LIMITED WARRANTY & LIMITATION OF LIABILITY

This product will be free from defects in material and workmanship for one year from the date of purchase. This warranty does not cover damage from accident, neglect, misuse or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on behalf of the supplier. To obtain service during the warranty period, send your defective product to the nearest Fluke Authorized Service Center with a description of the problem.

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P.O. Box 9090,
Everett WA 98206-9090, U.S.A.

Fluke Industrial B.V.,
P.O. Box 90,
7600 AB, Almelo, The Netherlands.

SERVICE CENTERS

To locate an authorized service center, visit Fluke on the World Wide Web: **http://www.fluke.com** or call Fluke using any of the phone numbers listed below:
+1-888-993-5853 in U.S.A. and Canada
+31-40-2675200 in Europe
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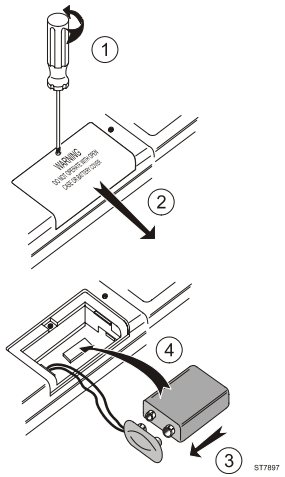


Figure 1. Installing the battery.

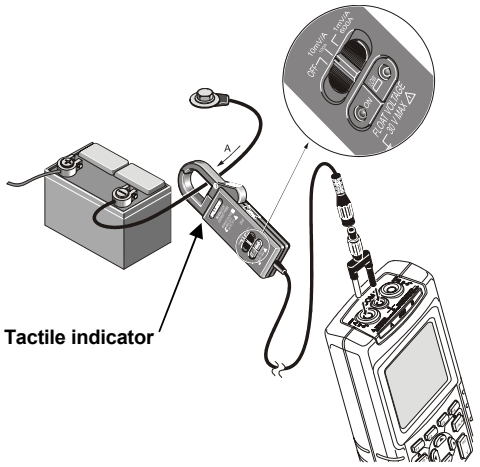


Figure 2. Measuring Setup.

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FLUKE®

90i-610s

AC/DC Current Probe

Instruction Sheet

INTRODUCTION

The 90i-610s is a clamp-on AC/DC Current Probe designed to measure current waveforms in automotive applications with any Test Tool capable of millivolt measurements. There are two measurement ranges: 0 to 100 A (output voltage 10 mV/A) and 0 to 600 A (output voltage 1 mV/A).

SAFETY INFORMATION

⚠ ⚠Read First: Safety Information

To ensure safe operation and service of the Current Probe, follow these instructions:

- **Read the operating instructions before use and follow all safety instructions.**
- **Use the Current Probe only as specified in the operating instructions; otherwise the current probe's safety features may not protect you.**
- **Check the magnetic mating surfaces of the probe jaws; these should be free of dust, dirt, rust, and other foreign matter.**
- **Adhere to local and national safety codes. Individual protective equipment must be used to prevent shock and arc blast injury where hazardous live conductors are exposed.**
- **Do not hold the Current Probe anywhere beyond the tactile indicator, see Figure 2.**
- **Before each use, inspect the Current Probe. Look for cracks or missing portions of the Current Probe housing or output cable insulation. Also look for loose or weakened components. Pay particular attention to the insulation surrounding the jaws.**
- **Never use the Current Probe on a circuit with voltages higher than 600 V CAT II or 300 V CAT III.**
  - **CAT II equipment is designed to protect against transients in circuits directly connected to the low-voltage installation, such as household appliances, portable tools and similar equipment.**
  - **CAT III equipment is designed to protect against transients in equipment in fixed equipment installations, such as distribution panels, feeders and short branch circuits, and lighting systems in large buildings.**
- **Use extreme caution when working around bare conductors or bus bars. Contact with the conductor could result in electric shock.**
- **Use caution when working with voltages above 60 V dc, 30 V ac rms or 42 V ac peak. Such voltages pose a shock hazard.**
- **Keep cables away from rotating parts or belts.**

SYMBOLS

	May be used on HAZARDOUS LIVE conductors.
	Product is protected by double insulation.
	Risk of Danger. Important information. See Users Manual.
	Risk of Electric Shock.
	Complies with relevant European standards.
	Earth ground
	Battery

UNPACKING

The following items should be included in the box of your Current Probe:

- AC/DC Current Probe 90i-610s
- Instruction sheet (This document)
- 9V Battery, Type IEC 6LR61
- BNC-to-Banana Adapter PM9081/001

Check the contents of the shipping box for completeness. If something in the box has been damaged or is missing, contact your distributor immediately.

