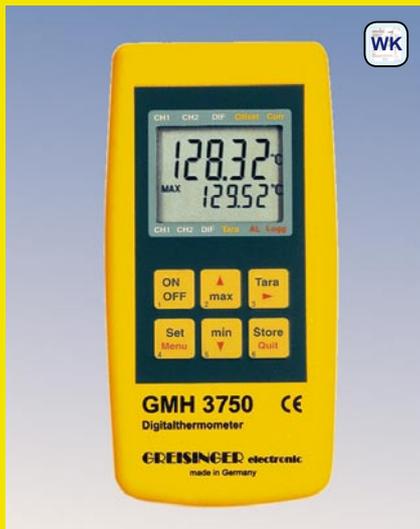# Pt100 - High-Precision Thermometer
Reference meter for any calibration requirement

- Suitable for all Pt100 4-wire probes with 4-pin miniature DIN-plug
- Highest accuracy and resolution (0,01°C)
- Freely adjustable analog output 0-1V or seriell interface
- Offset and slope input
- Min-/max- value memory, hold function

Additional functions of the GMH3750:

- 2 integrated logger functions
- Optical and acoustic min-/max- alarm
- Userdefined sensor curve (50 interpolation points)
- Real-time clock with day, month and year

GMH 3750 access. not incl.

Microprocessor precision thermometer for Pt100 4-wire

Application: reference measurings in liquids, soft media, air/gases.

Specification:

Measuring range:
-199,99 ... +199,99°C resp. -200,0 ... + 850,0°C
-199,99 ... +199,99°F resp. -328,0 ... +1562,0 °F
Resolution: 0,01°C resp. 0,1°C
  0,01°F resp. 0,1 °F
Linearisation: digital stored characteristic curve GMH3750 add. supports an userdefined curve.
Auto-range: automatically or manually choose of the measuring range.
Accuracy: (±1 digit) (at nominal temperature = 25°C)
 $\leq$ 0,03 °C / 0,06 °F at resolution 0,01 °
 $\leq$ 0,1 °C / 0,2 °F at resolution 0,1 °
Temperature drift: $\leq$ 0,002 °C / K
Probe: Pt100, 4-wire, nach DIN EN 60751
probe connection via 4-pin miniature DIN-plug
Nominal temperature: 25°C
Working temperature: -25 to +50°C
Relative humidity: 0 to +95%RH (non-condensing)
Storage temperature: -25 to +70°C
Display: two 4½ digit LCDs (12.4mm or 7mm high), as well as additional arrows.
Pushbuttons: 6 membrane keys
Output: 3-pin jack connector Ø3.5 mm, choice between seriell interface or analog output
- seriell interface: direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS3100 or GRS3105 resp. USB3100 (p.r.t. accessories).
- analog output: 0...1V, freely adjustable (resolution 13bit, accuracy 0.05% at nom. temp.)
Power supply: 9V-battery, type IEC 6F22 (included) as well as additional d.c. connector for external 10.5-12V direct voltage supply. (suitable power supply: GNG10/3000)
Low battery warning: ' bAt '
Power consumption: approx. 1 mA
Dimensions: 142 x 71 x 26 mm (H x W x D)
Impact-resistant ABS plastic housing, membrane keyboard, transparent panel. Front side IP65, integrated pop-up clip.
Weight: approx. 155 g

Functional range:

Min./Max. value memory: Memorizing of max. and min. values.

Hold function: By pressing a button the current values will be "frozen".
Auto-Off-Function: 1...120 min (can also be deactivated).
Offset and slope input: offset- and scale correction can be entered digitally.

Additional functions of the GMH3750:
Min-/Max-alarm: the measuring value is constantly monitored if they remain within the min./max. limits set.
- Alarm: 3 different alarm settings
  off: alarm function not activated
  on: visual alarm via display, integrated buzzer and interface
  no Sound: alarm via display and interface
- Regulating function: with the help of the switching module GAM3000 (optinally) electric equipment can be switched on/off or alarm memorised (p.r.t. page 41)
Logger functions:
-manually: 99 data sets (data recall via keyboard or interface)
-cycle: 16.384 data sets (data recall via interface)
-adjustable cycle time: 1sec. ... 1h
Logger start and stop via the keyboard or interface. Comfortable read-out and display software (GSOFT3050) available as additional equipment.
Real-time clock: clock with day, month and year

Accessories:

plug-in probes Pt100   p.r.t. page 101
GKK 1100 case (340 x 275 x 83 mm) with foam lining for universal use
GRS 3100 interface converter
GSOFT 3050 software (p.r.t. p. 39)
GAM 3000 switching module (p.r.t. p. 41)
ST-R1 device protection bag with cut out for probe connection
GB 9 V spare battery
GNG 10 / 3000 power supply

miscellaneous accessories p.r.t. pages 39 - 41

Calibrated Systems

General:
The overall error of a measuring consists of the sum of the instrument error and the probe error. To minimise the overall error, we offer calibrated and optimised systems below.
Due to their excellent system accuracy they are especially suitable for quality assurance according to ISO9000ff, as reference instruments in manufacturing processes, laboratory, service and maintenance, etc.

The system optimisation is done via a special characteristic curve which is determined for each temperature probe separately and stored in the instrument (GMH3750) or. with probe adjusting via offset and slope input (GMH3710).

Scope of supply:
Measuring device GMH 3750 or GMH 3710, temperature probe GTF 401 1/3 DIN, plastic case GKK 3500 and certificate of calibration with 3 calibration points.

GMH 3750 / SET1

incl. certificate of calibration

optimiced measuring range: -20 .. +70°C

Temperature probe: GTF 401 1/3 DIN, Pt100, 4-wire
(for tech. data please refer to p. 101)
System accuracy: better than 0,07°C
Calibration points: -20°C / 0°C / 70°C

GMH 3750 / SET2

incl. certificate of calibration

optimiced measuring range: 0 .. +250°C

Temperature probe: GTF 401 1/3 DIN, Pt100, 4-wire
(for tech. data please refer to p. 101)
System accuracy: better than 0,3°C
Calibration points: 0°C / 100°C / 250°C

GMH 3710 / SET1

incl. certificate of calibration

optimiced measuring range: -20 .. +70°C

Temperature probe: GTF 401 1/3 DIN, Pt100, 4-wire
(for tech. data please refer to p. 101)
System accuracy: better than 0,1°C
Calibration points: -20°C / 0°C / 70°C

Calibration accessories:

GMHKonfig   **free**
(visit out homepage: Download --> Software)

Software description:
Comfortable software to edit the user defined sensor curve of the GMH3750. (e.g. for calibration labaratories etc.)
By means of this software probes can be adjusted to the instrument. As result an overall accuracy of $\leq$0.03°C can be achieved depending on the measuring range.
Similar resistance curves (e.g. Ni100) can be loaded to.
The sensor curve can stored external and reloaded to the device.
Note: please note that for the interface communication with the device a interface converter (GRS3100, GRS3105 or USB3100) is necessary (p.r.t. page 41)