

Operating Instructions



METRAFLEX P300

3-349-569-37
1/6.09

Flexible AC Current Probe



Order Reference

Order No.

METRAFLEX P300/18 450 mm (18 inch probe).....Z502E
For PROFITEST MASTER

Other head lengths available on request.

Thank you for buying this product.
For safety reasons and optimum use of this instrument
read through the operating instructions very carefully.

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1 SAFETY

The following symbols appear on the products:



Attention! Refer to Manual



Double/Reinforced Insulation



Do not apply around or remove from HAZARDOUS LIVE conductors without additional protective means. "Additional protective means" can be de-energizing the circuit or wearing protective clothing suitable for high voltage work.



Do not dispose of this product as unsorted municipal waste. Contact a qualified recycler for disposal.



Indicates EC conformity



Read all instructions completely before using this product.

To avoid electric shock:

- Use caution during installation and use of this product; high voltages and currents may be present in circuit under test.
- This product must be used only by qualified personnel practising applicable safety precautions.
- Wear protective clothing and gloves as required.
- Do not install this product on live conductors.
- Always de-energise circuit under test before installing flexible measuring head. Always inspect the electronics unit, connecting cable, and flexible probe for damage before using this product.
- Do not use product if damaged.
- Always connect electronics unit to display device (**PROFITEST MASTER**) before installing the flexible measuring head.
- Never change batteries while measurement head is installed on conductor.
- Always wear protective clothing and gloves if hazardous live parts are present in the installation where the measurement is carried out.
- If the probe is used in a manner not specified by the manufacturer the protection provided by the equipment may be impaired.

2 INTRODUCTION

The METRAFLEX P300 is an AC current probe utilising Rogowski principle. It can be used to measure AC current up to 100 A when used with PROFITEST MASTER. The flexible probe allows current measurements on conductors that are hard to reach.

The probes provide a 3 V full scale AC output proportional to the current being measured with three selectable ranges.

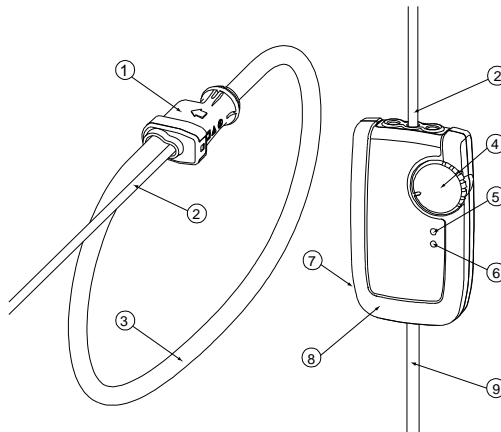


Fig 1

1. Probe Coupling
2. Probe Output Cable
3. Flexible Current Probe
4. Power On / Range Switch
5. RED LED – Overload
6. ORANGE LED – Low Battery
7. External Power Supply Input (not for P300)
8. Integrator Housing
9. Output Cable

3 SPECIFICATIONS

Measuring ranges	3 A / 30 A / 300 A AC
Output sensitivity (AC coupled)	1 V / 100m V / 10m V per A
Accuracy (45-65 Hz)	$\pm 1\%$ of reading ± 0.01 A 3 A range $\pm 1\%$ of reading ± 0.1 A 30 A range $\pm 1\%$ of reading ± 1 A 300 A range
Minimum load	100 k Ω for specified accuracy
Frequency range	20 Hz to 4 kHz (-10% of rdg.)
Phase (45-65 Hz)	$<\pm 15^\circ$
Position sensitivity	$\pm 2\%$ of reading
External magn. field	$\pm 0.2\%$ of range with cable >200 mm (8 inches) from the probe
Noise	10 mA rms in 3 A range 80 mA rms in 30 A range 400 mA rms in 300 A range
Temperature coeff.	$\pm 0.2\%$ of rdg. / $^\circ\text{C}$
Power supply	Two AA MN1500 LR6 alkaline batteries
Battery life	400 hours typical
Low battery	Indicated by an orange LED
Overload	Indicated by a red LED
Enclosure	
Material	ARNITE T06-200 SNF, UL94 V0
Degree of Protection	IP40
Dimensions	110 (l) x 65 (w) x 23 (d) mm
Output connection	0.5 m cable terminated with 4 mm safety plugs
Probe	
Probe length	450 mm (18 inches), double insulated

Probe diameter	9.9 mm (0.39 inches)
Output cable	2 m long (78.7 inches), probe to integrator
Material	Alcryn 2070 NC, LATI LATENE 7H2W V0
Degree of Protection	IP65

General Characteristics

Operating temp.	-20°C to +65°C (-4°F to +149°F)
Storage temp.	-40°C to +75°C (-40°F to +167°F)
Operating humidity	15% to 85% (non-condensing)

Safety standards	EN 61010-1:2001 EN 61010-031:2002 EN 61010-2-032:2002
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EMC standards

Emission	EN 61326-2:2006 class B
Immunity	EN 61326-2:2006

1000 V_{RMS}, Category III, 600 V_{RMS}, Category IV, Pollution Degree 2
(Probe and Integrator)

ROHS and WEEE compliant

Rated for continuous use

4 OPERATION

4.1 BATTERY INSTALLATION AND BATTERY STATUS



Never replace batteries with flexible measuring head installed on conductor to be tested or output connected to a display device.

