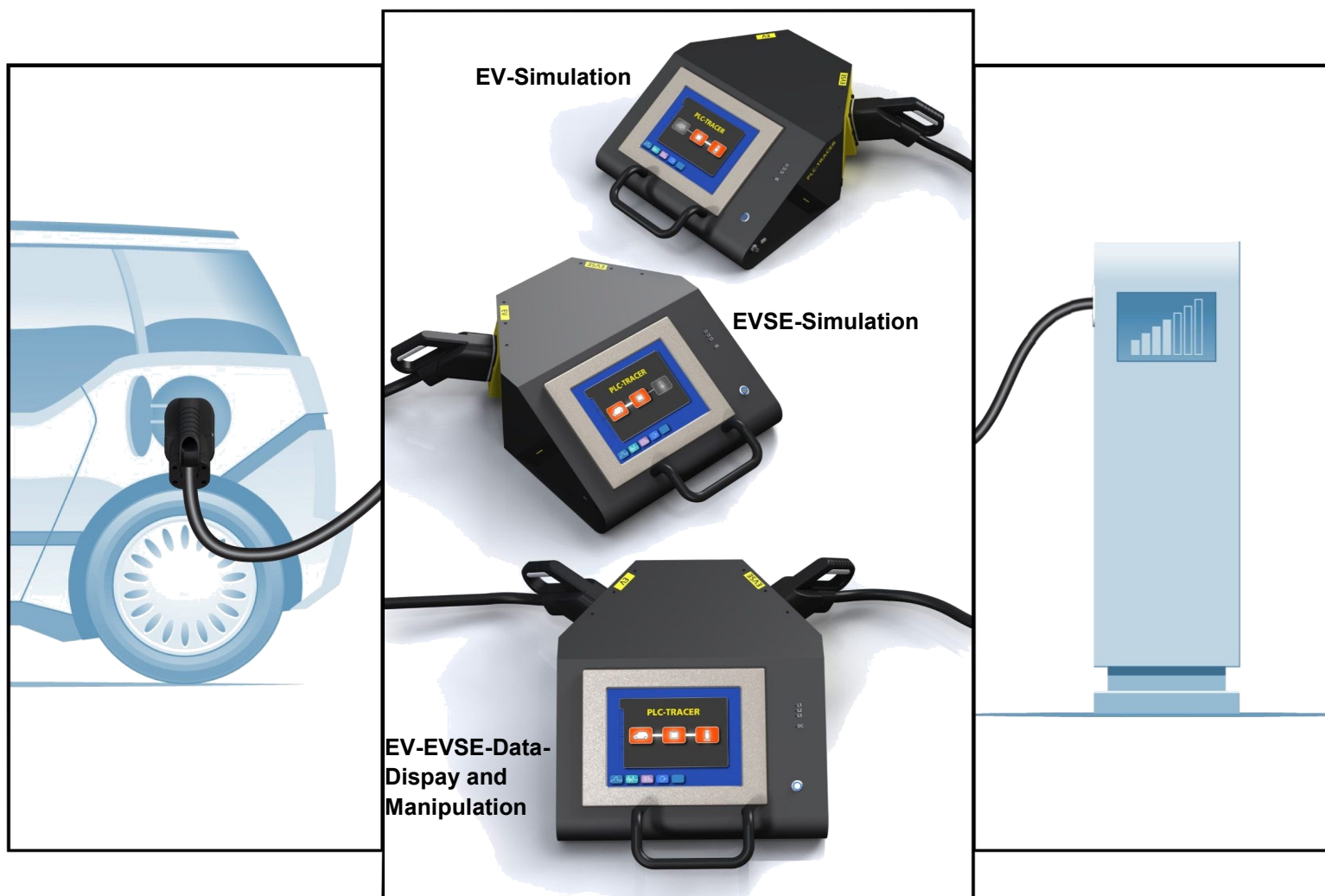


# PLC-Tracer<sup>®</sup> for monitoring, simulating and manipulating data traffic between charging stations (EVSE) and electric vehicles



**EV-Simulation** — Replication an electric vehicle at data level for testing charging stations

**EVSE-Simulation** — Replication a charging station at data level for testing of electric vehicles

**EV-EVSE-Data-Display** — Manipulation of PLC data traffic between electric vehicles and charging stations

**EV-EVSE-Data-Manipulation** — Allows for PLC data manipulation

**The PLC-tracer provides the solution for monitoring common standards of data traffic between electric vehicles and charging devices.**

Linked between electric vehicles and charging devices, the PLC tracer allows for interpretation of PLC data and the examination of inconsistencies. The data is then being stored as a .pcap, .pcapng or .csv file.

