

TEMPERATURE

HANDHELD INSTRUMENTS

SOFTWARE

ACCESSORIES

ALARM / PROTECTION, LEVEL



	GMH 3710	GMH 3750	GMH 2710-T / -E	GMH 2710-K / -G	GMH 2710-F / -I	G 1700	G 1710 / 20 / 30	HD 2178.2	GTH 200 air
APPLICATION:									
Reference- / precision measurement	•	•	•	•	•		•	•	
Quality management	•	•	•	•	•	•	•	•	
Difference measurement									
Surface measurement								•	
Core temperature measurement	•	•		•	•	•	•	•	
High-temperature measurement	•	•						•	
Food, HACCP	•	•	•	•	•	•	•	•	
Water-proof			•	•	•	•	•		
EQUIPMENT:									
Sensor element	Pt100	Pt100	Pt1000	Pt1000	Pt1000	Pt1000	Pt1000	1 x Pt100/1000 1 x Thermo	Pt1000
Max. measuring range [°C]	-200 ... +850	-200 ... +850	-200 ... +200	-200 ... +250	-70 ... +250	-200 ... +450	-70 ... +250	-200 ... +650 (Pt) -200...+1300 (TE)	-25 ... +70
Min. Resolution [°C]	0.01	0.01	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Plug-in probe	•	•				•		•	
Measurement inputs	1	1	1	1	1	1	1	2	1
Min/Max, Hold, Auto-Off	•	•	•	•	•	•	•	•	•
Alarm (buzzer) / Data logger		•				• / -	• / -	- / •	
DEVICE INFORMATION:									
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INFORMATION

Background knowledge in temperature measurement

Resistance: Pt100, Pt1000

The sensor element's ohmic resistance changes with temperature. This can be evaluated by the displaying device and afterwards converted to the corresponding temperature. Especially for Pt100 one distinguishes between 2-, 3- and 4-wire connection. The 3- and 4-wire connection allows for automatic compensation of measuring error caused by the serial cable resistance.

Features:

- Highest accuracies possible
- High reproducibility of results with exchanged sensors, especially for Pt100 and Pt1000
- Standard measuring method for reference measurements

CONCLUSION:

a little slower, but highly precise
Particularly, optimised design in addition to seconds speed
- see our 1.5 mm needle probe

Thermocouple: Type K, Type N, Type S,...

The contact of two different metal compositions (e.g. NiCr and NiAl) results in a voltage between contact spot (probe) and the displaying device, which is almost proportional to the temperature difference.

This voltage is almost proportional to the temperature difference and gets evaluated and converted to a temperature by the displaying device.

Features:

- Very small sensors are possible, therefore:
 - Very short response times possible
 - Highly suitable for surface measurements
- Temperatures up to 1750 °C can be measured (depending on design of probe and type of used thermocouple)

CONCLUSION:

very fast, very flexible and wide measuring range



GMH 3201	GMH 3211	GMH 3221	GMH 3231	GMH 3251	HD 32-8-16	GTH 1150	GMH 1150	GTH 1170
					•			
•	•	•	•	•	•			•
			•	•	•			
•	•	•	•	•	•	•	•	•
•	•	•	•	•		•	•	•
•	•	•	•	•	•	•	•	•
•	•	•	•	•				

EQUIPMENT:

K	J, K, N, S, T, E, B	K	J, K, N, S, T, E, B	K, J, T, N, R, S, B, E	K	K	K
-220 ... +1372	-220 ... +1750	-220 ... +1372	-220 ... +1750	-200 ... +1800	-50 ... +1150	-50 ... +1150	-65 ... +1150
0.1	0.1	0.1	0.1	0.05	1	1	1
•	•	•	•	•	•	•	•
1	1	2	2	16	1	1	1
•	•	•	•	•			•
				•			

DEVICE INFORMATION:

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PT100 - HIGH-PRECISION THERMOMETER



AUTO OFF

AUTORANGE

ISO

HOLD

MIN MAX

0/S-CORR



HIGHLIGHTS:

- Reference meter for any calibration requirement
- Highest accuracy
- Resolution (0.01 °C)
- Incl. calibration protocol

ADDITIONAL FUNCTIONS BEI GMH 3750:



GMH 3710

Art. no. 600332

Pt100 4-Wire High Precision Thermometer

GMH 3750

Art. no. 600335

Pt100 4 wire - High Precision Thermometer with data logger

Application:

Reference measuring device in liquids, soft media, air / gases.

Specifications:

Measuring range:	-199.99 ... +199.99 °C or -200.0 ... + 850.0 °C -199.99 ... +199.99 °F or -328.0 ... +1562.0 °F
Resolution:	0.01 °C or 0.1 °C 0.01 °F or 0.1 °F
Linearisation:	Curve according to DIN EN 60751. GMH 3750 add. supports an userdefined curve.
Accuracy: (±1 digit) (at nominal temperature = 25 °C)	≤0.03 °C / 0.06 °F at resolution 0.01° ≤0.1 °C / 0.2 °F at resolution 0.1°
Temperature drift:	≤0.002 °C / K
Probe connection:	via 4-pin miniature DIN-plug, Pt100, 4-wire, in acc. to DIN EN 60751
Nominal temperature:	25 °C
Working temperature:	-25 ... +50 °C
Relative humidity:	0 ... +95 % RH (non-condensing)
Storage temperature:	-25 ... +70 °C
Display:	two 4½ digit LCDs (12.4 mm or 7 mm high), as well as additional arrows.
Pushbuttons:	6 membrane keys
Output:	3-pin jack connector Ø 3.5 mm, choice between serial interface or analog output
Serial interface:	direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS 3100 or GRS 3105 resp. USB 3100 N (p.r.t. accessories).
Analog output:	0 ... 1 V, freely adjustable (resolution 13 bit, accuracy 0.05 % at nominal temperature)
Power supply:	9 V-battery, as well as additional d.c. connector for external 10.5 ... 12 V voltage supply
Power consumption:	approx. 1 mA, approx. 300 h
Housing:	Impact-resistant ABS plastic housing, membrane keyboard, transparent panel, integrated pop-up clip
Dimensions:	142 x 71 x 26 mm (H x W x D)
Weight:	approx. 155 g
Scope of supply:	Device, battery, calibration protocol, manual

additional at GMH 3750:

Userdefined sensor curve:

50 interpolation points (GMH 3750 only)

Logger function (GMH 3750 only):

manual: 99 data sets (fetch data via buttons or interface)

cyclic: 16.384 data sets (fetch data via interface)

adjustable cycle time: 1 s ... 1 h

The logger is started or stopped by keypad or interface. The software GSOF3050 (see accessories) is available for comfortable read-out of logger data.

Accessories and spare parts:

MINIDIN 4S

Art. no. 601111

Mini-DIN plug, 4-pin, with lock and for self installation

USB 3100 N

Art. no. 601092

Interface Converter GMH3xxx <=>PC, USB

GSOF3050

Art. no. 601336

Windows software for GMH 3000 and GMH 5000 with logger (p.r.t. page 110)

GNG 10 / 3000

Art. no. 600273

Plug in power supply for devices of the series GMH 3XXX

ST-R1

Art. no. 601066

Protection bag, leather (p.r.t. page 111)

GKK 1100

Art. no. 601060

Case with punched lining for universal application

GMHKonfig

(visit our homepage: Download -> Software)

Software description:

Comfortable software to edit the user defined sensor curve of the GMH 3750.
(e.g. for calibration laboratories etc.)

Note:

Please note that for the interface communication with the device a interface converter
(USB 3100 N) is necessary (p.r.t. page 115).

SUITABLE PT100 MEASURING PROBE (4-WIRE)

Accuracy Pt100:

Sensor accuracy acc. to DIN EN 60751	
DIN cl. B: (area of validity: -50 ... +500 °C)	±0.3 °C at 0 °C
DIN cl. A: (area of validity: -30 ... +300 °C)	±0.15 °C at 0 °C
DIN cl. AA = 1/3 DIN cl. B: (area of validity: 0 ... +150 °C)	±0.1 °C at 0 °C
1/10 DIN cl. B: (area of validity: -50 ... +100 °C)	±0.03 °C at 0 °C

Upcharges special designs: (Deviations are possible based on the construction)

longer probe tube: upcharge per further starting 100 mm

longer cable (PVC): upcharge per further starting 100 mm

other cable material upon request

teflon covered probe tube

(for probes up to 200 mm)

(for probes used in acids and salt water, upper temperature range 250 °C)

waterproof probe handle (only possible with PVC cable -20 ... +105 °C)

higher sensor accuracy: DIN cl. AA, for Pt100, tolerances: 0.1 °C at 0 °C

higher sensor accuracy:

1/10 DIN cl. B, for Pt100-probes, tolerances: 0.03 °C at 0 °C

basic fee for custom made probe

-50 °C
+400 °C

GTF 401

Art. no. 600377

Immersion probe for liquids / gases

-50 ... +400 °C, DIN cl. B

-50 °C
+400 °C

GTF 401 DIN cl. AA

Art. no. 600378

Immersion probe for liquids / gases

-50 ... +400 °C, DIN cl. AA (±0.1 °C at 0 °C)



non-corrosive stainless steel tube (V4A) Ø 3 mm, plastic handle, anti-buckling glanding, approx. 1 m 4-wire PVC cable, 4-pin miniature DIN-type plug

Response time T₉₀ water 0.4 m/s approx. 10 s, air 2 m/s approx. 40 s

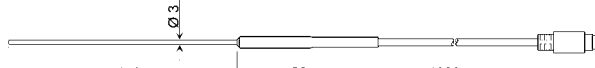
-50 °C
+400 °C

GTF 35

Art. no. 600391

Immersion probe for liquids / gases

-50 ... +400 °C, DIN cl. B



non-corrosive stainless steel tube (V4A) Ø 3 mm, shrink sleeving, approx. 1 m 4-wire PVC cable, 4-pin miniature DIN-type plug

Response time T₉₀ water 0.4 m/s approx. 10 s, air 2 m/s approx. 40 s

-50 °C
+400 °C

GES 401

Art. no. 600384

Insertion probe for soft media

-50 ... +400 °C, DIN cl. B

-50 °C
+400 °C

GES 401 DIN cl. AA

Art. no. 600385

Insertion probe for soft media

-50 ... +400 °C, DIN cl. AA (±0.1 °C at 0 °C)



stainless steel tube (V4A) Ø 3 mm with needle type prod, plastic handle, anti-buckling glanding, approx. 1 m 4-wire PVC cable, 4-pin miniature DIN-type plug

Response time T₉₀ water 0.4 m/s approx. 10 s, air 2 m/s approx. 40 s

-70 °C
+250 °C

GES 20-P4 DIN Kl. A

Art. no. 414061

Core temperature- / food probe with

compact teflon handle

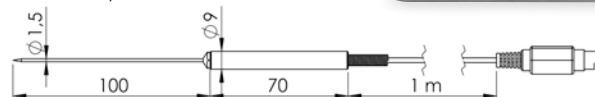
-70 ... +250 °C, Pt100 cl. A

GES 20-P4 DIN cl. B

Art. no. 413543

Core temperature- / food probe with compact teflon handle

-70 ... +250 °C, Pt100 cl. B



V4A tube with narrow insertion tip with 1.5 mm diameter, small Teflon handle, stainless steel anti-kink protection, 1 m Teflon cable, 4 pin mini-DIN plug connector

Response time T₉₀ water 0.4 m/s < 1 s, air 2 m/s approx. 12 s

NEW!

