

V202503

AC/DC Current Probe HZ051

English Manual





公司官网

微信视频号

Änderungen vorbehalten

Content

Deutsch	3
Français	23
Español	33

English

1	Introduction	14
2	Safety	14
3	Specifications HZ051	17
4 4.1	Operating Instructions Switch On	18 19
4.2	Zero Adjustment	19
4.3	Current Measurement	20
4.4	Auto Power UFF	20
4.5	Battery Replacement	20
4.6	Maintenance	21
5	Warranty and Repair	21



Introduction

The HZ051 current probe has been designed for use with multimeters and oscilloscopes respectively for accurate, non-intrusive measurement of AC, DC and complex waveform currents.

Using advanced Hall Effect technology the HZ051 can measure currents accurately with a resolution of 100 mA/500 mA from 500 mA to 1500 Amps over the frequency range of DC to 20 kHz.

These features make it a powerful tool for use in inverters, switch mode power supplies, industrial controllers and other applications requiring current measurement and/or waveform analysis.

2 Safety

The following symbols appear on the products:

Symbol	Description
X	Do not dispose of this product as unsorted municipal waste. Contact HAMEG Instruments GmbH or a qualified recycler for disposal.
⚠	Important Information. See manual.
	Double insulation.
\otimes	Do not apply around or remove from the HAZARDOUS LIVE conductors.
CE	Complies with the relevant European standards.



Warning

The HZO51 may only be used and handled by qualified personnel. To avoid personal injury, follow these precautions:

 To avoid electric shock, use caution during installation and use of this product; high voltages and currents may be present in circuit under test.

14 Subject to change without notice

- Do not use the product if damaged. Always connect probe to display device before it is installed around the conductor.
- Always ensure the probe is removed from any live electric circuit, and leads are disconnected before removing the battery cover.
- Use the Current Probe only as specified in the operating instructions; otherwise the current probe's safety features may not protect you.
- Adhere to local and national safety codes. Individual protective equipment must be used to prevent the shock and arc blast injury where hazardous live conductors are exposed.
- Do not hold the Current Probe anywhere beyond the tactile indicator.
- 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.
- Use caution when working with voltages above 60 $V_{\text{DC}},\,$ 30 V_{AC} rms or 42 V_{AC} peak. Such voltages pose a shock hazard.
- Use of this 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 of this equipment in a manner not specified herein may impair the protection provided by the equipment.
- CAT III equipment is designed to protect against the transients in the equipment in fixed equipment installations, such as distribution panels, feeders and short branch circuits, and the lighting systems in large buildings.



Safety Standards

EN 61010-1:2001 EN 61010-2-032:2002 EN 61010-031:2002 300 V Cat III, Pollution Degree 2

EMC Standards

EN 61326-2-2:2006 ROHS and WEEE compliant

This product is designed to be safe under the following conditions:

- indoor use
- altitude up to 2000 m
- temperature 0°C to +50°C
- maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 40% relative humidity at 50°C.

Use of the probe on uninsulated conductors is limited to 300 V AC_{RMS} or d.c. and frequencies below 1 kHz.

Safety in its use is the responsibility of the operator who must be a suitably gualified or authorised person. Ensure that your fingers are behind the protective barrier see Fig. 1 when using the probe.



Always inspect the probe and lead for damage before use.



To avoid electric shock, keep the probe clean and free of surface contamination.



3 Specifications HZ051

Electrical Characteristics

(all accuracies stated at 23°C ±1°C)

Nominal current In	2000 AC _{RMS} or DC
Measuring range	200 / 2000 A
Overload capacity	2200 A
Overall DC accuracy	±1% of reading ±0.1 / 0.5 A
Resolution	±100 / ±500 mA
Typical output noise level	600 μV / 10μV
Gain variation	±0.15% of reading/°C
Output sensitivity	10 / 1 mV/A
Frequency range	DC to 20 kHz (-3 dB)
di / dt response	20A/µs
Response time	better than 5µs
Working voltage	300V AC _{RMS} or DC
General data	
Operating temperature	0°C to +50°C
Storage temperature with	
battery removed	–20°C to +85°C
Power supply	9 V Alkaline battery
	PP3, MN 1604
	or IEC6LR61
Battery life	50 hours typical
Load impedance (minimum)	> 100kΩ and ≤100pF
Conductor size	32 mm diameter
Weight	320 g
Output cable and connectors	2 m long coax terminated
	with a safety BNC connector
	50 Ohms



