

## PRECISION QUICK-RESPONSE THERMOMETER FOR THERMOCOUPLES



VERY QUICK RESPONSE TIME!



Connection GMH 3201

**GMH 3201**

Item No. 474930

Precision second thermometer type K

**GMH 3211**

Item No. 611381

Precision quick-response thermometer, universal

## HIGHLIGHTS:

- Serial interface (except GMH 3221)
- Correction factor for surface measuring can be switched on / off (switchable) (except GMH 3221)

## GMH 3221, GMH 3231 AND GMH 3251:

- 2 plug-in probes can be connected and read simultaneously
- Differential temperature measurement

## ADDITIONAL FUNCTIONS

## GMH 3221/3231:



## GMH 3251:



Connection GMH 3221



Connection GMH 3231/51

**GMH 3221**

Item No. 611384

Precision quick-response thermometer, 2 channel type K

**GMH 3231**

Item No. 611382

Precision quick-response thermometer, 2 channel universal

**GMH 3251**

Item No. 611383

Precision quick-response thermometer, 2 channel, logger

| TECHNICAL SPECIFICATIONS:                 | GMH 3201                                            | GMH 3211                                                                      | GMH 3221                                                                                     | GMH 3231                                                                      | GMH 3251                                                           |
|-------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------|
| Thermocouples:                            |                                                     | K, J, T, N, S, E, B                                                           |                                                                                              | K, J, T, N, S, E, B                                                           | K, J, T, N, S, E, B                                                |
| Measurement channels:                     | 1 thermocouple input (type K compensation material) |                                                                               | 2 thermocouple inputs (type K compensation material)                                         |                                                                               |                                                                    |
| Measuring ranges                          |                                                     |                                                                               |                                                                                              |                                                                               |                                                                    |
| Type K:                                   | -220.0 .. + 1372.0 °C                               | -220.0 .. + 1372.0 °C                                                         | -220.0 .. + 1372.0 °C                                                                        | -220.0 .. + 1372.0 °C                                                         | -220.0 .. + 1372.0 °C                                              |
| Type J:                                   | -                                                   | -200.0 .. + 1100.0 °C                                                         | -                                                                                            | -200.0 .. + 1100.0 °C                                                         | -200.0 .. + 1100.0 °C                                              |
| Type T:                                   | -                                                   | -200.0 .. + 400.0 °C                                                          | -                                                                                            | -200.0 .. + 400.0 °C                                                          | -200.0 .. + 400.0 °C                                               |
| Type N:                                   | -                                                   | -200.0 .. + 1300.0 °C                                                         | -                                                                                            | -200.0 .. + 1300.0 °C                                                         | -200.0 .. + 1300.0 °C                                              |
| Type S:                                   | -                                                   | -50.0 .. + 1768.0 °C                                                          | -                                                                                            | -50.0 .. + 1768.0 °C                                                          | -50.0 .. + 1768.0 °C                                               |
| Type E:                                   | -                                                   | -60.0 .. + 850.0 °C                                                           | -                                                                                            | -60.0 .. + 850.0 °C                                                           | -60.0 .. + 850.0 °C                                                |
| Type B:                                   | -                                                   | +300 .. + 1750 °C                                                             | -                                                                                            | +300 .. + 1750 °C                                                             | +300 .. + 1750 °C                                                  |
| Accuracy: (at nominal temperature)        | ± (0.5 °C + 0.2 % of mv.)                           | ± (0.5 °C + 0.2 % of mv.) (J, K, N, T, E)<br>± (0.8 °C + 0.4 % of mv.) (S, B) | ± (0.5 °C + 0.2 % of mv.)                                                                    | ± (0.5 °C + 0.2 % of mv.) (J, K, N, T, E)<br>± (0.8 °C + 0.4 % of mv.) (S, B) |                                                                    |
| Analog output:                            | No                                                  | No                                                                            | No                                                                                           | No                                                                            | 0..1 V                                                             |
| Alarm:                                    | No                                                  | No                                                                            | No                                                                                           | No                                                                            | CH1, CH2, CH1 + 2, DIF                                             |
| Data logger:                              | No                                                  | No                                                                            | No                                                                                           | No                                                                            | manually: 1,000 data records<br>automatically: 10,000 data records |
| Sensor connections (mini flat plug):      | 1                                                   | 1                                                                             | 2                                                                                            | 2                                                                             | 2                                                                  |
| Serial interface:                         | -                                                   | 3-pole jack socket Ø 3.5 mm                                                   | -                                                                                            | 3-pole jack socket Ø 3.5 mm                                                   | 3-pole jack socket Ø 3.5 mm                                        |
| Differential measurement:                 |                                                     |                                                                               | If 2 sensors are connected, the temperature difference sensor 1 – sensor 2 can be displayed. |                                                                               |                                                                    |
| Correction value for surface measurement: | -                                                   | adjustable                                                                    | -                                                                                            | adjustable                                                                    | adjustable                                                         |
| Power supply:                             | 9 V battery                                         | 9 V battery, mains socket                                                     | 9 V battery                                                                                  | 9 V battery, mains socket                                                     | 9 V battery, mains socket                                          |
| Battery life:                             | approx. 500 h                                       | approx. 500 h                                                                 | approx. 300 h                                                                                | approx. 300 h                                                                 | approx. 300 h                                                      |

