

# Digital precision quick-response thermometer for thermocouples



## General functions:

- 5 different thermocouples can be used! (types J, K, N, S, T)
- Correction of meas. values for surface meas. can be switched on / off
- Serial interface, device can be connected to bus system

## Additional functions of GMH 3230 and GMH 3250:

- 2 plug-in probes can be connected and read simultaneously
- Temperature differences

## Additional functions of the GMH 3250:

- 2 integrated logger functions
- Optical and acoustic min-/max- alarm
- Real-time clock with day, month and year

## Additional functions of the GMH 3210:

- Analog output 0 - 1 V

**GMH 3210** accessories not incl. for connection of 1 plug-in probes

**GMH 3230** accessories not incl. for simultaneous connection of 2 plug-in probes

**GMH 3250** accessories not incl. for simultaneous connection of 2 plug-in probes

suitable probes  
p.r.t. p. 105-107

Specification:	GMH 3210	GMH 3230	GMH 3250
<b>Thermocouples:</b>	J, K, N, S, T	J, K, N, S, T	J, K, N, S, T
<b>Resolution:</b>	0,1°C or. 1°C	0,1°C or. 1°C	0,1°C or. 1°C
<b>Measuring range:</b>	-220°C ... +1750°C (depending on thermocouples)		
<b>Measuring ranges: (extract)</b>			
<b>Type K: (MR1)</b>	-65,0 ... +300,0°C	-199,9 ... +999,9°C	
<b>(MR2)</b>	-220 ... +1372°C	-220 ... +1372°C	
	<i>further measuring ranges online at <a href="http://www.greisinger.de">www.greisinger.de</a></i>		
<b>Accuracy: (extract)</b>			
<b>Type K: (for MR1)</b>	±0,03% of m.v. ±0,05%f.s.	±0,03% of m.v. ±0,05%f.s. (≥-60°C)	
		±0,2% of m.v. ±0,05%f.s. (<-60°C)	
<b>(for MR2)</b>	±0,08% of m.v. ±0,1%f.s.	±0,08% of m.v. ±0,1%f.s. (≥-100°C)	
		±1°C ±0,1%f.s. (<-100°C)	
<b>Working temperature:</b>	-25 to +50°C	-25 to +50°C	
<b>Probe connections:</b>	1	2	2
<b>Display:</b>	2 four digit LCDs (12.4mm and 7mm high)		
<b>Output:</b>	3-pin jack connector Ø3.5mm		
<b>serial interface:</b>	direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS3100 or GRS3105 resp. USB3100 (p.r.t. accessories).		
<b>analog output:</b>	x	-	-
<b>Power supply:</b>	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)		
<b>Power consumption:</b>	approx. 0.3 mA	approx. 1,7 mA	approx. 1,6 mA
<b>Housing dimensions:</b>	142 x 71 x 26 mm (L x W x D), Impact-resistant ABS plastic housing. Front side IP65, integrated pop-up clip for table top or suspended use. <b>Weight:</b> approx. 155 g		
<b>Functions:</b>			
<b>Min./Max. value memory</b>	x	x	x
<b>Hold function</b>	x	x	x
<b>Auto-Off-function</b>	x	x	x
<b>Low battery warning</b>	x	x	x
<b>Special applications:</b>			
<b>Compensation value for surface measurements</b>	x	x	x
<b>Zero-point offset entry</b>	x	x	x
<b>Difference measurements</b>	-	x	x
<b>Tare/diff-function</b>	-	x	x
<b>Min-/Max-alarm</b>	-	-	x
<b>Logger functions</b>	-	-	x
<b>Real-time clock</b>	-	-	x

## General Functional Description:

**Compensation value for surface measurements:** A compensation value (to compensate for the loss when transferring heat from the meas. object to the probe) can be set and switched on/off for surface measurements if required.

### Zero-point offset entry:

By entering the offset temperature the parameter can be moved parallel to the calibration graph.

### Difference measurements:

with a resolution of 0,1° or 1°. Temperature difference probe 1 - probe 2 can be displayed if 2 probes are connected.

### Tare/diff-function:

Press button to set the difference display 'probe 1 - probe 2' to zero.

### Analog output:

0 ... 1V, freely adjustable (resolution 13bit, accuracy 0.05% at nom. temp.)

### Min-/Max-alarm:

The meas. values of probe 1 or 2, probes 1 and 2 or the temp. difference are constantly monitored reg. the min. and max. values 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
- Controlling function:** with the help of the switching module GAM3000 (optionally) electric equipment can be switched on/off or alarm memorised (p.r.t. catalogue page 43).

### Logger functions:

- manually:** 99 data sets (data recall via keyboard or interface)
  - cycle:** 9.999 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.