Advantages of sheath element Pt100:

- high temperature resistance
- sheath cable is bendable
- high shock resistance
- high service life

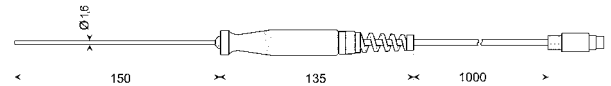
-50 °C
+400 °C

GTF 401 / 1.6

Art. no. 602066

Immersion probe with sheath element Pt100

-50 ... +400 °C, DIN cl. B



V4A sheath tube bendable, Ø 1.6 mm, plastic handle, antikink connection, approx. 1 m 4-pole cable, mini-DIN plug

Response time T₉₀ water 0.4 m/s < 2 s, air 2 m/s approx. 25 s

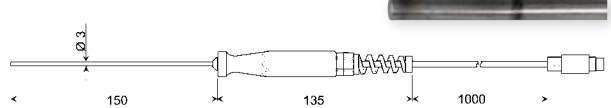
-50 °C
+400 °C

GTF 401 1/10 DIN

Art. no. 600379

Immersion probe with sheath element Pt100

-50 ... +400 °C, 1/10 DIN class B (±0.03 °C at 0 °C)



stainless steel tube (V4A) Ø 3 mm, plastic handle, anti-buckling glanding, approx. 1 m 4-wire PVC cable, 4-pin miniature DIN-type plug

Response time T₉₀ water 0.4 m/s < 5 s, air 2 m/s approx. 60 s

-200 °C
+600 °C

GTF 601

Art. no. 600387

Immersion probe with sheath element Pt100

-200 ... +600 °C, DIN cl. B

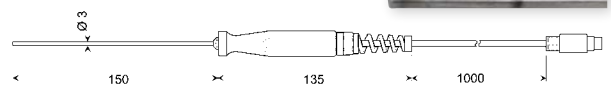
-200 °C
+600 °C

GTF 601 DIN cl. AA

Art. no. 600388

Immersion probe with sheath element Pt100

-200 ... +600 °C, DIN cl. AA (±0.1 °C at 0 °C)



V4A-flecible jacket tube, Ø 3 mm, plastic handle, anti-buckling glanding, approx. 1 m 4-wire PVC cable, 4-pin miniature DIN-type plug

Response time T₉₀ water 0.4 m/s < 5 s, air 2 m/s approx. 60 s

-25 °C
+70 °C

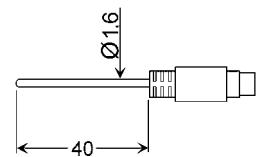
GLF 401 Mini

Art. no. 600395

Environmental temperature probe

without cable,

-25 ... +70 °C, DIN cl. A



V4A tube Ø 1.6 mm, FL = approx. 40 mm, 4-pin mini DIN-type plug

Response time T₉₀ air 2 m/s approx. 25 s

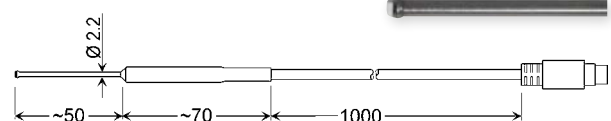
-50 °C
+200 °C

GOF 401 Mini

Art. no. 600396

Surface probe, frontal ceramic surface

-50 ... +200 °C, DIN cl. B



Frontal Pt100 ceramic plate 2 x 2.3 mm, V4A tube Ø 2.2 mm, approx. 1 m 4-wire PVC cable, 4-pin miniature DIN-type plug

Response time T₉₀ approx. 15 s

CALIBRATED SYSTEMS PT 100



General:

The overall error of a measuring consists of the sum of the instrument error and the probe error. To minimize the overall error, we offer calibrated and optimized 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 optimization is done via a special characteristic curve which is determined for each temperature probe separately and stored in the instrument (GMH 3750) or with probe adjusting via offset and slope input (GMH 3710). Because of the low measuring current there is no self heating effect of the sensor and the measurement is thermoelectrically compensated.

GMH 3750 / SET1

Art. no. 602690
Measuring set incl. ISO certificate of calibration

Specifications:	
Optimized measuring range:	-20 ... +70 °C
Temperature probe:	GTF 401 DIN cl. AA, Pt100, 4-wire
System accuracy:	better than 0.07 °C (at opt. range)
Calibration points:	-20 °C / 0 °C / +70 °C

GMH 3750 / SET2

Art. no. 602691
Measuring set incl. ISO certificate of calibration

Specifications:	
Optimized measuring range:	0 ... +250 °C
Temperature probe:	GTF 401 DIN cl. AA, Pt100, 4-wire
System accuracy:	better than 0.3 °C (at opt. range)
Calibration points:	0 °C / 100 °C / 250 °C

GMH 3710 / SET1

Art. no. 602687
Geräteset inkl. ISO-Kalibrierschein und Koffer

Specifications:	
Optimized measuring range:	-20 ... +70 °C
Temperature probe:	GTF 401 DIN cl. AA, Pt100, 4-wire
System accuracy:	better than 0.1 °C (at opt. range)
Calibration points:	-20 °C / 0 °C / +70 °C

GMH 3710 / DKD1

Art. no. 602689
Messest inkl. DAKS-Kalibrierschein nach DIN 17025

Specifications:	
Optimized measuring range:	-20 ... +70 °C
Temperature probe:	GTF 401 DIN cl. AA, Pt100, 4-wire
System accuracy:	better than 0.1 °C (at opt. range)
Calibration points:	-20 °C / 0 °C / +70 °C

Scope of supply:

Measuring device GMH 3750 or GMH 3710, temperature probe GTF 401 DIN Kl. AA, plastic case GKK 3500 and ISO certificate of calibration with 3 calibration points.

ROOM THERMOMETER



QUICK MEASUREMENT OF ROOM TEMPERATURE



COMFORTABLE HANDLING WITH ONLY ONE HAND

GTH 200 air

Art. no. 600251
Precision lounge thermometer

General:
The exposed but yet protected temperature sensor provides fast and precise measurements of ± 0.2 °C (at 20 °C). The device has undergone a streamlining process and is optimized to its key features, ensuring a comfortable and efficient handling with only one hand.

Application:
The room thermometer GTH 200 air is an essential tool for fast and precise temperature measurements in
• calibration rooms
• production / computer rooms
• living space
• laboratories, etc.

Specifications:	
Measuring range:	-25.0 ... +70.0 °C
Resolution:	0.1 °C
Accuracy:	(± 1 digit) (at nominal temperature) ± 0.5 % of meas. value ± 0.1 °C
Sensor:	Pt 1000, DIN class AA
Response time T_{90} :	approx. 5 s
Display:	4½ digit, 11 mm high LCD-display
Nominal temperature:	25 °C
Working temperature:	-20 ... +70 °C
Relative humidity:	0 ... 95 % RH (non-condensing)
Storage temperature:	-25 ... +70 °C
Power supply:	9 V battery
Power consumption:	max. 0.1 mA
Battery life:	approx. 6000 operating hours with alkaline battery
Housing:	impact-resistant ABS housing
Dimensions:	approx. 106 x 67 x 30 mm (H x W x D), additionally the sensor head at the front side, 35 mm long, Ø 14 mm, resulting total length 141 mm
Weight:	approx. 135 g incl. battery
Scope of supply:	device, battery, manual

PRECISE PT 1000 UNIVERSAL THERMOMETER



ALARM

AUTO OFF



HOLD

ISO

MIN MAX

0/5-CORR



HIGHLIGHTS:

- Modern and functional housing
- 3-line display / overhead display at the push of a button
- Backlighting
- Alarm function
- Waterproof (IP65 / IP67)
- Durable, long battery life

G 1710, G 1720, G 1730 WITH PERMANENTLY CONNECTED SENSOR SEE PAGE 24



Connection

DURABLE AND AFFORDABLE

G 1700

Art. no. 609826

Waterproof alarm thermometer for exchangeable probes BNC, without sensor

General:

The primary focus in the development of the new GMH 1000 series was placed on the essential functions of the measurement technology. Pure measurement with a focus on precision, speed and reliability packaged in a compact housing distinguish an impressive price/performance ratio. Made in Germany.

The new handheld measuring devices also impress with their ergonomic design, dust and water-protected design in accordance with IP 65/67 and the illuminated display. The compact thermometer is available with a practical BNC connection for interchangeable sensors. The device redefines our entry-level measurement class - calibration log included.

Application:

The highest-precision measurements in liquids and in air, for measurement of core temperatures (with insertion sensor); laboratories, quality assurance, service, food, etc.

Specifications:

Measuring range:	-200.0 ... +450.0 °C (-328.0 ... +842.0 °F) with plug-in sensor (Observe the permissible range of application of the sensor that is used!)
Accuracy (device): (at nominal temperature = 25 °C)	-20 ... +100 °C: $\pm 0.1 \text{ K} \pm 1 \text{ digit}$ otherwise 0.1 % of m. v. $\pm 2 \text{ digits}$
Operating conditions:	-20 ... +50 °C; 0 ... 95 % RH (non-condensing)
Display:	3-line unit incl. battery change indicator, with background light, protected by an unbreakable pane, overhead display at the push of a button
Power supply:	2 x AA battery, >5000 h operating time
Sensor:	Pt1000 2-wire can be used with BNC connection
Protection rating:	IP65 / IP67 (only with sensors identified as waterproof in the connected state)
Housing:	break-proof ABS housing
Dimensions:	108 x 54 x 28 mm (H x W x D) without sensor connection
Weight:	130 g (without sensor)
Scope of supply:	Device, calibration protocol, 2 x battery, manual

Accessories and spare parts:

GF 1T-T3-B-BNC

Art. no. 609549

Pt1000 handheld sensor, Pt1000 Class B, with BNC connector, Ø 3 mm, p.r.t. page 22

GF 1T-E3-B-BNC

Art. no. 609639

Pt1000 handheld sensor, Pt1000 Class B, with BNC connector, Ø 3 mm, p.r.t. page 23

GF 1T-E1.5-B-BNC

Art. no. 609645

Extra-thin Pt1000 insertion sensor, Pt1000 Class B, with BNC connector, Ø 1.5 mm, p.r.t. page 23

ST-G1000

Art. no. 611373

Device protection bag with 1 round cut-out

GB AA

Art.-Nr: 610049

Spare battery Mignon (AA) 1,5 V (2 batteries required)

Further sensors see page 21-23

SUITABLE PT1000 - MEASURING PROBES, 2-WIRE

Accuracy Pt1000:

sensor accuracy acc. to DIN EN 60751

DIN cl. B: (area of validity: -50 ... +500 °C)

 $\pm 0.3 \text{ °C at } 0 \text{ °C}$

DIN cl. A: (area of validity: -30 ... +300 °C)

 $\pm 0.15 \text{ °C at } 0 \text{ °C}$

DIN cl. AA = 1/3 DIN cl. B: (area of validity: 0 ... +150 °C)

 $\pm 0.1 \text{ °C at } 0 \text{ °C}$

Upcharges special designs: (Deviations are possible based on the construction)

longer probe tube

upcharge per further starting 100 mm

longer cable (silicone)

upcharge per further starting meter

other cable material upon request

Probe tube with Teflon coating

(for probes up to 200 mm)

(for probes used in acids and salt water, upper temperature range 250 °C)

casted waterproof probe handle

(only possible with PVC cable -20 ... +105 °C)

higher sensor accuracy:

DIN cl. AA, for Pt1000, tolerances: 0.1 °C at 0 °C

higher sensor accuracy:

1/10 DIN cl. B, for Pt1000-probes, tolerances: 0.03 °C at 0 °C

basic fee for custom made probe

All types of probes also available for Pt100 2- / 3- or 4-wire connection
We manufacture all types of probes according to your special desires - low priced and fast. Please contact us.