## PRECISION QUICK-RESPONSE THERMOMETER FOR THERMOCOUPLES

## GENERAL TECHNICAL DATA:

|                                                  |                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Resolution:                                      | 0.1 °C or 1 °C                                                                                                                                                                                                                                                                                                                                         |
| Working temperature:                             | -25 .. + 50 °C                                                                                                                                                                                                                                                                                                                                         |
| Display:                                         | two 4½-digit LCD displays (12.4 mm or 7 mm high)                                                                                                                                                                                                                                                                                                       |
| Serial interface (except GMH 3201 and GMH 3221): | 3-pole jack socket Ø 3.5 mm, can be connected directly to the RS232 or USB interface of a PC via an electrically isolated interface converter GRS 3100/GRS 3105 or USB 3100 N (accessory).                                                                                                                                                             |
| Data logger (only GMH 3251):                     | <b>manually:</b> 1,000 data records (retrieval of data via keyboard or interface)<br><b>cyclical:</b> 10,000 data records (data retrieval via interface) adjustable cycle time: 1 s..1 h<br>The logger is started and stopped via the keyboard or interface. A convenient software GSOF 3050 (accessory) is available for reading out the logger data. |
| Housing                                          | Made of impact-resistant ABS, membrane keyboard, transparent panel, integrated pop-up clip                                                                                                                                                                                                                                                             |
| Dimensions:                                      | 142 x 71 x 26 mm (H x W x D)                                                                                                                                                                                                                                                                                                                           |
| Nominal temperature:                             | 25 °C ± 5 K                                                                                                                                                                                                                                                                                                                                            |
| Weight:                                          | approx. 155 g                                                                                                                                                                                                                                                                                                                                          |
| Scope of delivery:                               | Device, battery, test report, operating instructions                                                                                                                                                                                                                                                                                                   |

## SPECIAL FEATURE (EXCEPT GMH3201 AND -21):

For each probe connection, a correction factor can be entered for surface measurements... This corrects the temperature difference of the measuring surface relative to the ambient temperature optimally in order to obtain the most precise surface measurements possible. Such as in applications where infrared thermometers have their weaknesses, for example on shiny metallic surfaces!

## ACCESSORIES OR SPARE PARTS:

## GB 9 V

Item No. 601115

Spare battery 9 V, type IEC 6F22

## GNG 10/3000

Item No. 600273

Plug power supply for GMH 3XXX series, (220/240 V, 50/60 Hz), output voltage 10.5 V/10 mA, suitable for devices with a power supply socket

## ST-RN

Item No. 601074

GMH 3000 protective bag made of Nappa leather, 2 connections (1 x round, 1 x rectangular)

## ST-N2

Item No. 601072

GMH 3000 protective bag made of Nappa leather, 2 rectangular connections

## GKK 1100

Item No. 601060

Case with knob foam for universal use, 340 x 275 x 83 mm (W x H x D)

## 16-CHANNEL PRECISION QUICK-RESPONSE THERMOMETER FOR THERMOCOUPLES



## HIGHLIGHTS:

- Simultaneous display of 4 inputs
- 800,000 measurement data can be saved
- For thermocouples type K, J, T, N, R, S, B, E

16 INTERCHANGEABLE SENSORS CAN BE CONNECTED AT THE SAME TIME



## HD32-8-16

Item No. 700077

Precision thermocouple thermometer with 16 inputs and logger

## GENERAL:

Ideal for complex temperature measurement tasks in which many temperature values are to be recorded, measured, saved and displayed at the same time.

## APPLICATION:

Testing and experimental systems, drying and baking ovens, air conditioning centers, production and manufacturing processes, monitoring of the temperature in concrete or asphalt of streets and buildings

## TECHNICAL SPECIFICATIONS:

|                                                  |                                                                                                                            |                                                                                                                             |
|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Thermocouples:                                   | K, J, T, N, R, S, B, E                                                                                                     |                                                                                                                             |
| Resolution:                                      | 0.05 °C or 0.1 °C                                                                                                          |                                                                                                                             |
| Measuring range: (depending on the thermocouple) | Type K: -200 °C .. + 1370 °C<br>Type J: -100 °C .. + 750 °C<br>Type T: -200 °C .. + 400 °C<br>Type N: -200 °C .. + 1300 °C | Type R: +200 °C .. + 1480 °C<br>Type S: +200 °C .. + 1480 °C<br>Type B: +200 °C .. + 1800 °C<br>Type E: -200 °C .. + 750 °C |
| Accuracy: (depending on thermocouple)            | ± 0.1 .. ± 0.4 °C                                                                                                          |                                                                                                                             |
| Sensor connections:                              | 16                                                                                                                         |                                                                                                                             |
| Working conditions:                              | -5..+50 °C working temperature, -25..+65 °C storage temperature, 0..90 % relative humidity                                 |                                                                                                                             |
| Logger function:                                 | 800,000 records                                                                                                            |                                                                                                                             |
| Display:                                         | Backlit LCD display, 128 x 64 pixels, enables 4 measured values to be displayed at the same time                           |                                                                                                                             |
| Serial interface:                                | Communication via galvanically isolated 9-pin USB connecting cable                                                         |                                                                                                                             |
| Power supply:                                    | 4 x 1.5 V alkaline batteries, via external 12 V DC power supply or via the interface on the PC                             |                                                                                                                             |
| Housing:                                         | ABS, IP64                                                                                                                  |                                                                                                                             |
| Dimensions:                                      | 180 x 220 x 50 mm (H x W x D)                                                                                              |                                                                                                                             |
| Weight:                                          | 1100 g                                                                                                                     |                                                                                                                             |
| Scope of delivery:                               | Device, DeltaLog9 software, lanyard, batteries, manual                                                                     |                                                                                                                             |

## ACCESSORIES OR SPARE PARTS:

## SWD-10

Item No. 700039

Power supply plug for HD portable instruments, 100 ... 240 V AC

## CP22

Item No. 700078

Interface converter HD32-8 &lt;=&gt; PC, USB

Note: Connection cables for the PC and temperature sensors must be ordered separately.