PHP 602

High accurate dual input reference thermometer for RTDs

PHP 602 is a high accurate dual input reference thermometer for resistive probes.

Description

PHP 602 is a high accurate dual input reference thermometer for resistive probes.

A large number of probes already exists in the instrument data base. In addition, the user can at anytime create new linearisation tables and the metrological parameters (correction versus standards, serial numbers, names, calibration dates ...) are stored in the memory.

Used together with VISULOG data management software to drive PHP thermometer and a thermal device such as temperature bath, dry block calibrator or oven, a complete calibration procedure can be performed, reports generated and certificates printed for individual sensors.

Its graphical dual display enables measured values from channel 1 and 2 to be simultaneously displayed and leads to keyboard simplification. On-line help messages are available at any time in case additional information on displayed options is needed.

It is fully programmable via RS 232 and IEEE 488 (option) interfaces, which makes it the perfect instrument for test benches and automatic test equipment applications. PHP 601 is also available with a battery in option.

PHP 602 is offered into a compact benchtop housing for on-site use as well as benchtop or panel mounted use. It is widely used in metrological departments, quality-control departments, research and development laboratories and also by maintenance and approval companies.

Applications:

- Temperature measurements using RTDs
- Absolute or differential measurements over two channels
- Differential thermal analysis
- Checking the temperature stability of furnaces or baths
- Monitoring (alarm) and temperature recording

Specifications

Specifications and performances in temperature @23°C ±1°C

Uncertainty is given in % of reading (PHP 601 display) + fixed value.

Resistive probes: Measurement

Sensor	Measurement range	Range	Resolution	Accuracy / 1 year in measurement
Pt100 (α = 3851)	-210 to +45°C -210 to +365°C -210 to +1100°C	100 Ω 200 Ω 400 Ω	0.0001°C 0.0002°C 0.0005°C	0.004% RDG + 0.009°C 0.004% RDG + 0.010°C 0.004% RDG + 0.015°C
Pt100 (α = 3916)	-200 to +44°C -200 to +358°C -200 to +510°C	100 Ω 200 Ω 400 Ω	0.0001°C 0.0002°C 0.0005°C	0.004% RDG + 0.009°C 0.004% RDG + 0.010°C 0.004% RDG + 0.015
Pt100 (α = 3926)	-210 to +45°C -210 to +365°C -210 to + 1100°C	100 Ω 200 Ω 400 Ω	0.0001°C 0.0002°C 0.0005°C	0.004% RDG + 0.009°C 0.004% RDG + 0.010°C 0.004% RDG + 0.015
Pt200 (α = 3851)	-210 to +45°C -210 to +365°C -210 to + 1100°C	200 Ω 400 Ω 800 Ω	0.0001°C 0.0002°C 0.0005°C	0.004% RDG + 0.009°C 0.004% RDG + 0.010°C 0.004% RDG + 0.015
Pt500 (α = 3851)	-210 to +233°C -210 to +800°C -210 to +1200°C	800 Ω 1600 Ω 3200 Ω	0.0001°C 0.0005°C 0.001°C	0.004% RDG + 0.008°C 0.004% RDG + 0.010°C 0.004% RDG + 0.015
Pt1000 (α = 3851)	-210 to +230°C -210 to +800°C	1600 Ω 3200 Ω	0.0002°C 0.0005°C	0.004% RDG + 0.008°C 0.004% RDG + 0.010°C
Ni100 (α = 618)	-60 to +30°C -60 to +180°C	100 Ω 200 Ω	0.0001°C 0.0001°C	0.007°C 0.009°C
Ni120 (α = 672)	-40 to +136°C	200 Ω	0.0001°C	0.008°C

	-40 to +205°C	400 Ω	0.0002°C	0.010°C
Cu10 (α = 427)	-200 to +260°C	25 Ω	0.0002°C	0.004% RDG + 0.010°C

Accuracies are given for 4-wire mounted probes
Choice between 6 measuring currents: 0.125 to 4 mA
Choice between three current waveforms: continuous, pulse or alternated
Measurement with I/√2 function to define self-heating measurement.
Display unit: °C, °F and K.

Specifications and performances in process @23°C ±1°C

Resistance: Measurement

Range	Res.	Connection	Accuracy / 1an
25 to 3200 Ω	1 mΩ	4 wires 3 wires 2 wires	0.003% RDG + 0.0005% range

4-wire measurement: All measuring currents.
3-wire measurement: add 1 mΩ

Further features

Analogue output	0 to 2.55 V with load > 2.5 kΩ Resolution: 10 mV Accuracy: ± 10 mV
Alarm thresholds	2 alarms with sound signal and relay output (1 A, 220 V~, 60 VA max)
Scaling in measurement	Linear scaling (X = aY + b) or programmable segments to create a response curve (9 segments)
Relative measurement	

Models and accessories

Instrument:

PHP602-1 Reference table thermometer for RTDs with 2 measurement channels

Delivered in standard with:

- Carrying case
- Factory test report
- RS 232 interface

PHP602-2 Reference table thermometer for RTDs with 2 measurement channels

Delivered in standard with:

- Carrying case
- Factory test report
- RS 232 interface
- Battery + charger

PHP602-3 Reference table thermometer for RTDs with 2 measurement channels

Delivered in standard with:

- Carrying case
- Factory test report
- RS 232 and IEEE 488 interface

PHP602-4 Reference table thermometer for RTDs with 2 measurement channels

Delivered in standard with:

- Carrying case
- Factory test report
- RS 232 and IEEE 488 interface
- Battery + charger

Accessories:

ACL4604-000A Adaptor LEMO

ER 48379-000 LEMO connector

PEM40316-000 Adaptor DIN/LEMO

AN6901 Soft case for benchtop instruments

AN5836 IEEE 488 cable

Length: 2 m

AN5875 RS232 9p F cable

AN5883	Bracket mounting for panel installation (T2 box type)
AN5884	Rack mounting kit for rack installation (T2 box type)

Reference sensors:

AN5847-30000A	Pt100 working standard sensor, -180 to 450°C
	L = 500 mm, dia 5 mm, stability 0.025°C, LEMO output, with certification
AN5847-30001A	Pt100 working standard sensor, -180 to 450°C
	L = 500 mm, dia 5 mm, stability 0.025°C, LEMO output, without certification
AN5848-30000	Pt100 working standard sensor, -180 to 450°C
	L = 400 mm, dia 6 mm, stability 0.050°C, LEMO output, with certification
AN5848-30001	Pt100 working standard sensor, -180 to 450°C
	L = 400 mm, dia 6 mm, stability 0.050°C, LEMO output, without certification

Software:

VISULOG	Monitoring software 32 bits full version

Certification:

QMA11EN	COFRAC certificate of calibration
	With all relevant data points where the device has been tested

Packing information:

Size	255 x 88 x 310 mm
Weight (gross)	2 to 3 kg according to the configuration chosen