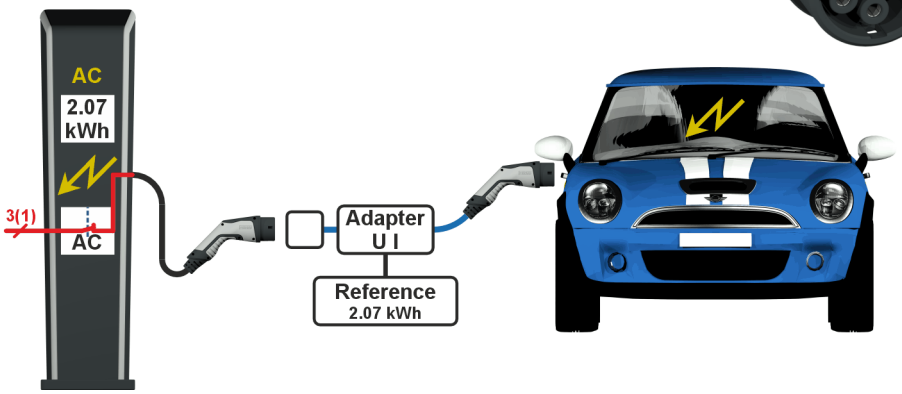
MTE Meter Test Equipment

eMOB I-32.3 AC – Cable Type 2

Test Adapter for E-Mobility Charging Stations with tethered Cable Type 2



At typical fuel stations, the fuel volume displayed in gallons or liters undergoes regular calibration.

Likewise, charging stations, also known as Electric Vehicle Supply Equipment (EVSE) will require periodic calibration to ensure accurate measurement of the electrical energy in kWh charged into an Electric Vehicle (EV) battery.

Laws and regulations mandating such periodic calibrations or post-repair inspections to safeguard consumers and verify the accuracy of measurements.

The eMOB I-32.3 AC 3-phase measurement adapter for current and voltage, connected to a MTE Portable Working Standard, is the right tool to perform such a calibration of an EVSE with tethered cable Type 2 for slow charging with Alternating Current (AC) up to 32 A, 300 V in accuracy class 0.1.

The eMOB I-32.3 AC – Cable Type 2 is positioned between the EVSE AC and the EV. The reference meter measures voltage and current at the customer's transfer point, accounting for losses due to voltage drop between the internal measurement system and this point (plug of the charging cable).

Advantages

- EVSE AC Test System class 0.1 in combination with MTE's Portable Working Standards PWS 2.3 genX, PWS 3.3 genX or CheckMeter 2.3 genX.
- Charging current three-phase up to 32 A (power up to 22 kW at 230 V).
- User-friendly operation through a color touch-screen display with an intuitive graphical interface.
- Easy and fast connection between EVSE AC and EV with locking of the charging cable.
- Operation with rechargeable battery (option) with PWS 2.3 genX or PWS 3.3 genX.
- Parallel recording of charging profile (trend graph of voltage, current and power).
- Verification of the charged energy error against the energy measured by the reference (register test) and/or error measurement using a scanning head, if the EVSE AC features an optical or electrical pulse output proportional to power.

Technical data eMOB I-32.3 AC

General

Power supply:	18 VDC available from the universal CT input of the Reference [4]
Power consumption:	max. 10W
Housing	Hard Plastic
Dimensions (L x W x H):	Adapter case: 305 x 135 x 70 mm EV inlet case: 182 x 132 x 127 mm
Weight:	approx. 5.5 kg
Operation temperature:	-10 °C ... +50 °C
Storage temperature:	-20 °C ... +60 °C
Relative humidity:	≤ 85% at Ta ≤ 21°C
	≤ 95% at Ta ≤ 25°C, 30 days / year spread
Connection:	EN 62196 Type 2 („Mennekes plug“)

Safety CE

Isolation protection:	IEC 61010-1:2011-07
Measurement Category:	300V CAT III
Degree of protection:	IP-42

Measurement range

Measuring Quantity	Range	Phase
Current ranges	1 mA … 32 A	I1, I2, I3
Internal ranges	Range	Output value [V]
	1 mA … 32 mA	0.15 V … 1.5 V AC
	32 mA … 320 mA	0.15 V … 1.5 V AC
	320 mA … 3.2 A	0.15 V … 1.5 V AC
	3.2 A … 32 A	0.15 V … 1.5 V AC

Technical data Reference[4] + eMOB I-32.3 AC

Measurement Accuracy

Voltage / Current		≤ ± E [%] [1 2 4]
Measuring quantity	Range	**Cl. 0.1**
Voltage (U1, U2, U3, N)	46 V … 300 V	0.1
Current direct (I1, I2, I3)	6 mA … 32 A	0.1
	1 mA … 6 mA	0.1

Power / Energy Voltage: 46 V… 300 V (U - N)		≤ ± E [%] [1 2 3]
Measuring quantity / Input I	Range	**Cl. 0.1**
Active (P), Reactive (Q), Apparent (S)		
Current direct (I1, I2, I3)	6 mA … 32 A	0.1
	1 mA … 6 mA	0.1
Drift / year at Power / Energy (PQS) (I direct)		0.02

		≤ ± TC [%/°C] [3]
Temperature coefficient (TC):	Range	**Cl. 0.1**
	0° C ... +40°C	0.005
	-10° C ... +50°C	0.008

Frequency / Phase angle		≤ ± E
Measuring quantity	Range	**Cl. 0.1**
Frequency (f)	40 Hz … 70 Hz	0.01 Hz
Phase angle (φ)	0.00 °… 359.99°	0.1 °

Notes

[1] x.x : Related to the measuring value
x.x : Related to the measuring range final value (full scale, FS),
E(M) = FS/M * x.x (e.g. 0.1 at FS =6 mA, E(2mA) = 6/2 * 0.1 = 0.3 %)

[2] Fundamental frequency in the range 45 … 66 Hz

[3] S: x.x, P,Q: x.x / PF (related to apparent power), 3- and 4-wire networks

[4] Reference: PWS 2.3 genX or PWS 3.3 genX or CheckMeter 2.3 genX

Application

PWS2.3 genX + eMOB I-32.3 AC – Cable Type 2