

# Digital Thermometer KELVIMAT®

Model 4306



4306 EN

- Precision measuring instrument with 2 Pt100 inputs
- Simultaneously display 2 measured values or difference value
- Stores MAX, MIN, HOLD and average values
- Measurement range - 200 °C ... 850 °C
- Scalable analog output 0 ... 1 V (resolution up to 0.01 °C)
- Integrated sensor calibration 1-point, 2-point or 3-point alignment

## Application

The KELVIMAT® 4306 enables low-cost, accurate measurement of absolute temperatures and temperature differences in the range of - 200 ... + 850 °C in industrial, medical and research applications. The KELVIMAT® 4306 is particularly suited to the following applications:

- ▶ Monitoring test equipment
- ▶ Calibration center
- ▶ Quality assurance
- ▶ Precise long-term monitoring

With a calibration certificate (available as an option) for the entire measuring chain, it is easy to test accuracy when calibrating sensors, for example, by using channel 1 as a reference and making a comparative measurement in a water bath via channel 2.

## Description

The KELVIMAT® is a 2-channel model that enables precise absolute temperature or temperature difference measurements. A menu system lets you configure the unit (°C or °F), calibration options, measurement inputs or measurement channels, and output signals (analog output). The HOLD function lets you “freeze” the actual measured value. You can also store and retrieve maximum, minimum and average temperatures. The 1-point, 2-point or 3-point alignment function enables compensation of sensor tolerances with reference measurements. An analog output is available for each channel that is separately scalable by limiting the measurement range.

## Technical Data

Measuring canal CH1 and CH2:	for Pt100 / DIN EN 60751 sensors
Measuring range:	- 200 °C ... 850 °C
Measurement current:	1 mA
Error of measurement:	± 0.03 K from - 100 °C ... 150 °C ± 0.05 K from - 200 °C ... 200 °C otherwise 0.1 % of measurement value
Measuring period:	1/sec. resp. 4/sec.
Resolution:	0.01 °C for range - 200 °C ... 200 °C 0.1 °C for range 200 °C ... 850 °C
Outputs:	RS232 interface (serial printer connectable) 2 analog output 0 ... 1 Volt (11 bit scaleable)
Plug connection:	LEMO 1B 6-pin
Operation temperature:	0 °C ... 40 °C
Display:	2-line spaced, LCD
Housing:	plastic housing with handle
Dimensions (W x H x D):	200 x 240 x 90 [mm]
Weight:	1.2 kg
Excitation:	mains adapter 230 VAC 9 V / 32 mA DC

## Order Information

Digital thermometer model KELVIMAT®  
measuring range - 200 °C ... + 850 °C  
with test certificate

**Model 4306-V100**

## Accessories

**Connector** for Pt100,  
LEMO 1B

**Model 4291-0**

**Connection cable** for Pt100,  
length 1 m with 4 banana connector/1xLEMO 1B

**Model 4499**

## Windows software Smartgraph

for online data acquisition with KELVIMAT® 4306 **Model 4306-P001**

## Pt100 sensors

Please refer to data sheet 42-Pt100 EN for our program of selected Pt100 sensors.

## Example application

### Pairing and testing temperature sensors

To enable the difference between the supply and return temperatures in a system to be measured in the full measurement range with the required measurement uncertainty, the Pt100 temperature sensors must be sufficiently well matched as a pair. Since class B Pt100 sensors can have a deviation for example  $\pm 0.8$  K at + 100 °C, sensor pairs that are suited to this application must be selected from a larger quantity of standard sensors.

The KELVIMAT® model 4306 enables easy and low-cost testing and pairing of Pt100 temperature sensors. The 2-channel design means that absolute temperatures or temperature differences can be precisely measured and compared. The comparison measurement for the sensors can be carried out in a liquid bath, for example. In addition, a log can be printed out via the 4306-P001 software.