北京海洋兴业科技股份有限公司(股票代码:839145)| 电话:010-62178811 传真:010-62176619| 网址:www.hyxyyq.com

4 Operating Instructions





Warning

To avoid injury, when using the probe ensure that your fingers are behind the protective barrier as shown in Figure 1. Do not use the probe if any part of the probe, including the lead and connector(s), appear to be damaged or if a malfunction of the instrument is suspected.



Subject to change without notice

Typical performance Plots





4.1 Switch On

When the probe is switched on to the required measuring range, the green LED will illuminate. The LED starts flashing when the battery voltage is too low for normal operation and warns the user that it requires changing. This procedure is described in Section 4.5.

4.2 Zero Adjustment

The output zero offset voltage of the probe may change due to thermal shifts and other environmental conditions. Select

Subject to change without notice

19

the required measuring range and to null the output voltage depress the Auto Zero button. Ensure that the probe is away from the current carrying conductor whilst the probe is being nulled.

4.3 Current Measurement

- Switch on the probe by selecting the required measuring range and check that the green LED is lit.
- Connect the output lead to an oscilloscope, multimeter or other measuring equipment.
- Zero the probe using the Auto Zero button.
- Clamp the jaws of the probe round the conductor ensuring a good contact between the closing faces of the jaws.
- Observe and take measurements as required. Positive output indicates that the current flow is in the direction shown by the arrow on the probe.

4.4 Auto Power OFF

In order to save battery life, the probe will automatically switch itself off after approximately 10 minutes. To disable the Auto power off function, Switch Off the probe and Switch On whilst pressing the auto zero button. The red LED will illuminate and the probe will stay On until switched off again.

4.5 Battery Replacement



Warning

To avoid personal injury, always ensure the probe is removed from any live electric circuit, and leads are disconnected before removing the battery cover. Never operate the probe without the battery cover fitted.

The green or red LED will flash when the minimum operating voltage is approached. Refer to Fig.1. Use the following procedure.

- Unclamp the probe from the conductor, turn it off using the ON/OFF switch and disconnect the output leads, from external equipment.
- Loosen the captive screw which secures the battery cover.
 Lift the cover through 30° and pull it clear of the probe



body as shown in Fig 1. Replace the battery and re-fit the battery cover and fasten the screw .

Note:

Replacement with other than the specified type of battery will invalidate the warranty. Fit only the type 9 V PP3 Alkaline (MN 1604).

4.6 Maintenance

Clean the case periodically by wiping it with a damp cloth and detergent. Use isopropyl alcohol to clean the electronics unit and the probe. Do not use abrasive cleaners or solvents. Do not immerse the probe in liquids.

5 Warranty and Repair

HAMEG instruments are subjected to a strict quality control. Prior to leaving the factory, each instrument is burnt-in for 10 hours. By intermittent operation during this period almost all defects are detected. Following the burn-in, each instrument is tested for function and quality, the specifications are checked in all operating modes; the test gear is calibrated to national standards.

The warranty standards applicable are those of the country in which the instrument was sold. Reclamations should be directed to the dealer.

Only valid in EU countries

In order to speed reclamations customers in EU countries may also contact HAMEG directly. Also, after the warranty expired, the HAMEG service will be at your disposal for any repairs.

Return material authorization (RMA):

Prior to returning an instrument to HAMEG ask for a RMA number either by internet (http://www.hameg.com) or fax. If you do not have an original shipping carton, you may obtain one by calling the HAMEG service dept (+49-6182-800-500) or by sending an email to service@hameg.com.

Subject to change without notice