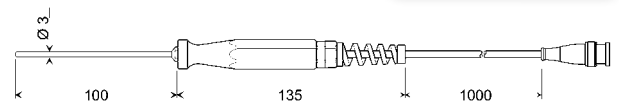


GTF 175-BNC

Art. no. 607165

Immersion probe for liquids / gases

-70 ... +250 °C, Pt1000 cl. B



non-corrosive V4A tube, Ø 3 mm, plastic handle, anti-buckling glanding, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : water 0.4 m/s < 2 s, air 2 m/s approx. 40 s

Advantages of sheath element Pt1000:

- high temperature resistance
- sheath cable is bendable
- high shock resistance
- high service life

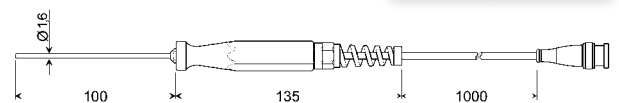


GTF 175 / 1.6-BNC

Art. no. 611323

Immersion probe with sheath element Pt1000

-70 ... +250 °C, Pt1000 cl. B



stainless steel tube (V4A), flexible, Ø 1.6 mm, plastic handle, anti-buckling glanding, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : water 0.4 m/s < 2 s, air 2 m/s approx. 25 s

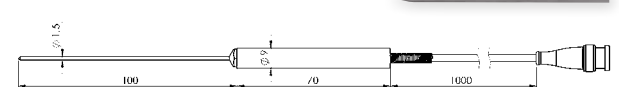


GES 20-T-B-BNC

Art. no. 607377

Core temperature- / food probe with compact teflon handle

-200 ... +250 °C, Pt1000 cl. B



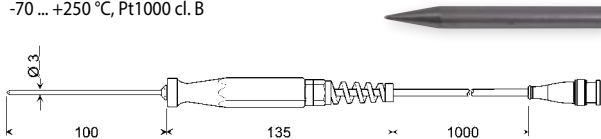
V4A tube with Ø 1.5 mm slim insertion tip, small teflon handle, stainless steel kink protection, 1 m Teflon cable, BNC connector

Response time T_{90} : water 0.4 m/s < 1 s, air 2 m/s approx. 12 s

SUITABLE PT1000 - MEASURING PROBES, 2-WIRE

-70 °C
+250 °C**GES 175-BNC**

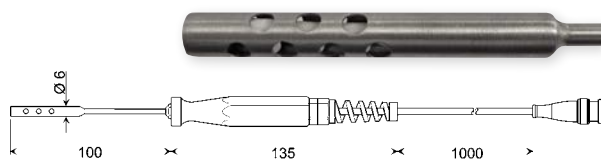
Art. no. 611324

Insertion probe for soft media
-70 ... +250 °C, Pt1000 cl. B

V4A tube Ø 3 mm with slim insertion tip, plastic handle, anti-buckling glanding, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : water 0.4 m/s < 2 s, air 2 m/s approx. 40 s-70 °C
+250 °C**GLF 175-BNC**

Art. no. 607162

Air / gas probe for clean media
-70 ... +250 °C, Pt1000 cl. B

(for dirty measurands use GTF 175), punched V4A protection tube, fast miniaturized Pt1000 mounted freely in tube, resulting in fast response, plastic handle, anti-buckling glanding, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : air 2 m/s approx. 15 s-70 °C
+250 °C**GOF 175-BNC**

Art. no. 607163

Surface probe for solid surface
-70 ... +250 °C, Pt1000 cl. B

2 x 2.3 mm ceramic Pt1000 sensor mounted at the tip, V4A tube, quadratic 3 x 3 mm at the tip, plastic handle, anti-buckling glanding, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : approx. 15 s-70 °C
+120 °C**GOF 175 Mini-BNC**

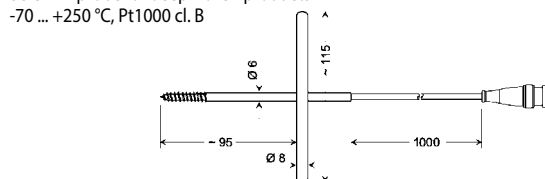
Art. no. 610399

Surface probe for solid surface
-70 ... +120 °C, Pt1000 cl. B

2 x 2.3 mm ceramic Pt1000 sensor mounted at the tip, V4A tube Ø 2.2 mm, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : approx. 15 s-70 °C
+250 °C**GGF 175-BNC**

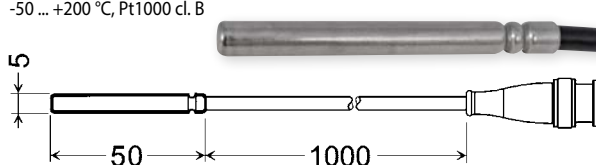
Art. no. 610397

Screw in probe for deep frozen products
-70 ... +250 °C, Pt1000 cl. B

to screw into deep-frozen products, etc. no predrilling required. V4A tube, 6 mm Ø with screw prod, 1 m highly flexible silicone cable, BNC connector

Response time T_{90} : approx. 15 s-50 °C
+200 °C**GTF 2000-BNC**

Art. no. 607164

Air / pipe probe
-50 ... +200 °C, Pt1000 cl. B

V4A-sensor sleeve Ø 5 mm, 1 m highly flexible silicone cable, BNC connector, each beginning meter upcharge

Response time T_{90} : water 0.4 m/s < 10 s, air 2 m/s approx. 60 s**Variant:****GTF 2000-WD**

Art. no. 476007

Water proof type, construction like described before, but cable of PVC and tube enclosed water proof. Max. 105 °C!

**HIGHLIGHTS:**

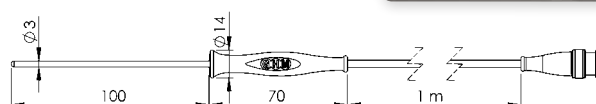
- Lightweight, manageable handle with optimised ergonomics and flexible cable
- Waterproof: can be completely immersed
- Temporary temperature resistance of up to 250 °C

-70 °C
+250 °C**GF 1T-T3-B-BNC**

Art. no. 609549

compact Pt1000 temperature probe with silicone handle
-70 ... +250 °C, Pt1000 cl. B**GF 1T-T3-AA-BNC**

Art. no. 609550

compact Pt1000 temperature probe with silicone handle
-70 ... +250 °C, Pt1000 cl. AA

Immersion probe Ø 3 mm made of V4A tube, black silicone handle from -50 ... +250 °C, 1 m Silicone cable from -50 ... +230 °C continuously / +250 °C for 2 h, sensor probe and silicone handle IP67, BNC connector

Response time T_{90} : water 0.4 m/s < 2 s, air 2 m/s approx. 40 s**Variants:****GF 1T-T3-B-LE**

Art. no. 609547

Pt1000 handheld sensor, Pt1000 cl. B, with loose ends

GF 1T-T3-AA-LE

Art. no. 609548

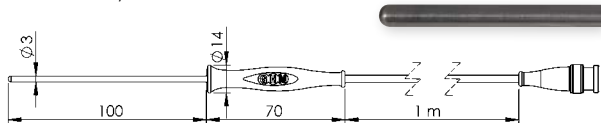
Precision Pt1000 handheld sensor, Pt1000 cl. AA, with loose ends

SUITABLE PT1000 - MEASURING PROBES, 2-WIRE

-200 °C
+250 °C

GF 1T-T3-B-BNC-MB4

Art. no. 611763

Pt1000 handheld probe for low temperatures
-200 ... +250 °C, Pt1000 cl. B

Immersion probe Ø 3 mm made of V4A tube, black silicone handle -50 ... +250 °C, 1 m silicone cable, -50 ... +230 °C permanently / +250 °C for 2 h, probe tip and silicone handle IP67, BNC plug

Response time T_{90} : water 0.4 m/s <2 s, air 2 m/s approx. 40 s

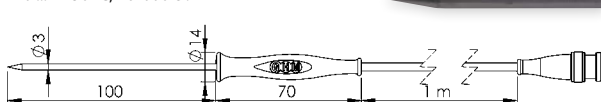
-70 °C
+250 °C

GF 1T-E3-B-BNC

Art. no. 609639

Insertion sensor, Ø 3 mm
-70 ... +250 °C, Pt1000 cl. B**GF 1T-E3-AA-BNC**

Art. no. 609640

Insertion sensor, Ø 3 mm
-70 ... +250 °C, Pt1000 cl. AA

Insertion probe Ø 3 mm made of V4A tube, black silicone handle from -50 ... +250 °C, 1 m silicone cable from -50 ... +230 °C continuously / +250 °C for 2 h, sensor probe and silicone handle IP67, BNC connector,

Response time T_{90} : water 0.4 m/s <2 s, air 2 m/s approx. 40 s**Variants:****GF 1T-E3-B-LE**

Art. no. 609637

Pt1000 insertion sensor, Pt1000 cl. B, with loose ends

GF 1T-E3-AA-LE

Art. no. 609638

Precision Pt1000 insertion sensor, Pt1000 Cl. AA, with loose ends

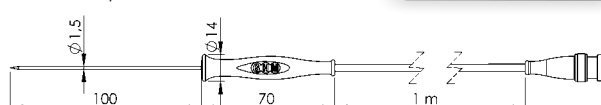
-70 °C
+250 °C

GF 1T-E1.5-B-BNC

Art. no. 609645

Extra-thin Pt1000 insertion sensor, Ø 1.5 mm
-70 ... +250 °C, Pt1000 cl. B**GF 1T-E1.5-A-BNC**

Art. no. 609646

Extra-thin Pt1000 insertion sensor, Ø 1.5 mm
-70 ... +250 °C, Pt1000 cl. A

Insertion probe Ø 1.5 mm made of V4A tube, black silicone handle from -50 ... +250 °C, 1 m silicone cable from -50 ... +230 °C continuously / +250 °C for 2 h, sensor probe and silicone handle IP67, BNC connector

Response time T_{90} : water 0.4 m/s <1 s, air 2 m/s approx. 12 s**Variants:****GF 1T-E1.5-B-LE**

Art. no. 609643

Extra-thin Pt1000 insertion sensor, Pt1000 Cl. B, with loose ends

GF 1T-E1.5-A-LE

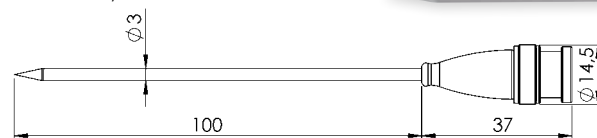
Art. no. 609644

Extra-thin Pt1000 insertion sensor, Pt1000 Cl. A, with loose ends

-70 °C
+250 °C

GF 2T-E3-B-BNC

Art. no. 609926

Pt1000 insertion sensor, BNC connector, without cable
-70 ... +250 °C, Pt1000 cl. B

Insertion probe Ø 3 mm made of V4A tube, IP67 in connected state, BNC connector with EPDM grommet up to +75 °C

Response time T_{90} : water 0.4 m/s <2 s, air 2 m/s approx. 40 s

-70 °C
+250 °C

GF 2T-E1.5-A-BNC

Art. no. 609824

Pt1000 insertion sensor, BNC connector, without cable
-70 ... +250 °C, Pt1000 cl. A

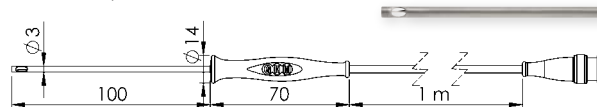
Insertion probe Ø 1.5 mm made of V4A tube, IP67 in connected state, BNC connector with EPDM grommet up to +75 °C

Response time T_{90} : water 0.4 m/s <1 s, air 2 m/s approx. 12 s

-70 °C
+250 °C

GF 1T-L3-B-BNC

Art. no. 611297

Pt1000 air sensor for clean media
-70 ... +250 °C, Pt1000 cl. B

(use GF 1T-T3 for contaminated media), perforated V4A tube Ø 3 mm, quick-reaction Pt1000 freely arranged, black silicone handle, up to +250 °C, 1 m silicone cable, up to +230 °C permanently / +250 °C for 2 h, BNC plug

Response time T_{90} : air 2 m/s approx. 15 s**Variant:****GF 1T-L3-B-LE**

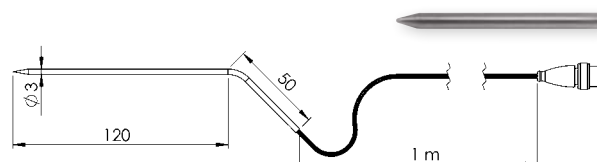
Art. no. 611298

Pt1000 air sensor, Pt1000 Class B, with loose ends

-70 °C
+400 °C

GF 3T-E3-BNC

Art. no. 611301

Barbecue insertion probe up to 400 °C
-70 ... +400 °C, Pt1000 cl. B

Insertion probe Ø 3 mm made of bent V4A tube, 1 m glass fibre insulated cable with stainless steel branding up to +350 °C continuously / +400 °C for 2 h, BNC plug

Response time T_{90} : water 0.4 m/s approx. 10 s, air 2 m/s approx. 40 s**Variant:****GF 3T-E3-B-LE**

Art. no. 611302

Pt1000 grill sensor, Pt1000 Class B, with loose ends

PRECISE UNIVERSAL THERMOMETER



HIGHLIGHTS:

- Modern and functional housing
- 3-line display / overhead display at the push of a button
- Backlighting
- Alarm function
- Waterproof (IP65 / IP67)
- Durable, long battery life
- High-quality sensors: complete with Pt1000 handheld sensor (up to 250 °C incl. handle and cable!)

