

EMCtools

Current Sensor fiber optic current sensor



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EMCtools — lab life made easy

Introduction and use:

The EMCtools Current Sensor-Set offers new possibilities in automotive EMC susceptibility tests.

It provides a galvanic insulated DC current measurement for DUT supervision or failure detection. High rated measurement current and extreme low voltage drop come together with high resolution and good accuracy. The measurement head has been tested for field strength of >270V/m.

The built in battery allows measurement in pos. or neg. battery line. It can be recharged by connecting it to a USB connector of any available PC or notebook.

The current data is transferred to the control unit using a standard simplex fiber optic F-SMA cable.

The control unit displays the current on a display. A trigger signal can be generated to trigger Oscilloscopes or to control the susceptibility test depending on various current situations.

A CAN-bus interface provides the measured current permanently or when triggered on HS-CAN or LS-CAN. CAN-bus, CAN-speed and CAN-identifier can be set individually.

The measured current data is also available via USB.

A built in USB to CAN interface can be used to send EMC related data like test frequency or field strength etc. to CAN bus.

All settings and options can be made locally using a menu rotary switch or via remote commands (USB).

Settings are stored in non volatile memory.



Photo: typical setup

Technical data:

Current Sensor head:

Rated current:	100A (116A in overrange)
Voltage drop:	60mV for rated current
Resolution:	1mA (100µA in moving mean mode)
Accuracy:	better 0,5% +/- 3 digit
Power supply:	rechargeable Li-Ion battery (internal)
Battery life:	>24h
Connector electrical:	USB (f) connector – only for charging M8 screws for current measurement
Connector optical:	Standard F-SMA for multimode fiber (50/125µm or 62.5/125µm)
Max. cable length:	>200m
Sampling rate:	6 samples per second
Ambient temperature:	storage/operation: -10 – 50°C (14 - 122 °F)
Size:	98 x 100 x 28 mm (l x w x h)
Weight:	approx. 220g

Control unit:

Power supply:	DC power jack, 7 – 15V DC, max. 0.5A, or via USB
Connector electrical:	USB (f) connector – data connection to PC or Notebook
Connector optical:	Standard F-SMA
Trigger output:	TTL signal, active high, BNC (f) connector
Trigger impulse:	10ms – 99.99s
Trigger on:	current value (< >), current window (within, outside)
CAN Bus:	High Speed CAN acc. ISO 11898-2 – Low Speed CAN acc. ISO 11898-3 (ISO 11519-2).
CAN bus baudrate:	HS-CAN: 33.3k, 50k, 62.5k, 75k, 83.3k, 100k, 125k, 200k, 250k, 500k, 800k, 1M LS-CAN: 33.3k, 50k, 62.5k, 75k, 83.3k, 100k, 125k
CAN connector:	1 pcs 9-pin Sub-D (f), 1 pcs 9-pin Sub-D (m) - all signals passed through
CAN bus interface:	CAN interface USB-> CAN for sending test related data to CAN bus
Bus-Impedance:	no load – high impedance
Setting:	options are set with menu rotary switch dialog or via USB and terminal program
Ambient temperature:	storage/operation: -10 – 50°C (14 - 122 °F)
Size:	154 x 172 x 59 mm (l x w x h)
Weight:	approx. 630g

Delivered devices of the system and accessories:

- 1 pcs EMCtools Current Sensor (100A)
- 1 pcs control unit
- 1 pcs manual
- 1 pcs plug in power supply
- 1 pcs USB-cable
- 1 pcs Data-CD with drivers and manual