At data level a charging device or an electric vehicle can be simulated.

To determine the response to non-standard EV or EVSE-parameter this parameters can be set outside the norm, deliberately. Incorrect parameters of the charging device



**FEATURES**

**PLC-test according to ISO 15118: 2013 and DIN 70121: 2012**

CompleteV2G-Cycle | SECC | SLAC | IPv6 protocols

**PWM**

- EVSE PWM frequency measurement
- EVSE PWM duty cycle measurement
- EV PWM amplitude measurement
- Additional analysis of the PWM signal via integrated oscilloscope
- PWM signals by lead (bridge mode)
- PWM signals manipulation (Developer mode)

**Case**

- Charging plug IEC 62196 Combo Type 2 (AC and DC)
- Displays charging voltage L1, L2, L3 and DC
- Compact design make it easy to transport
- Controlling of the PLC © tracer with a built-in PC with LCD touch screen
- Storage of all logged data as a PCAP file (including PWM measurement)
- Measuring voltage connection DC +, DC-, L1, L2, L3, N, PE (optional)

(e.g. false PWM pulse width) or the electric vehicle (e.g. wrong CP-resistance) can be corrected during operation in order to test other components of the system.

Via an integrated oscilloscope it is possible to examine the CP signal.

The PLC-tracer is used in research and development of considerable automotive companies, charging station manufacturers and servicepoints.

Technical Data	
<b>Device Power Supply</b>	90 - 260 VAC and 12 V DC 3 A
<b>Power consumption</b>	approx. 30 W
<b>Operating temperature</b>	0 to 50 °C
<b>Storage temperature</b>	-10 to 60 °C
<b>Relative Humidity</b>	15% - 70% (non-condensing)
<b>Scope of delivery</b>	Charger Type 2 Standard AC or DC type 2 COMBO (optional) Keyboard, power cable
<b>Display</b>	LCD, LED, 12,1", Touch sensitive, 1024 x 768 Pixel
<b>Mass storage</b>	SSD-120 GByte / 2 GByte RAM
<b>Cooling</b>	Passiv
<b>Operation system</b>	Windows 7 Professional
<b>Standardize</b>	ISO/IEC 15118, ISO/IEC 61851, IEC 62196, DIN 70121
<b>PWM/PLC-Module</b>	2 x hse-electronics EVC Kit 2 x QCA 7000 Chipset PWM Measuring range: -30 to +30 V PWM amplitude: 3-12 V adjustable PWM analysis: frequency and duty cycle PWM generator f = 900 Hz-1100 Hz, ti / tp = 0-100%
<b>Software</b>	PWM control and analysis software V2G-SLAC-interpreter Oscilloscope software (bandwidth: 35 MHz)
<b>Case connectors</b>	1 x VGA for external monitor Each 1 x BNC CP connection for EVSE and EV Each 1 x 2 Combo Inlet for EVSE and EV 1 x USB 2.0 1 x 12 V DC operating voltage (automobile power voltage) 1 x 230 V AC Operating Voltage
<b>Charging current connectors</b>	
<b>DC-DC+</b>	Internally, each 35 mm <sup>2</sup> , 500 V, 125 A
<b>N,L1,L2,L3</b>	Internally, each with 6 mm <sup>2</sup> , 250 V, 32 A
<b>CP,PP</b>	Internally, each 0.75 mm <sup>2</sup>
<b>PE</b>	Internal 16 mm <sup>2</sup>
<b>Case dimension</b>	w: 50 cm; h: 23 cm; l: 63 cm
<b>Weight</b>	16 Kg
<b>Case-Material</b>	Aluminium