G 1700 WITH BNC CONNECTION FOR
CHANGEABLE PROBES SEE PAGE 21

DURABLE AND AFFORDABLE

G 1710

Art. no. 609828

Waterproof alarm thermometer with immersion probe, Ø 3 mm

G 1720

Art. no. 609829

Waterproof alarm thermometer with insertion probe, Ø 3 mm

G 1730

Art. no. 609832

Waterproof alarm thermometer with insertion probe, Ø 1.5 mm

General:

The primary focus in the development of the new GMH 1000 series was placed on the essential functions of the measurement technology. Pure measurement with a focus on precision, speed and reliability packaged in a compact housing distinguish an impressive price/performance ratio. Made in Germany. The new handheld measuring devices also impress with their ergonomic design, dust and water-protected design in accordance with IP 65/67 and the illuminated display. The compact thermometer is available as a complete device including sensor with maximum overall precision. The device redefines our entry-level measurement class - calibration log included. The matching sensors can be used at temperatures of up to 250 °C (incl. handle and cable) and are distinguished by their compact design and small tube diameter. Integrated: High-quality Pt1000 sensors.

Application:

The highest-precision measurements in liquids and in air, for measurement of core temperatures (with insertion sensor); sensor handle and cable temperature range of up to 250 °C (permanent use temperature of 230 °C); laboratories, quality assurance, service, food, etc.

Specifications:

Measuring range:	-70.0 ... +250.0 °C (-94.0 ... +482.0 °F)
Accuracy: (at nominal temperature = 25 °C)	-20 ... +100 °C: $\pm 0.1 \text{ K} \pm 1 \text{ digit}$ -70 ... +250 °C: $\pm 0.2 \% \text{ of m. v.} \pm 2 \text{ digit}$
Operating conditions:	-20 ... +50 °C; 0 ... 95 % RH (non-condensing)
Display:	3-line unit incl. battery change indicator, with background light, protected by an unbreakable pane, overhead display at the push of a button
Power supply:	2 x AA battery, >5000 h operating time
Sensor	
G 1710:	Immersion sensor Ø 3 mm, Pt1000 permanent 2-wire connection, V4A, 1 m cable
G 1720:	Durable insertion sensor Ø 3 mm, Pt1000 permanent 2-wire connection, V4A, 1 m cable
G 1730:	Extra-thin insertion sensor Ø 1.5 mm, Pt1000 permanent 2-wire connection, V4A, 1 m cable
Response time T_{90}:	Ø 3 mm: water 0.4 m/s < 2 s; Ø 1.5 mm: water 0.4 m/s < 1 s
Protection rating:	IP65 / IP67
Housing:	Break-proof ABS housing
Dimensions:	108 x 54 x 28 mm (H x W x D) without sensor connection
Weight:	130 g (without sensor)
Scope of supply:	Device with integrated sensor, calibration log, 2 x battery, manual

Accessories and spare parts:**ST-G1000**

Art. no. 611373

Protection bag, leather

GB AA

Art.-Nr: 610049

Spare battery Mignon (AA) 1,5 V (2 batteries required)



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GTH 175 PRODUCTS

THEY ARE STILL AVAILABLE
ON REQUEST - CONTACT US
IMMEDIATELY!

HAY THERMOMETER



HIGHLIGHTS:

- Fiberglass probe 4 meter long
- Backlight
- Alarm function

HayTemp 1700

Art. no. 611377

Hay temperature measuring device

General:

Stored hay or straw, etc. is prone to overheating (depreciation) or even self-ignition, because of biological processes. This problem is even emphasized with higher moisture contents. Therefore a regular temperature check is crucial. The HayTemp 1700 optimally supports farmers as well as firefighters.

Application:

Hay or straw measurements at depth up to 4 m.

Specifications:

Device:	G 1700
Probe connection:	BNC, Pt1000, 2-wire
Measuring rod:	Fiberglass probe, approx. 4 m long, approx. 10 mm Ø, 1 measuring point at probe tip
Cutting tip:	screwable, double-edged tip with integrated temperature sensor
Weight:	Measuring rod with cutting tip approx. 600 g
Scope of supply:	Device, fiberglass rod, probe tip Pt1000, BNC cable (1.5 m), battery, manual

Accessories and spare parts:

G 1700

Art. no. 609826

Waterproof alarm thermometer for exchangeable probes BNC

Fiberglasrohr

Art. no. 604407

4 m, without probe and without tip

Sondenspitze

Art. no. 606889

With integrated temperature sensor

Kabel BNC/BNC

Art. no. 602855

Connection cable with 1.5 m length

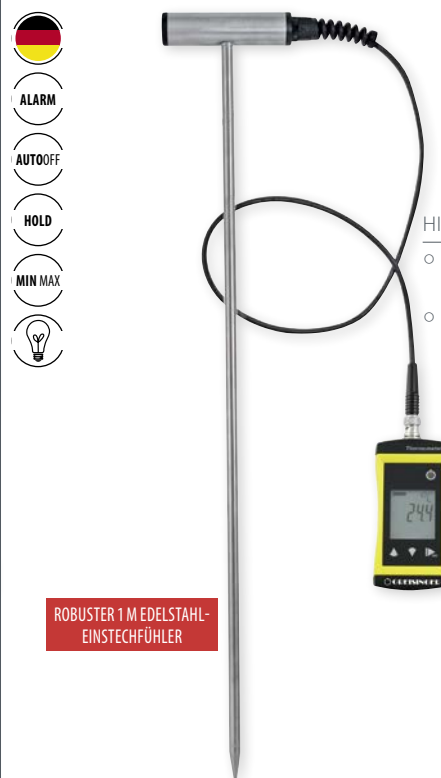
ST-G1000

Art. no. 611373

Protection bag, leather

Instruments for hay and straw humidity measurements: see BaleCheck page 58!

SOIL THERMOMETER



HIGHLIGHTS:

- robust probe made of stainless steel
- ergonomic T-handle probe designed for comfortable use

SoilTemp 1700

Art. no. 611374

robust soil / compost thermometer

General:

The universal display device combined with an extremely robust, but yet ergonomic T-handle probe made of stainless steel allows multiple measurements in soils or bulk materials.

Application:

Silo checking, measurements in soils, waste dumps, silages, compost, etc.

Specifications:

Device:	G 1700
Probe connection:	BNC, Pt1000, 2-wire
Measuring range:	-50.0 ... +250.0 °C
Measuring rod:	Stainless steel, 1000 mm x Ø 10 mm, 1 m connection cable with BNC plug, 350 g, probe handle designed for comfortable use
Scope of supply:	Device, GTF 40 T-1000, battery, manual

Accessories and spare parts:

G 1700

Art. no. 609826

Waterproof alarm thermometer for exchangeable probes BNC

GTF 40 T-620

Art. no. 606803

Stainless steel insertion probe, t-handle, FL 620 mm, with 1 m cable and BNC plug

GTF 40 T-1000

Art. no. 606791

Stainless steel insertion probe, t-handle, FL 1000 mm, with 1 m cable and BNC plug

GTF 40 T-1500

Art. no. 606792

Stainless steel insertion probe, t-handle, FL 1500 mm, with 1 m cable and BNC plug

ST-G1000

Art. no. 611373

Protection bag, leather

WATER-PROOF HACCP THERMOMETER WITH PT1000 PROBE



GMH 2710-T



GMH 2710-E



GMH 2710-K



GMH 2710-G

GMH 2710-F
GMH 2710-I

HIGHLIGHTS:

- Easy handling
- Battery life time > 6000 hours
- Device and probe are Water-proof and very robust
- Incl. calibration protocol

GMH 2710-T

Art. no. 602034

Temperature measuring device incl. universal probe

GMH 2710-E

Art. no. 602036

Temperature measuring device incl. insertion probe, Ø 3 mm

GMH 2710-K

Art. no. 602038

Temperature measuring device incl. Teflon insertion probe, Ø 3 mm

GMH 2710-G

Art. no. 602040

Temperature measuring device incl. mini Teflon probe, Ø 1.5 mm

GMH 2710-F

Art. no. 604035

Single-hand temperature measurement device with integrated immersion probe, Ø 3 mm, bendable

GMH 2710-I

Art. no. 604611

Single-hand temperature measurement device with integrated insertion probe, Ø 3 mm, bendable

General:

Accurate measurements for laboratories, quality management, and monitoring of production processes

Application:

Food (HACCP), medical / pharmaceutical science, chemistry, aquaristics, fish farming, aquaculture, etc.

GMH 2710-F/-I:

Optimal for measurements at places difficult to access, e.g.

- storage temperature control (especially food)
- temperature control for food measurements (HACCP)
- incoming inspection
- temperature measurements as part of legionellae tests

These measurements may cause problems with ordinary thermometers.