INSTALLING THE BATTERY

⚠ WARNING

To avoid electrical shock, unclamp the Current Probe from any conductor, and disconnect the Probe's BNC connector from the Test Tool or any other measurement tool before installing or replacing the battery.

Refer to Figure 1 and proceed as follows:

- Put the Current Probe in the OFF position.
- The battery cover is present in the bottom side of the Probe body. Loosen the screw in the battery cover with a small crossheaded screwdriver.
- Slide the battery cover away from the Current Probe.
- Install the 9V battery (IEC 6LR61). Arrange the battery leads so that they will not be pinched between Probe body and the battery cover.
- Reinstall the battery cover and secure the screw.

SPECIFICATIONS

All Electrical Specifications are valid at a temperature of 23 °C ± 5 °C (73 °F ± 9 °F).

Current Ranges: 0 to 100 A DC or AC peak, 0 to 600 A DC or AC peak.
Output Signals: 100 A range: 10 mV/A / 600 A range: 1 mV/A
Measurement Category Ratings:
300 V CAT III & 600 V CAT II, pollution degree 2 per EN 61010-1 & EN 61010-02-032.
Complies with American industry standards UL61010B-1 & UL61010B-2-032, and European standards EN/IEC 61010-1 2nd Edition & EN/IEC 61010-02-032.

Accuracy:

Input Current Error (DC or AC peak)	Error (after zero check)	
	10 mV/A	1 mV/A
0 to 100 A	±2 % of reading ±1 A	±3.5 % of reading ±3 A
100 to 400 A	--	±2.0 % of reading ±2 A
400 to 600 A	--	±3.0 % of reading ±2 A

Maximum Nondestructive Current: 800 A peak
Input Load Impedance (of host instrument): >1 MΩ in parallel with up to 100 pF
Useful Bandwidth: DC and 40 to 400 Hz.
Dimensions: 73 x 215 x 27 mm (2.9 x 8.4 x 1.1 inches)
Weight: 400 g (14 oz.), battery included
Temperature: operating: 0 to 50 °C (32 to 122 °F), max humidity 75%; nonoperating: -20 to 60 °C (-4 to 140 °F), max humidity 80%
Altitude: operating: 0 to 2000 meters (0 to 6500 feet); nonoperating: 0 to 12000 meters (0 to 40000 feet)
Temperature Coefficient:
0.2 * accuracy/ °C max. for temperature T<18 °C and T>28 °C (T<64 °F and T>82 °F)
Battery Life: With Alkaline IEC 6LR61, 60 hours typical, 40 hours minimum.

POWER AND DEMAGNETIZING

During normal operation the green ON-indicator flashes; the red LOW-indicator is on when battery voltage is low.

⚠⚠ WARNING

To avoid false readings which could cause injury, replace battery as soon as the red Low Battery Indicator LED lights.

Auto power off automatically switches the Probe off after 30 minutes.
To Demagnetize the Probe, open and close the jaws several times.

CLEANING AND STORAGE

Periodically wipe the case with a damp cloth and detergent; do not use abrasives or solvents. Open the jaws and wipe the magnetic pole pieces with a lightly oiled cloth. Do not allow rust or corrosion to form on the magnetic core ends. Remove the battery if the Probe is not used for periods of longer than 60 days.

MEASUREMENT INSTRUCTIONS

Refer to Figure 2 and proceed as follows:

- Connect the Current Probe to Input A or the volts and COM inputs of the Test Tool. If necessary use the PM9081 adapter that is supplied with the Probe: for correct polarity, the red leg of the adapter must be inserted into Input A or volts input and the black into COM.
- On the Current Probe: select range. Ensure that the green ON-indicator flashes; the red LOW-indicator must be off.
- Adjust the Test Tool to current readout at a sensitivity of 10 mV/A or 1 mV/A and current AC + DC measurement. For the proper settings see the user documentation of the Test Tool.
- Zero the Probe, especially after you have selected another measurement range.
- Clamp the Current Probe around the conductor. The + and – indications marked on the jaw of the Probe must correspond with the orientation of the current to be measured. This assures a correct reading of the current flow.
- Observe the current value and the shape of the waveform on the display of the Test Tool.

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«Трейд Электроникс»

Шишлаков Евгений

8 (495)668-30-28 доб 169

manager28@tradeelectronics.ru

http://www.tradeelectronics.ru/