

# PROFITEST H+E EXPERT CHECK

Test Instrument and Function Tester for AC Charging Points per IEC 61851-1,  
VDE 0122-1

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- Unique function tester for AC charging points
- Also for AC charging points with permanently attached cable
- Intuitive operation
- Simple test sequence saves time and money
- Results appear at the display in plain text
- Error display with results for forwarding to service personnel
- Easy fault simulation by simply pressing a key, e.g. normative interruption of PE with indication of tripping time < 100 ms
- Communication evaluation (PWM signal)
- Measuring inputs and earthing contact socket for use in combination with instruments from the PROFITEST MF series or the PROFITEST MASTER IQ series for testing protective devices at charging points (electrical testing)
- USB port for charging the battery



## Applications

The number of charging points that don't function reliably in the long term is also increasing along with steady expansion of the AC charging infrastructure. If the charging process can't be started, malfunctioning of the AC charging point is usually assumed. As a result, the operator confidently seeks the help of a specialist, namely an e-mobility electrician.

Malfunctions can be diagnosed quickly and intuitively in accordance with DIN VDE 0122-1 using the unique PROFITEST H+E EXPERT CHECK function tester for AC charging points.

In addition to function tests, normative testing of the effectiveness of protective measures, i.e. electrical testing and testing of personal protection, can also be executed with an installation tester from the PROFITEST MF series or the PROFITEST MASTER IQ series. You save time and money as a result.

The PROFITEST H+E EXPERT CHECK is the ideal companion for all e-mobility electricians and is used for AC charging points in charging mode 3 with a type 2 socket, or with a permanently installed type 2 cable.

## Features

- Testing of AC charging points in charging mode 3
- Vehicle simulation (CP): simulation of an electric vehicle's charging socket
- Connection to the charging socket or the type 2 plug of an AC charging point
- Cable simulation (PP): testing of 13, 20, 32 and 63 A cables, and testing for "no cable connected"
- Testing of vehicle states A, B and C, phases, tOFF (state E), rotating field and duty cycle, as well as frequency
- Fault simulation: diode test, CP-PE short-circuit (state E) and PE fault (ground fault with display of tripping time)
- PWM signal evaluation (communication): display of positive and negative PWM voltages
- Electrical testing of charging points in combination with instruments from the PROFITEST MF or PROFITEST MASTER IQ series:
  - Continuity of the conductors (low-resistance measurement)
  - Insulation resistance
  - Testing of residual current circuit breakers (RCD/R)
  - Sensor testing, 6 mA RDC-DD/RCMB
  - Fault loop impedance (loop resistance), internal system resistance

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## Technical Data

### Mechanical Design

Housing	240 × 115 × 60 mm
Weight	1180 g
Protection	IP 21
Display	Monochrome

### Ambient Conditions

Operating temperature	-5 ... +45 °C
Storage temperature	-5 ... +60 °C
Relative humidity	Max. 75%, non-condensing, no condensation allowed
Elevation	Max. 2000 m

### Power Supply

Internal rechargeable battery (charging via USB port)	
Type	18650H-2600
Nominal voltage	3.7 V
mAh	2600 mAh
Energy	9.62 Wh
Protective function	PCB/IC protection
Charging current	Max. 1 C
Discharge current	Max. 5.2 A (2 C)
Internal resistance	180 mΩ
Weight	48 g
Dimensions (dia. x L)	18 × 69 mm

### Electrical Safety

Measuring category	CAT III, 300 V
Pollution degree	2
Protection class	II

### Interface and Memory

Interface	Micro USB port (for charging the battery)
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## Characteristic Values

### Test Analysis Standard

AC	DIN EN IEC 61851-1 VDE 0122-1 Electric vehicle conductive charging system – Part 1: General requirements
Measurement of voltage values in all three phases and N	

### Test Parameters

Cables	13 A 20 A 32 A 63 A No cable connected (N.C.)
Vehicle states	State A, state B, state C Phases tOFF (state E) Rotary field Duty cycle Frequency
Fault simulation	Diode test CP-PE short-circuit (state E) PE fault (ground fault) with display of tripping time

### Measuring Connections

Earthing contact socket	Max. 10 A, 230 V <sub>AC</sub> Fuse: T 10 A, 250 V, 20 × 5 mm
Measuring inputs	4 mm L1, L2, L3, N, PE, CP
CP signal output	± 12 V, PWM signal

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## Product Standards

The tester has been manufactured in accordance with the following safety regulations:

IEC 61010-1 EN 61010-1 VDE 0411-1	Safety requirements for electrical equipment for measurement, control and laboratory use – General requirements
EN 60529 VDE 0470, part 1	Test instruments and test procedures Degrees of protection provided by enclosures (IP code)
DIN EN 61326-1 VDE 0843-20-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
DIN EN IEC 61851-1 VDE 0122-1	Electric vehicle conductive charging system – Part 1: General requirements
DIN EN 62196-1 VDE 0623-5-01	Plugs, socket-outlets, vehicle connectors and vehicle inlets – Conductive charging of electric vehicles – Part 1: General requirements

## Scope of Delivery

1	PROFITEST H+E EXPERT CHECK (M525R)
1	Charging cable (micro USB plug)
1	Operating instructions

## Order Information

Description	Article Number
PROFITEST H+E EXPERT CHECK	M525R

Further information regarding accessories can be found:

- in our Measuring Instruments and Testers catalog
- on the Internet at [www.gossenmetrawatt.com](http://www.gossenmetrawatt.com)

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