Specifications:

Measuring range:

GMH 2710-T / -E -199.9 ... +200.0 °C

GMH 2710-K / -G -199.9 ... +250.0 °C

GMH 2710-F / -I -70 ... +250 °C

Resolution:

0.1 °C

Accuracy:

at -20.0 ... +100.0 °C ±0.1 °C ±1 digit

at -70.0 ... +200.0 °C ±0.1 % of meas. value ±2 digit, sensor calibrated with device

Probe:

Pt1000, 2-wire, isolated, water- and steam-proof, permanently connected to device

GMH 2710-T

plastic handle 135 mm long

1 m PVC cable (max 100 °C) Ø 3 mm / length: 100 mm

GMH 2710-E

plastic handle 135 mm long, additionally with slim insertion tip for all soft media. 1 m PVC cable (max 100 °C) Ø 3 mm / length: 100 mm

GMH 2710-K

design type with big Teflon handle and 1 m Teflon cable, with slim insertion tip, handle and cable are resistant to temperatures up to 250 °C air temperature. Stainless steel kink protection, Ø 3 mm / length: 100 mm

GMH 2710-G

design type with small Teflon handle and 1 m Teflon cable, with slim insertion tip, handle and cable are suitable for permanent application at temperatures up to 250 °C. Stainless steel kink protection, Ø 1.5 mm / length: 100 mm

GMH 2710-F

V4A mantle tube, bendable, Ø 3 mm, length 150 mm

GMH 2710-I

V4A mantle tube with needle-shaped insertion tip, bendable, Ø 3 mm, length 150 mm

Response time T_{90} :

Ø 3 mm: water 0.4 m/s <2 s;

Ø 1.5 mm: water 0.4 m/s <1 s

Display:

two 4-digit LCD (12.4 mm and 7 mm)

Nominal temperature:

+25 °C

Working temperature:

-25 ... +50 °C

Storage temperature:

-30 ... +70 °C

Power supply:

2 x AAA batteries

Battery life:

>6000 hours

Protection rating:

IP65 / IP67

Housing:

made of impact-resistant ABS

Dimensions:

154 x 81 x 31 mm (H x W x D)

Weight:

215 g (incl. battery and probe)

Scope of supply:

device incl. probe, battery, calibration protocol, manual

Accessories and spare parts:

K 50 BL

Art. no. 601352

Silicone protection cover blue

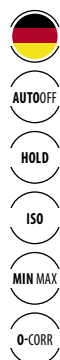
K 50 RE

Art. no. 607456

Silicone protection cover red



PRECISION QUICK-RESPONSE THERMOMETER FOR THERMOCOUPLES



VERY QUICK RESPONSE TIME! TIME!



GMH 3211 connection

NEW!

GMH 3201

Art. no. 474930

Precision quick response thermometer Type K

GMH 3211

Art. no. 611381

Precision quick response thermometer, universal

HIGHLIGHTS:

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

GMH 3221, GMH 3231 AND GMH 3251:

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

ADDITIONAL FUNCTIONS

GMH 3221 / 3231:



GMH 3251:



SUITABLE PROBES P.R.T. P. 32



GMH 3221 connection



GMH 3231 / 51 connection

GMH 3221

Art. no. 611384

Precision quick response thermometer, 2 channel Type K

GMH 3231

Art. no. 611382

Precision quick response thermometer, 2 channel universal

GMH 3251

Art. no. 611383

Precision quick response thermometer, 2 channel, logger

Specifications:	GMH 3201	GMH 3211	GMH 3221	GMH 3231	GMH 3251
Thermocouples:	K	K, J, T, N, S, E, B	K	K, J, T, N, S, E, B	K, J, T, N, S, E, B
Measuring channels:	1 thermocouple input (type K balancing material)		2 thermocouple inputs (type K balancing 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 NEW	-	-60.0 ... +850.0 °C NEW	-60.0 ... +850.0 °C NEW
Type B:	-	+300 ... +1750 °C NEW	-	+300 ... +1750 °C NEW	+300 ... +1750 °C NEW
Accuracy: (at nominal temperature)	±(0.5 °C + 0.2 % of m.v.)	±(0.5 °C + 0.2 % of m.v.) (J, K, N, T, E) ±(0.8 °C + 0.4 % of m.v.) (S, B)	±(0.5 °C + 0.2 % of m.v.)	±(0.5 °C + 0.2 % of m.v.) (J, K, N, T, E) ±(0.8 °C + 0.4 % of m.v.) (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	manual: 1.000 data sets cyclic: 10.000 data sets
Probe connections (miniature flat plug):	1	1	2	2	2
Serial interface:	-	3-pin jack connector Ø 3.5 mm	-	3-pin jack connector Ø 3.5 mm	3-pin jack connector Ø 3.5 mm
Difference measurement:			Temperature difference probe 1 - probe 2 can be displayed if 2 probes are connected.		
Compensation value for surface measurements:	-	adjustable	-	adjustable	adjustable
Power supply:	9 V battery	9 V battery, d.c. connector	9 V battery	9 V battery, d.c. connector	9 V battery, d.c. connector
Battery life:	approx. 500 h	approx. 500 h	approx. 300 h	approx. 300 h	approx. 300 h

PRECISION QUICK-RESPONSE THERMOMETER FOR THERMOCOUPLES

General specifications:

Resolution:	0.1 °C or 1 °C
Working temperature:	-25 ... +50 °C
Display:	two 4½-digit LCDs (12.4 mm and 7 mm high)
Serial interface (except GMH 3201 and GMH 3221):	3-pole jack socket Ø 3.5 mm, direct connection to RS232 or USB interface of a PC via electrically isolated interface adapter GRS 310x or USB 3100 N (p.r.t. accessories).
Data logger (GMH 3251 only):	manual: 1.000 data sets (fetch data via buttons or interface) cyclic: 10.000 data sets (fetch data via interface) adjustable cycle time: 1 s ... 1 h The logger is started or stopped by keypad or interface. The software GSOF 3050 (see accessories) is available for comfortable read-out of logger data, see page 110.
Housing:	Impact-resistant ABS plastic housing, 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 supply:	device, battery, calibration protocol, manual

Features (except GMH3201 and -21):

A correction factor can be entered for each probe connection for surface measurements. This optimally corrects the temperature difference of the measured surface relative to the environmental temperature in order to receive the most precise surface measurements possible, even in applications where infrared thermometers have their shortcomings, e.g. on shiny metallic surfaces!

Accessories and spare parts:

GB 9 V

Art. no. 601115

Spare battery 9V, type IEC 6F22

GNG 10/3000

Art. no. 600273

Plug-in power supply (220 / 240 V, 50 / 60 Hz), output voltage: 10.5 V / 10 mA, suitable for devices with power supply socket

ST-RN

Art. no. 601074

Nappa leathern device protection bag with 2 round cut-outs for sensor connection (1 x round, 1 x rectangular)

ST-N2

Art. no. 601072

Nappa leathern device protection bag with 2 rectangular cut-outs for sensor connection

GKK 1100

Art. no. 601060

Case with punched lining for universal application, 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 measuring data storable
- for thermocouples type K, J, T, N, R, S, B, E

16 INTERCHANGEABLE
SENSORS CONNECTABLE

HD32-8-16

Art. no. 700077

Precision-Thermocouple-Thermometer with 16 inputs and logger

General:

Ideal for complex temperature measuring tasks in which multiple temperature values must be measured, recorded and displayed at the same time.

Application:

Testing systems, drying and baking ovens, air conditioning control units, production and manufacturing processes, temperature monitoring in concrete or asphalt on roads and buildings

Specifications:

Thermocouples:	K, J, T, N, R, S, B, E	
Resolution:	0.05 °C or 0.1 °C	
Measuring range: (depends on thermocouple)	Type K: -200 °C ... +1370 °C	Type R: +200 °C ... +1480 °C
	Type J: -100 °C ... +750 °C	Type S: +200 °C ... +1480 °C
	Type T: -200 °C ... +400 °C	Type B: +200 °C ... +1800 °C
	Type N: -200 °C ... +1300 °C	Type E: -200 °C ... +750 °C
Accuracy: (depends on thermocouple)	±0.1 ... ±0.4 °C	
Number of inputs:	16	
Operating conditions:	-5 ... +50 °C working temperature, -25 ... +65 °C storage temperature, 0 ... 90 % relative humidity	
Logger function:	800.000 data sets	
Display:	LCD display with background illumination, 128 x 64 pixel, simultaneous display of 4 inputs	
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 mains adapter or via PC interface	
Housing:	ABS, IP64	
Dimensions:	220 x 180 x 50 mm	
Weight:	1100 g	
Scope of supply:	Device, DeltaLog9 Software, carrying strap, batteries, manual	

Accessories and spare parts:

SWD-10

Art. no. 700039

Plug in power supply for devices of the HD-handhelds, 12 V DC 1.0 A

CP22

Art. no. 700078

Interface Converter HD32-8 <=> PC, USB

Note:

Connection cable for PC and temperature sensors (page 31) must be ordered separately.

QUICK RESPONSE THERMOMETER TYPE K



GTH 1150



GMH 1150

GTH 1150

Art. no. 611499

Type K fast thermometer accessories not included, for plug-in probes

GMH 1150

Art. no. 600045

Type K fast thermometer, accessories not included, for plug-in probes

Application:

Quick response measurements on surfaces, in liquids, soft media, air/gases, at the smallest objects etc. For all applications where a resolution of 1 °C is sufficient.

Specifications:

Measuring range:	-50 ... +1150 °C
Resolution:	1 °C
Accuracy: (at nominal temperature = 25 °C)	≤1 % ±1 digit (from -20 ... +550 and 920 ... 1150 °C) ≤1.5 % ±1 digit (from 550 ... 920 °C) from -20 ... -50 °C according to attached correction table
Probe connection:	Thermoelectric-voltage-free miniature socket, suitable for all type K (NiCr-Ni) measuring sensors with mini flat plug
Display:	3½ digit, approx. 13 mm high LCD
Working temperature:	0 ... 45 °C
Storage temperature:	-20 ... +70 °C
Power supply:	9 V battery (included), Additional at GMH 1150: d.c. connector for external 10.5 ... 12 V direct voltage supply. (suitable power supply: GNG10/3000)
Battery life:	approx. 700 operating hours
Dimensions:	GTH 1150: approx. 106 x 67 x 30 mm (H x W x D). Impact resistant ABS plastic housing GMH 1150: approx. 142 x 71 x 26 mm (H x W x D). Impact-resistant ABS plastic housing, membrane keyboard, transparent panel, integrated pop-up clip
Weight:	approx. 150 g (GTH 1150), approx. 160 g (GMH 1150)
Scope of supply:	Device, battery, manual

Accessories and spare parts:**GTF 300**

Art. no. 600039

wire probe

additional type K probes (NiCr-Ni) p.r.t. page from 31

GB 9 V

Art. no. 601115

Spare battery 9V, type IEC 6F22

GNG 10 / 3000

Art. no. 600273

Plug in power supply for devices of the series GMH 3XXX

ST-KN

Art. no. 601080

device protection bag, suitable for GTH 1150

ST-N1

Art. no. 601070

device protection bag, suitable for GMH 1150

PRECISION QUICK RESPONSE THERMOMETER TYPE K

**GTH 1170**

Art. no. 600000

Precision quick response thermometer, universal, accessories not included, for plug-in probes

Application:

Quick response measurements on surfaces, in liquids, air/gases etc.

Specifications:

Measuring range:	-65.0 ... +199.9 °C or -65 ... +1150 °C (-85.0 ... +199.9 °F or -85 ... +1999 °F)
Resolution:	0.1 °C or 1 °C (0.1 °F or 1 °F)
Accuracy: ±1 digit (at nominal temperature)	-65.0 ... +199.9 °C: ±0.05 % of m.v. ±0.2 % FS -65 ... +1150 °C: ±0.1 % of m.v. ±0.2 % FS
Temperature drift:	0.01 %/K
Point of comparison:	±0.3 °C
Probe connection:	Thermoelectric-voltage-free miniature socket, suitable for all type K (NiCr-Ni) measuring sensors with mini flat plug
Display:	3½ digit, LCD display approx. 13 mm high
Working temperature:	-25 ... +50 °C
Storage temperature:	-25 ... +70 °C
Power supply:	9 V battery
Measuring interval:	approx. 3 meas. / s
Battery life:	approx. 2000 operating hours
Dimensions:	approx. 106 x 67 x 30 mm (H x W x D), impact resistant ABS plastic housing
Weight:	approx. 135 g (GTH 1170)
Scope of supply:	Device, battery, manual

Accessories and spare parts:

additional type K probes (NiCr-Ni) p.r.t. page from 31

GB 9 V

Art. no. 601115

Spare battery 9V, type IEC 6F22

ST-KN

Art. no. 601080

device protection bag, suitable for GTH 1150

GTH 1170-GTF 900-WPT

Art. no. 602675

Complete Solution incl. immersion probe
GTF 900 and ISO certificate of calibration WPT
(with meas. points: 0 / 100 / 250 / 500 °C)
and case GKK 1100.



