PROFITEST H+E TECH
Communication Tester Between Electric Charging Station (Inlet) and Vehicle

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- **Complete diagnosis of electric charging stations (Inlet) and vehicles with a single test instrument:**
  – Vehicle states
  – Cable condition
  – Error states
  – PWM signal evaluation
  – Phases and phase sequence
  – Battery level
- **Indication of states by means of easy-to-understand symbols**
- **Easy operation and diagnostics (for persons with basic electro-technical instruction as well)**
- **Compact, battery powered device which is thus suitable for outdoor use**
- **Displays communication between the charging station and the electric vehicle in real-time**

Applications

The test instrument is intended for examining the functional performance of charging stations for electric vehicles with type 2 connector socket (mode 3 charging).

The test instrument is connected between the charging station and the electric vehicle to this end, in order to document communication between the two. If the charging process doesn't start, the source of error (charging station or electric vehicle) can be quickly pinpointed.

The range of applications includes R&D and service.

Features

- Connection option for electric vehicles: type II OEM plug
- Compact case, ideal for service calls
- Large display, for which background illumination can be activated
- Selectable user interface language – the following languages are available: D, GB, F, E, I, P
- Power supply via two 9 V (rechargeable) block batteries or power pack
- USB data interface for firmware updates
- Due to safety reasons the device will not operate at charging stations with fix mounted charging cables.

Battery Charging Status – Power Saving Circuit

The battery charging status is indicated by means of 6 progressive segments.

The device is switched off automatically if none of the rotary switches are activated for a period of 10 minutes. Display illumination is deactivated automatically after 30 seconds.

Diagnostics Information

Measuring Parameter	Setting
Phase L1, L2, L3	On/off
Phase sequence	CW / CCW
Resultant charging current (via evaluation of the duty cycle)	A
PWM signal	
Frequency	Hz (set = 1 kHz)
Duty cycle (with PWM)	%
Upper voltage	3, 6, 9, 12 V
Lower voltage	– 12 V

Status Visualization

Displayable Vehicle Statuses (CP)	
No vehicle connected	●
Vehicle connected	●
Vehicle ready for charging without ventilation	●
Vehicle ready for charging with ventilation	●
Cable Type (PP)	
No cable	—
13 A cable	—
20 A cable	●
32 A cable	—
63 A cable	—

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Technical Data

Input voltage	400 V (3-phase)
Frequency	50 Hz
Test consumer power	max. 2.9 kVA

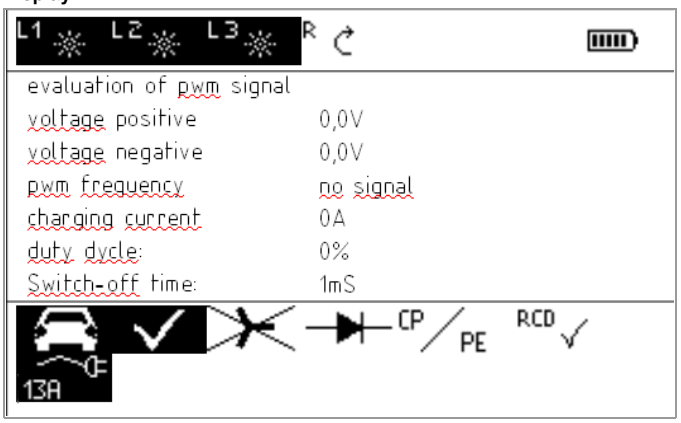
Electrical Safety

Protection class	I
Nominal voltage	400 V DC
Test voltage	500 V DC
Measuring category	CAT III, 300 V
Pollution degree	2
Fuses	None

Mechanical Design

Dimensions	W x L x H = 200 x 240 x 115 mm
Weight	3.65 kg
Protection	IP 21

Display



Display	Multiple display with dot matrix, 240 x 128 pixels, diagonal: 10.7 cm (4.2")

Abbreviations and Their Meanings

Symbol	Meaning
CP	Displayable vehicle statuses
PP	Cable type
CP-PE	Resistance coding for enabling charging
PP-PE	Resistance coding for maximum charging current relative to conductor cross-section or cable type
PWM signal	Pulse-width modulated signal for communication with the vehicle via the CP cable
RCD	Residual current circuit breaker

Ambient Conditions

Operating temperature	- 10 °C ... +45 °C
Storage temperature	- 25 °C ... +60 °C
Relative humidity	max. 80%, condensation is ruled out

Applicable Regulations and Standards

IEC 61010-1/EN 61010-1/ VDE 0411-1	Safety requirements for electrical equipment for measurement, control and laboratory use – General requirements
IEC 61851-1 DIN EN 61851-1	Electric vehicle conductive charging system – Part 1: General requirements
DIN EN 61326-1 VDE 0843-20-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements
EN 60529 VDE 0470-1	Test instruments and test procedures Degrees of protection provided by enclosures (IP code)

Scope of Delivery

1 PROFITEST H+E TECH test instrument
2 9 V block batteries
1 12 V power pack
1 Set of operating instructions

Order Information

Designation	Type	Article Number
Communication tester between the charging station and the vehicle (connector socket and type 2 plug)	PROFITEST H+E TECH	M525B