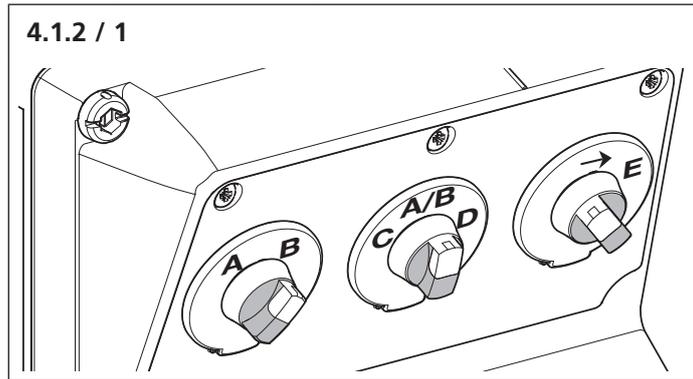
The rotary switch's switch position:



The vehicle is unable to charge.

4.1.2 Status B

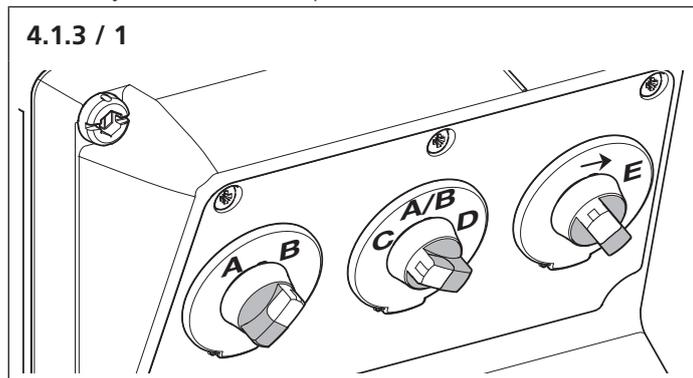
The vehicle is connected, but is not ready to charge.
The rotary switch's switch position:



The vehicle is unable to charge.
The interlocks the charging connector.

4.1.3 Status C

The vehicle is connected to a non-gassing battery and is ready to charge. Ventilation is not necessary.
The rotary switch's switch position:

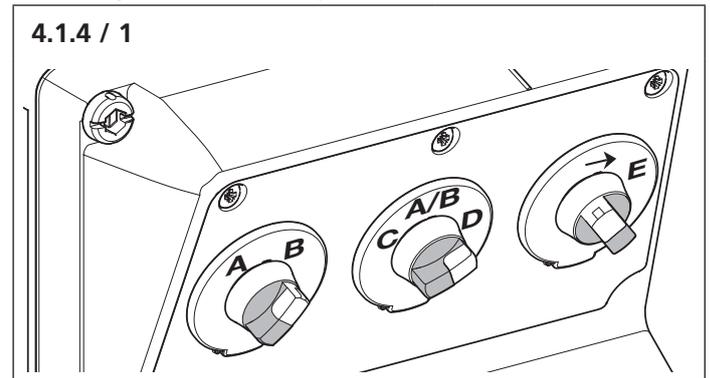


The vehicle is able to charge.
LED L1 lights with single-phase charging cable.
All three LEDs (L1, L2, and L3) light with three-phase charging cable.

4.1.4 Status D

The vehicle is connected to a gassing battery and is ready to charge. Ventilation is required.

The rotary switch's switch position:



The vehicle is able to charge if the charging site is sufficiently well ventilated. The charging station's ventilation requirement must be properly set.

 MENNEKES charging station documentation is to be complied with.

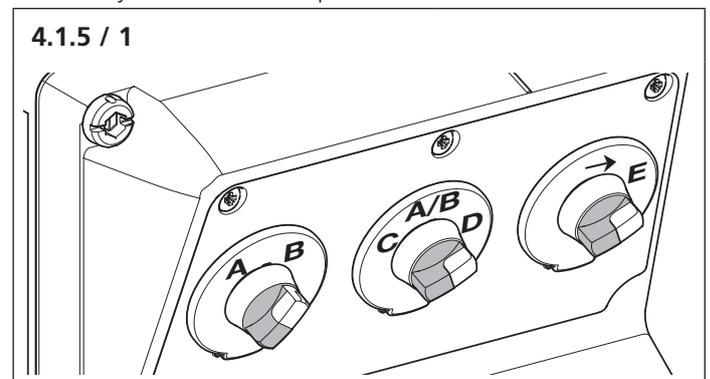
LED L1 lights with single-phase charging cable.

All three LEDs (L1, L2, and L3) light with three-phase charging cable.

4.1.5 Status E

Short circuit in the vehicle and/or in the charging cable.

The rotary switch's switch position:



The vehicle is unable to charge.

After completing the tests:

 Remove the charging cable.

5. Maintenance and repair

5.1 Overview of the maintenance and repair work

Maintenance and repair work includes:

- Regular maintenance.
- ➔ "5.2 Maintenance tasks"

- Testing and elimination of faults
- ➔ "5.3 Troubleshooting"

5.2 Maintenance tasks

Only use of spare parts that were manufactured or approved by MENNEKES is permitted.

- ➔ "7.1 Accessories"

The MENNEKES test box is low maintenance.

5.3 Troubleshooting

Error code	Description
	<ul style="list-style-type: none"> ■ Cause of malfunction ☞ Troubleshooting
1	<p><i>Test box does not respond.</i></p> <ul style="list-style-type: none"> ■ The charging system's voltage supply is missing. ☞ Check the voltage supply. ☞ Check the back-up fuse in the enclosure's interior. ☞ Switch on the back-up fuse. ■ Charging connector is not plugged in correctly. ☞ Check the plug connection. ■ Incorrect vehicle status is set. ☞ Check the status A to E switch positions. ■ The charging cable's amperage is wrong. ☞ Use a suitable charging cable.
2	<p><i>Phase-control lights do not illuminate.</i></p> <ul style="list-style-type: none"> ■ The charging system's voltage supply is missing. ☞ Check the voltage supply. ☞ Check the back-up fuse in the enclosure's interior. ☞ Switch on the back-up fuse. ■ Charging connector is not plugged in correctly. ☞ Check the plug connection. ■ Incorrect vehicle status is set. ☞ Check the status A to E switch positions. ■ LED is defective. ☞ Check the LED. ■ The charging cable's amperage is wrong. ☞ Use a suitable charging cable.

☞ Contact MENNEKES or your local dealer if problems continue to occur after testing.

➔ Contact details are on the back page.

6. Storage and disposal

6.1 Storage

Store in dry and temperature-controlled rooms.
 Storage temperature is between 0 °C and 40 °C.

6.2 Disposal

Old devices must be disposed of according to national and regional laws and guidelines.
 Ecological considerations must be observed.

Old devices and batteries must not be disposed of with household waste!

- ☞ Dispose of old devices via a collection point for electronic waste or through a specialist outlet.
- ☞ Dispose of old batteries in a battery recycling bin or through a specialist outlet.
- ☞ Dispose of packaging material in the collection bin for cardboard, paper and plastic.

7. Annexe

7.1 Accessories

Part no.	Description
36113	Mode 3 charging cable, 32 A, 3P+N+PE

7.2 Glossary

LS	<i>Circuit breaker</i>
Mode 3 (IEC 61851)	Charging operating mode for vehicles with communication interface on type 2 charging socket.
Type 2 (IEC 62196-2)	Single and three phase charging couplers with identical plug geometry for charging powers of 3.7 kW to 44 kW AC.



PREMIUM MARKEN Partner 



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