THERMOMETER/DATALOGGER WITH PT100 AND THERMOCOUPLE INPUT



HIGHLIGHTS:

- Input for Pt100 sensor (SICRAM plug) and thermocouple
- Data logger function
- USB connection and software for realtime monitoring



SUITABLE THERMOCOUPLES OF TYPE K, J, T, N, E AND CORRESPONDING SENSOR SPECIFICATIONS STARTING ON PAGE 32

HD 2178.2

Art. no. 474932

Thermometer with two inputs (1 x Pt100, 1x thermocouple) and logger

General:

The HD2178.2 can be used with Pt 100 sensors and with thermocouples. Pt 100 sensors with SICRAM plugs (8-pin DIN 45326 plug) can be connected to connection B. The SICRAM plug already has all of the sensor data, including serial number and calibration data. A thermocouple of the type K, J, T, N and E with miniature flat plug can be connected to connection A. The data logger stores up to 80,000 measurements, which can be transferred conveniently via USB cable and supplied software. Battery operation, large display and durability make the HD2178.2 a perfect all-rounder. Of course, the HD2178.2 also offers MAX, MIN, AVG, REL and HOLD functions.

Application:

With the large variety of available sensors (as contact, immersion, insertion or air temperature sensors), a multitude of applications in the widest range of sectors opens up.

Specifications:

Display:	LCD, 52 x 42 mm
Operating temperature:	-5 ... +50 °C (Instrument)
Protection rating:	IP 66
Power supply:	4 batteries 1.5 V type AA (Optional mains adapter)
Unit of measurement:	°C or °F
Security of stored data:	Unlimited, independent of battery charge conditions
Measured values storage:	2000 pages each one containing 40 samples, quantity 80000 samples in total
Storage interval:	1, 5, 10, 15, 30 s; 1, 2, 5, 10, 15, 20, 30 min; 1 h
USB interface:	USB 2.0, type B mini USB connection
Housing:	Material: ABS plastic, rubber
Dimensions:	185 x 90 x 40 mm
Weight:	470 g (complete with batteries)
Scope of supply:	Device including batteries, case for HD 2178.2, DeltaLog 9 software. Measuring probes, connecting cable and mains adapter are not included in the scope of supply.

Pt100 sensor with SICRAM plug selection
(Additional versions available on request, including ball temperature)

Example: TP 472 I (immersion sensor)



Immersion probe, -196 ... +500 °C, ±0.25 °C (-196 ... +300 °C), Ø 3mm, sensor length 300 mm, cable length 2 m

Accessories and spare parts:

CP23

Art. no. 475163

USB connection cable, USB 2.0, Mini USB socket type B

SWD10

Art. no. 700039

Plug in power supply for devices of the HD-handhelds, 12 V DC 1.0 A

Recommended accessories (PT100 sensor with SICRAM plug):

additional type K probes (NiCr-Ni) p.r.t. page from 31

TP 472 I

Art. no. 475642

Immersion probe Ø3 mm, FL = 300 mm, -196 ... +500 °C, Pt100, cable length 2 m, measuring range: -196 ... +500 °C, Accuracy: ±0.25 °C (-196 ... +300 °C), ±0.5 °C (+300 ... +500 °C)

TP 472 I.O

Art. no. 415039

Immersion probe, Pt100, Ø 3 mm, length 230 mm, cable length 2 m, measuring range: -50 ... +300 °C, Accuracy: ±0.25 °C (-50 ... +300 °C)

TP 473 P.I

Art. no. 475643

Insertion probe Ø4 mm, FL = 150 mm, -50 ... +400 °C, Pt100, cable length 2 m, Measuring range: -50 ... +400 °C, Accuracy: ±0.25 °C (-50 ... +300 °C), ±0.5 °C (+300 ... +400 °C)

TP 473 P.O

Art. no. 475644

Insertion probe Ø4 mm, FL = 150 mm, -50 ... +300 °C, Pt100, cable length 2 m, Measuring range: -50 ... +300 °C, Accuracy: ±0.25 °C (-50 ... +300 °C)

TP 474 C.O

Art. no. 475645

Surface probe, frontal contact surface 5 mm, Pt100, Ø 4 mm, length 230 mm, cable length 2 m, Measuring range: -50 ... +300 °C, Accuracy: ±0.3 °C (-50 ... +300 °C)

TO 475 A.O

Art. no. 475646

Air probe Ø4 mm for clean media, Pt100, length 230 mm, cable length 2 m, Measuring range: -50 ... +250 °C, Accuracy: ±0.3 °C (-50 ... +250 °C)

TP47

Art. no. 475648

Sicram Plug for connection of Pt sensors, without SICRAM connection (4-wire direct Pt 100, 2-wire Pt 1000)

TYPE K - MEASURING PROBE (NICR-NI) WITH DIN-TYPE FLAT-PIN PLUG

Accuracy Thermocouples:

Sensor accuracy acc. to DIN EN 60584-1:2014-07

Class 1 for Type K: $\pm 1.5^\circ\text{C}$ at range $-40 \dots +375^\circ\text{C}$ **Class 1 for Type N:** $\pm 1.5^\circ\text{C}$ at range $-40 \dots +375^\circ\text{C}$ **Class 1 for Type S:** $\pm 1^\circ\text{C}$ at range $0 \dots 1100^\circ\text{C}$

basic fee for custom made probe

basic fee for custom made probe GF1TK / GF2TK / GF3TK

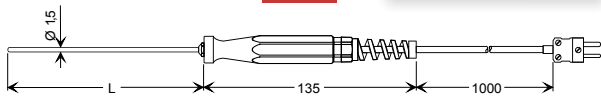
We reserve the right to a minimum quantity surcharge for custom-made items

-65°C
 $+550^\circ\text{C}$

GTF 400

Art. no. 600502

Immersion probe for liquids / gases

 $-65 \dots +550^\circ\text{C}$ 

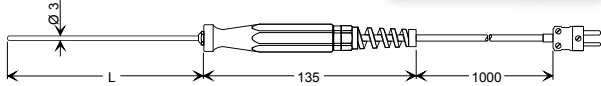
inexpensive, fast, elastic (rigid)
non-corrosive V4A tube $\varnothing 1.5$ mm, $L=130$ mm, plastic handle, anti-buckling
glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : water 0.4 m/s < 1 s

-65°C
 $+1000^\circ\text{C}$

GTF 900

Art. no. 600505

Immersion probe for liquids / gases up to 1000°C $-65 \dots +1000^\circ\text{C}$ 

inexpensive, elastic (rigid)
non-corrosive V4A tube $\varnothing 3$ mm, $L=130$ mm, plastic handle, anti-buckling
glanding, 1 m silicone cable, miniature flat plug

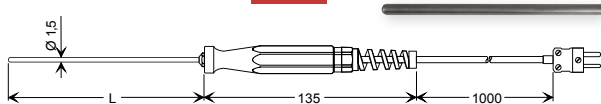
Response time T_{90} : water 0.4 m/s < 2 s, air 2 m/s approx. 40 s

-200°C
 $+1150^\circ\text{C}$

GTF 1200

Art. no. 600507

Immersion probe with sheathed thermocouple, for highest temperatures

 $-200 \dots +1150^\circ\text{C}$ 

Inconel 600 jacket tube $\varnothing 1.5$ mm, flexible, $L=150$ mm, plastic handle, anti-
buckling glanding, 1 m silicone cable, miniature flat plug

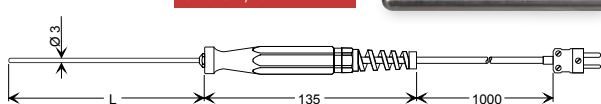
Response time T_{90} : water 0.4 m/s approx. 3 s

-200°C
 $+1150^\circ\text{C}$

GTF 1200/300

Art. no. 600510

Immersion probe with sheathed thermocouple, for highest temperatures

 $-200 \dots +1150^\circ\text{C}$ 

Inconel 600 jacket tube $\varnothing 3$ mm, flexible, $L=300$ mm, plastic handle, anti-
buckling glanding, 1 m silicone cable, miniature flat plug

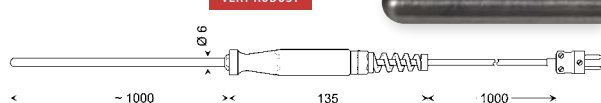
Response time T_{90} : water 0.4 m/s approx. 5 s

-200°C
 $+1000^\circ\text{C}$

GTF 1000 AL

Art. no. 600512

Immersion probe, sheathed thermocouple for aluminum smelting etc.

 $-200 \dots +1000^\circ\text{C}$ 

for aluminium melt, non-ferrous metal, etc.
V4A tube $\varnothing 6 \times 1.4$ mm, $L=1000$ mm rigid, additional internal mantle thermo-
couple, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature
flat plug

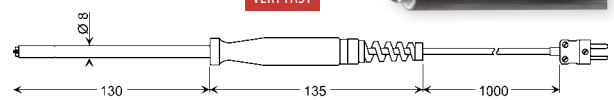
Response time T_{90} : water 0.4 m/s approx. 30 s

-65°C
 $+900^\circ\text{C}$

GOF 130

Art. no. 600490

Surface probe with type K coil spring

 $-65 \dots +900^\circ\text{C}$ 

for any solid surface;
2 laser welded NiCr-Ni resilient springs, V4A-tube $\varnothing 8$ mm, plastic handle,
anti-buckling glanding, 1 m silicone cable, miniature flat plug

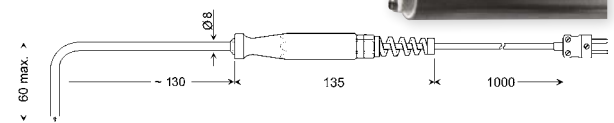
Response time T_{90} : approx. 5 s

-65°C
 $+900^\circ\text{C}$

GOF 900 HO

Art. no. 600500

Surface probe with type K coil spring, gebogen

 $-65 \dots +900^\circ\text{C}$ 

for any solid surface
2 laser welded NiCr-Ni resilient springs, bendable V4A-tube, plastic handle,
anti-buckling glanding, 1 m silicone cable, miniature flat plug

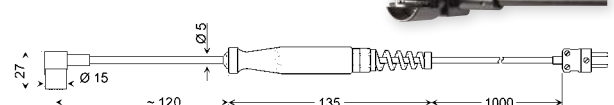
Response time T_{90} : approx. 5 s

-65°C
 $+400^\circ\text{C}$

GOF 200 HO

Art. no. 600492

Surface probe with tc spring, fast, angled

 $-65 \dots +400^\circ\text{C}$ 

for fastest measurements in small gaps
Small elbow-type, flexible thermocouple tapes, plastic handle, anti-buckling
glanding, 1 m silicone cable, miniature flat plug

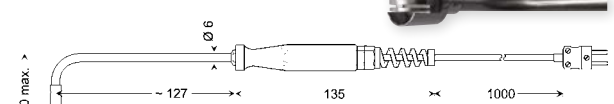
Response time T_{90} : approx. 2 s

-65°C
 $+400^\circ\text{C}$

GOF 400 HO

Art. no. 600494

Surface probe with tc spring, fast, angled

 $-65 \dots +400^\circ\text{C}$ 

for fastest measurements
Small elbow-type, flexible thermocouple tapes, plastic handle, anti-buckling
glanding, 1 m silicone cable, miniature flat plug