Never operate the unit without the battery cover fitted.

The METRAFLEX P300 requires two AA MN1500 LR6 alkaline batteries for operation. The battery compartment is accessed from the rear of the electronics enclosure.

Battery status is indicated by an orange LED on the front of the integrator module. This LED will flash one time when the unit is switched ON. The length of time the LED is lit will increase as battery life decreases. Continuous lighting of LED indicates low battery and requires batteries to be replaced.

Should you suspect a depleted battery or the low battery LED blinking, proceed as follows.

1. Turn "OFF" all power to the unit and measurement circuits.
2. Set the probe selector switch to the "OFF" position.
3. Remove the flexible current probe from around the conductor of your measurement circuit. Disconnect the output from the display unit.
4. Rotate the battery lock screw (1/4 turn) until it aligns with the unlock symbol. The battery cover can now be removed.
5. Install the replacement batteries into the battery holder.
6. Replace the battery cover and turn the battery lock until it aligns with the lock symbol.

4.2 MEASURING CURRENT



Read safety section of instructions before operating this product.



Ensure conductor to be tested is de energised

Connect the output of the electronics to the input of PROFITEST MASTER.



The flexible current probe is not for use on conductors with a potential of over 1000 V.

Wrap the flexible probe around the conductor to be tested, close coupling. Energise the circuit under test. Locate the coupling away from nearby conductors.

Important Instructions for connecting the flexible head:

Only enclose single conductor with the flexible head.

The conductor should be central in the middle of the flexible head.

Take care of the current direction, see arrow on the flexible head.

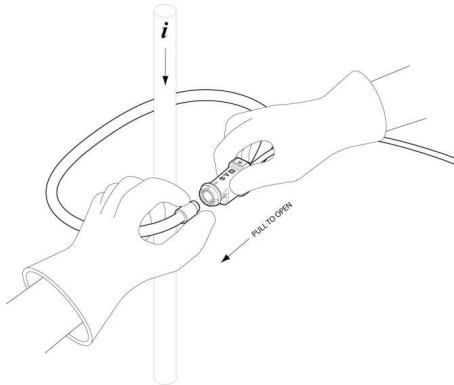
Fix the flexible current probe securely before use. The flexible head should not be moved during the measurement.

The accuracy can be affected by nearby conductors, especially if these are carrying a significantly higher current as in the conductor to be measured. In this case keep the biggest possible distance from adjacent conductors.

Also external magnetic fields can influence the accuracy.



Always use appropriate equipment for personal protection. Do not use the flexible current probe to measure bare conductors unless wearing protective clothing suitable for high voltage work.



4.3 OPERATION

To activate unit, move the rotary switch from the “off” position to the required measuring range. If the value of current being measured is unknown, first select the highest range and then reduce accordingly.

The red and the orange LED might flash when the unit is switched on or when the measuring range is changed.

For use with PROFITEST please read the appropriate section in this manual to obtain correct measurement results.

5. MAINTENANCE



Do not use METRAFLEX P300 if damaged.

Always inspect the integrator unit, connecting cable, and flexible probes for damage before use.

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

Use Isopropyl alcohol to clean the electronics unit and the probe

Make sure the flexible probe, connecting cable, and electronics enclosure are dry before further use.

6. WARRANTY

Your METRAFLEX is guaranteed for two years from the date of purchase against defective material or workmanship. If the unit fails during the warranty period, we shall at our discretion, repair or replace it with a new or reconditioned unit provided we are satisfied that the failure is due to defective material or workmanship. To make a claim under warranty, the probe should be returned to us, postage prepaid, with a description of the defect. The use of a battery or external power supply, other than that specified invalidates this warranty.

Goods alleged by the buyer to be defective shall not form the subject of any claim for injury, loss, damage, or any expense howsoever incurred whether arising directly or indirectly from such alleged defects other than death or personal injury resulting from the seller's negligence.

No condition is made or to be implied nor is any warranty given or to be implied as to the life or wear of goods supplied or that they will be suitable for any particular purpose or for use under specific conditions, notwithstanding that such purpose or conditions may be made known to the seller.

7. PRODUCT SUPPORT

If required please contact:

GMC-I Messtechnik GmbH

Product Support Hotline

Phone: +49 911 86 02-0

Fax: +49 911 86 02-7 09

E-mail: support@gossenmetrawatt.com

8. REPAIR AND REPLACEMENT PARTS SERVICE DKD CALIBRATION CENTRE AND RENTAL INSTRUMENT SERVICE

If required please contact:

GMC-I Service GmbH

Service Center

Thomas-Mann-Strasse 20

90471 Nürnberg, Germany

Phone: +49 911 817718-0

Fax: +49 911 817718-253

E-mail: service@gossenmetrawatt.com

This address is only valid in Germany. Please contact our representatives or subsidiaries for service in other countries.

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