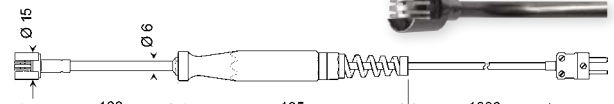
Response time T_{90} : approx. 2 s

-65°C
 $+400^\circ\text{C}$

GOF 400 VE

Art. no. 600496

Surface probe with tc spring, fast

 $-65 \dots +400^\circ\text{C}$ 

for fastest measurements, flexible thermocouple tapes, plastic handle, anti-
buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : approx. 2 s**MH 400VE**

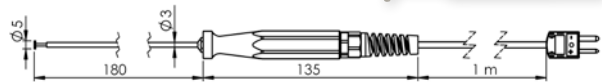
Art. no. 607502

Magnet holder, heat resistant up to 100°C 

TYPE K - MEASURING PROBE (NICR-NI) WITH DIN-TYPE FLAT-PIN PLUG

-65 °C
+500 °C**GOF 501**

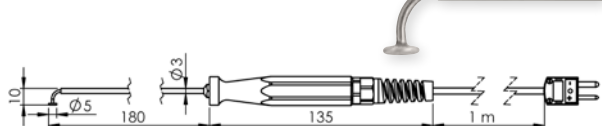
Art. no. 475077

Surface probe for solid with silver measuring surface
-65 ... +500 °C

for any straight and solid surface; fixed silver plate, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : approx. 3 s-65 °C
+500 °C**GOF 501 HO**

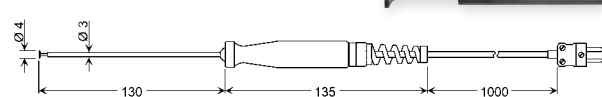
Art. no. 475072

Surface probe with silver measuring surface, angled
-65 ... +500 °C

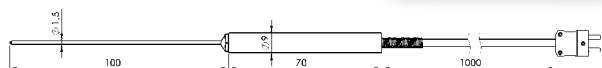
for any straight and solid surface, small elbow-type, fixed silver plate, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : approx. 3 s-65 °C
+500 °C**GOF 130 CU**

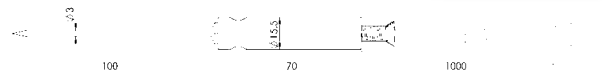
Art. no. 600486

Surface probe for solid surfaces, fast
-65 ... +500 °Cfor any straight and solid surface
Spring-loaded copper plate, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug**Response time T_{90} :** approx. 5 s-65 °C
+550 °C**GES 20-K**

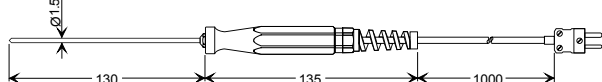
Art. no. 602591

Core temperature- / food probe with compact teflon handle
-65 ... +550 °CUse for canteen kitchen, bakeries, butcher's shops, etc.
V4A tube with Ø 1.5 mm slim insertion tip, small Teflon handle, stainless steel kink protection, 1 m Teflon cable, miniature flat plug**Response time T_{90} :** water 0.4 m/s < 1 s, air 2 m/s approx. 12 s-50 °C
+250 °C**GES 21-K**

Art. no. 600074

Core temperature- / food probe
-50 ... +250 °C, potential freeUse for canteen kitchen, bakeries, butcher's shops, etc.
V4A tube Ø 3 mm with needle-shaped insertion tip, big white teflon handle, stainless steel kink protection, 1 m Teflon cable, miniature flat plug**Response time T_{90} :** water 0.4 m/s < 2 s, air 2 m/s approx. 40 s-65 °C
+550 °C**GES 130**

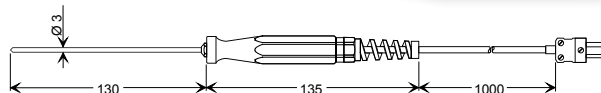
Art. no. 600514

Insertion probe for soft media
-65 ... +550 °C

V4A tube with Ø 1.5 mm slim insertion tip, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : water 0.4 m/s approx. 1 s, air 2 m/s approx. 1.5 s-65 °C
+550 °C**GES 500**

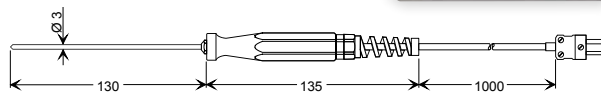
Art. no. 600516

Insertion probe for soft media
-65 ... +550 °C

V4A tube with Ø 3 mm with needle-shaped insertion tip, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : water 0.4 m/s < 2 s-65 °C
+1000 °C**GES 900**

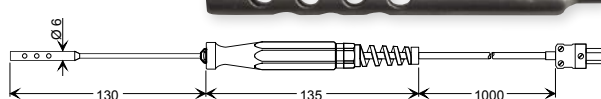
Art. no. 600518

Insertion probe for soft media
-65 ... +1000 °C

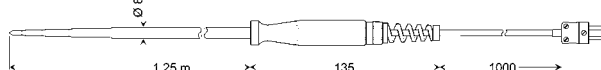
Spring-loaded V4A tube with slim Ø 3 mm insertion tip, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : water 0.4 m/s approx. 5 s-65 °C
+600 °C**GTL 130**

Art. no. 602304

Air / gas probe
-65 ... +600 °Cfor room temperature, flue gases, etc.
perforated V4A protective tube, fused thermocouple wires arranged behind, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug**Response time T_{90} :** air 2 m/s approx. 15 s-65 °C
+200 °C**GKF 125**

Art. no. 600520

Probe for compost, grain
-65 ... +200 °Csplit-second response time, yet highly resilient
V4A tube Ø 8 mm reduced to Ø 3 mm at the front, plastic handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug**Response time T_{90} :** water 0.4 m/s approx. 6 s-50 °C
+250 °C**GTF 40 K-620**

Art. no. 610829

Stainless steel insertion probe, t-handle
-50 ... +250 °C, Type K, class 1, FL 620 mm**GTF 40 K-1000**

Art. no. 475184

Stainless steel insertion probe, t-handle
-50 ... +250 °C, Type K, class 1, FL 1000 mm**GTF 40 K-1500**

Art. no. 475185

Stainless steel insertion probe, t-handle
-50 ... +250 °C, Type K, class 1, FL 1500 mm

Stainless steel tube with 10 mm diameter and insertion tip, robust and ergonomic stainless steel T-handle, anti-buckling glanding, 1 m silicone cable, miniature flat plug

Response time T_{90} : water 0.4 m/s approx. 6 s

TYPE K - MEASURING PROBE (NICR-NI) WITH DIN-TYPE FLAT-PIN PLUG

-65°C
+550°C

GAF 200

Art. no. 600522
Injection or asphalt probe
-65 ... +550 °C



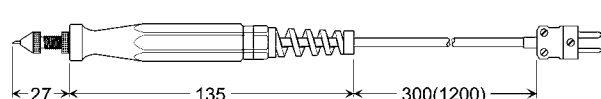
for liquid or soft media etc.
V4A tube 8 mm dia. reduced to 3 mm, plastic handle, anti-buckling glanding, spiral cable stretchable to 1.2 m, DIN-type flat-pin plug

Response time T_{90} : water 0.4 m/s approx. 6 s

-50°C
+200°C

GRF 200

Art. no. 604663
Tire probe
-50 ... +200 °C



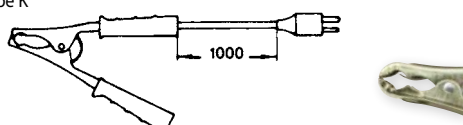
fast response insertion probe with stop screw (needle adjustable 0 ... approx. 14 mm). Suitable for measuring temperature of tires and other soft media. Plastic handle, anti-buckling glanding, spiral cable (approx. 1.2 m drawn out), miniature flat plug

Response time T_{90} : approx. 5 s

-65°C
+150°C

GTZ 300

Art. no. 603287
Clip-on probe, type K
-65 ... +150 °C



for temperature measurements at tube surfaces
for tubes up to approx. 25 mm Ø, 1 m silicone cable, miniature flat plug

Response time T_{90} : approx. 3 s

-65°C
+300°C

GTF 300

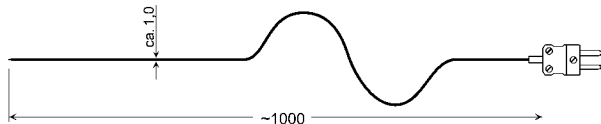
Art. no. 600039
Wire probe for quick-response measurements
Measuring tip twisted/fused

**GTF 300-UV**

Art. no. 600081
Wire probe for quick-response measurements
Measuring tip non-twisted/fused

**GTF 300-SP**

Art. no. 605973
Wire probe for quick-response measurements
Measuring tip with weld bead
-65 ... +300 °C, insulation permanent up to +250 °C



for air, gases, diminutive surfaces
Teflon-insulated twisted Ø 0.2 mm thermocouple wires, fused measuring tip, very flexibel, miniature flat plug

Response time T_{90} : water 0.4 m/s approx. 0.3 s

-65°C
+400°C

GTF 300 GS

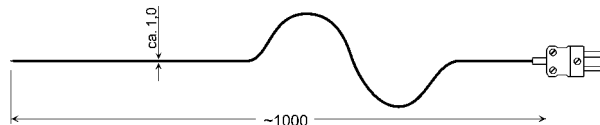
Art. no. 602554
Wire probe, glass fibre insulated for quick-response measurements
twisted measuring tip

**GTF 300 GS-UV**

Art. no. 607893
Wire probe, glass fibre insulated for quick-response measurements
Measuring tip non-twisted/fused

**GTF 300 GS-SP**

Art. no. 606208
Wire probe, glass fibre insulated for quick-response measurements
Measuring tip with weld bead
-65 ... +400 °C



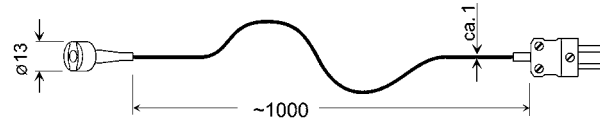
for air, gases, diminutive surfaces (not for liquids)
glass filament insulated Ø 0.2 mm thermocouple wires, miniature flat plug

Response time T_{90} : water 0.4 m/s approx. 0.3 s
Additional charge for any length per m

-65°C
+250°C

GMF 250

Art. no. 600071
Magnetic surface probe
-65 ... +250 °C



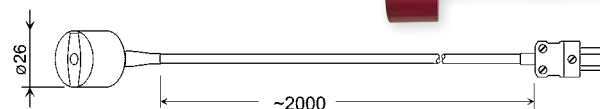
self-adhesive on magnetic materials, spring-loaded CU plate Ø 5 mm, 1 m Teflon-insulated twisted cable, miniature flat plug

Response time T_{90} : approx. 5 s

-65°C
+200°C

GMF 200

Art. no. 601377
Magnetic surface probe
-65 ... +200 °C



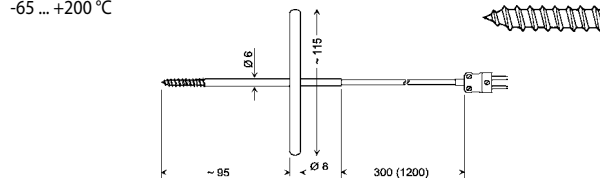
self-adhesive on magnetic materials (higher magnetic holding force), spring-loaded CU plate Ø 5 mm, resilient 2 m long silicone cable, miniature flat plug

Response time T_{90} : approx. 5 s

-65°C
+200°C

GGF 200

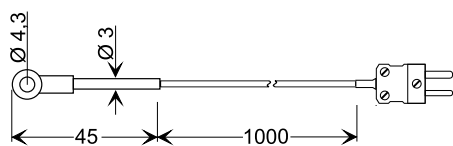
Art. no. 603418
Screw in probe for deep frozen products
-65 ... +200 °C



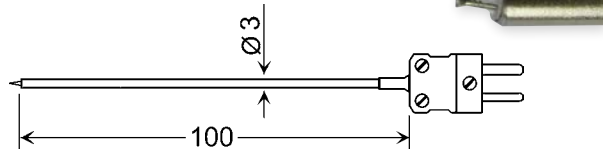
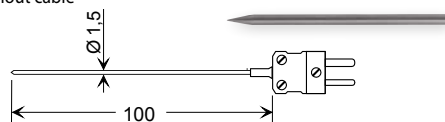
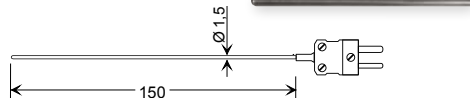
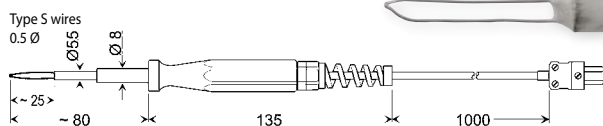
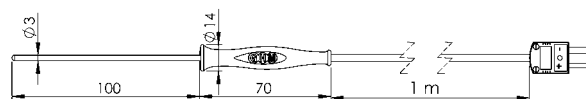
to screw into deep-frozen products, etc. no predrilling required, V4A-tube, 6 mm Ø with screw prod, spiral cable (approx. 1.2 m drawn out), DIN-type flat-pin plug

Response time T_{90} : approx. 15 s

TYPE K - MEASURING PROBE (NICR-NI) WITH DIN-TYPE FLAT-PIN PLUG

-50 °C
+250 °C**GKF 250**Art. no. 600141
Cable lug probe
-50 ... +250 °C

For tightening with suitable screw (standard M4), 1 m Teflon cable, miniature flat plug

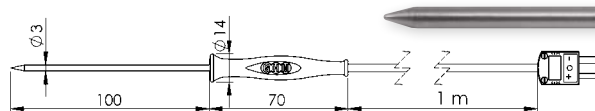
Response time T_{90} : approx. 10 s-50 °C
+500 °C**GLS 500**Art. no. 602962
Soldering tip probe
-50 ... +500 °C (for short time)for direct connection to instrument
2 laser-fused spring-loaded spiral springs made of NiCr-Ni, ceramic tube approx. 6 mm in diameter, miniature flat plug**Response time T_{90} :** approx. 2 s-65 °C
+400 °C**GTO 130 OK**Art. no. 600134
Air / gas probe without cable
-65 ... +400 °Cchangeable probe without cable, limited suitable also for surfaces
Type K-wire Ø 0.5 mm, welded and grinded flat, V4A-tube Ø 3 mm, DIN-type flat-pin plug, rigid connection**Response time T_{90} :** approx. 2 s-65 °C
+400 °C**GTE 130 OK**Art. no. 601483
Insertion probe without cable
-65 ... +400 °Cinterchangeable probe without cable for soft media
Spring-loaded V4A tube with slim Ø 1.5 mm insertion tip, miniature flat plug with a rigid connection**Response time T_{90} :** water 0.4 m/s < 1 s-200 °C
+1150 °C**GTT-15-150**Art. no. 607552
Jacket thermocouple type K (NiCr-Ni), Immersion probe
-200 ... +1150 °Cfor air, gases, and liquids
Sheathed thermocouple with Inconel 600 jacket tube Ø 1.5 mm, bendable, miniature flat plug with a rigid connection**Response time T_{90} :** water 0.4 m/s approx. 3 s+50 °C
+1550 °C**GBF 1550**Art. no. 603037
Burner probe type S
+50 ... +1550 °CProbe tip may be directly exposed into the flame
V4A tube Ø 8 mm, with reduced Ø 5.5 mm ceramic tube, plastic handle, silicone cable, miniature flat plug**Response time T_{90} :** approx. 2 s-65 °C
+550 °C**GF 1TK-T3**Art. no. 609695
compact type K temperature probe with silicone handle, Ø 3 mm immersion sensor; -65 ... +550 °C, type K, class 1

Immersion probe Ø 3 mm made of V4A tube, black silicone handle -50 ... +250 °C, 1 m silicone cable -50 ... +200 °C, probe and silicone handle IP67, mini flat connection

Response time T_{90} : Water 0.4 m/s < 2 s, air 2 m/s approx. 40 s**Variant:****GF 1TK-T3-LE**

Art. no. 609696

compact type K temperature probe with silicone handle with loose ends

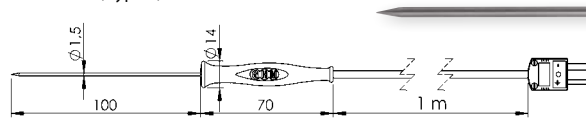
-65 °C
+550 °C**GF 1TK-E3**Art. no. 609697
compact type K temperature probe with silicone handle, Ø 3 mm insertion sensor; -65 ... +550 °C, type K, class 1

Insertion probe Ø 3 mm made of V4A tube, black silicone handle -50 ... +250 °C, 1 m silicone cable -50 ... +200 °C, probe and silicone handle IP67, mini flat connection

Response time T_{90} : Water 0.4 m/s < 2 s, air 2 m/s approx. 40 s**Variant:****GF 1TK-E3-LE**

Art. no. 609698

compact type K temperature probe with silicone handle with loose ends

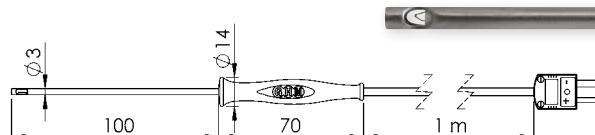
-65 °C
+550 °C**GF 1TK-E1.5**Art. no. 609699
compact type K temperature probe with silicone handle, Ø 1.5 mm extra-thin insertion sensor
-65 ... +550 °C, type K, class 1

Insertion probe Ø 1.5 mm made of V4A tube, black silicone handle -50 ... +250 °C, 1 m silicone cable -50 ... +200 °C, probe and silicone handle IP67, mini flat connection

Response time T_{90} : water 0.4 m/s < 1 s, air 2 m/s approx. 15 s**Variant:****GF 1TK-E1.5-LE**

Art. no. 609700

compact type K temperature probe with silicone handle with loose ends

-65 °C
+400 °C**GF 1TK-L3**Art. no. 611299
compact type K temperature probe with silicone handle, Ø 3 mm air sensor for clean media
-65 ... +400 °C, type K, class 1

(use GF 1TK-T3 for contaminated media), perforated V4A tube Ø 3 mm, freely arranged measuring element, black silicone handle -50 ... +250 °C, 1 m silicone cable -50 ... +200 °C, mini flat connection

Response time T_{90} : air 2 m/s approx. 15 s**Variant:****GF 1TK-L3-LE**

Art. no. 611300

compact type K temperature probe with silicone handle with loose ends

INFRARED



INFORMATION

Infrared measurement

Infrared measurements can be used to measure the temperature of a surface on a device under test without the need to come into contact with that surface (except objects with a shiny metal surface; glass suitable under certain conditions). The IR sensor measures the infrared radiation emitted by the device under test. The measurement is supported by a laser which designates the surface measured by the optical measuring system.

Properties:

- Ultrafast and contactless surface measurement
- For measurement tasks that cannot be accomplished using PT100 or type K devices (e.g. abrasive chemicals, small components, ...)

	GIM 530 MS	ST 512
APPLICATION:		
Precision measurement	•	
Fast scanning of surfaces	•	•
Food	•	•
Quality management	•	•
EQUIPMENT:		
Measuring range [°C]	-32 ... +530	-50 ... +1000
Laser	single	dual
Additional probe connection		
Optical resolution (Distance / Spot size)	20:1	30:1
Emissivity	0.100 .. 1.000	0.10 .. 1.00
General functions	Min/Max, Hold, Offset	Min/Max, Hold
Alarm	optical, acoustical	
Data storage and visualisation / interface		
DEVICE INFORMATION:		
Catalogue page	Page 36	Page 37

INFRARED THERMOMETER WITH PRECISION GLASS OPTIC



HIGHLIGHTS:

- Adjustable visible and audible alarm
- Constant measuring area in between the distance of 13 to 140 mm
- Targeting laser for exact aiming of the object to be measured
- Fast scanning of hot and cold spots within 0.3 s



GIM 530 MS

Art. no. 601229

Infrared thermometer with laser

General:

User-friendly industrial design combined to state of the art technology are setting a new standard in professional and all day non-contact temperature measuring. The large temperature range of -32 ... +530 °C, the targeting laser and the optical resolution of 20:1 allow very precise measuring of surfaces in a variety of applications. Simply aim at the target with the laser, push the trigger and the value is displayed within 0.3 seconds plus several other informations.

Application:

- Electrical and mechanical service and maintenance
- Heating, ventilation, air-conditioning - finding thermal bridges etc.
- Motor vehicle diagnosis, electricity, home improvement
- Checking food temperature during keeping warm or storing

Specifications:

Measuring range:	-32 ... +530 °C (-20 ... +980 °F)
Resolution:	0.1 °C (0.1 °F)
Temperature display:	°C or °F selectable
System accuracy:	(at ambient temperature = 23 °C ±5 °C)
±1 % or ±1 °C	0 ... 530 °C (highest value shall be valid)
±1 °C ±0.07 °C/°C	0 ... -32 °C
Repeat accuracy:	±0.5 % or ±0.7 °C from 0 °C ... 530 °C (highest value shall be valid)
	±0.7 °C ±0.05 °C/°C from 0 °C ... -32 °C
Optical resolution (D:S):	20 : 1
Response time (t₉₉):	0.3 s
Spectral range:	8 ... 14 μm
Emission rate:	0.100 ... 1.000, free selectable
Laser:	<1 mW laser class IIa
Configuration:	Min/Max/Scan/Hold/Offset/°C/°F
Display illumination:	yes
Alarm function:	optical and acoustic HIGH-/LOW-alarm
Working temperature:	0 ... 50 °C
Storage temperature:	-20 ... +60 °C (without battery)
Power supply:	9 V alkaline battery
Battery life:	approx. 20 hours for use with laser and illumination
Abmessung:	190 x 38 x 45 mm (L x W x D)
Weight:	approx. 150 g
Scope of supply:	Device, battery, manual, device bag made of nylon

Accessories and spare parts:

GKK 252

Art. no. 601056

small case (235 x 185 x 48 mm) with foam lining

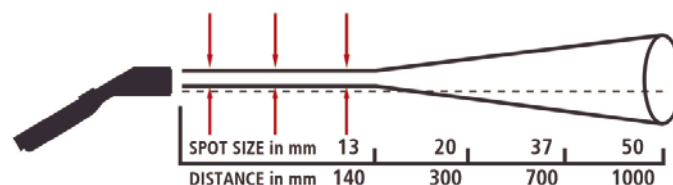
ISO-WPT-Infrarot

p.r.t. page 15



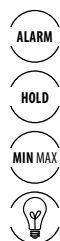
Display

- current temperature value
- MIN-/MAX-value: current and last
- HIGH-/LOW-alarm
- HOLD-function
- emission rate
- symbol for display illumination and laser



optical diagram:
ratio: spot size / distance

INFRARED THERMOMETER



HIGHLIGHTS:

- Dual laser
- Alarm function

ST 512

Art. no. 600004

Infrared thermometer with dual-laser

Application:

- **Monitoring of circuit boards:** overheated parts
- **Heating / ventilation / air-conditioning:** detecting bad isolation, untight pipes, energy consumption, general service measurements, etc.
- **Electrical systems, machines, power engines:** detecting hot spots at electric connections, temperature rises at motors, bearings, pumps, compressors, etc.
- **Food processing and monitoring:** food temperature, process temperature, etc.
- **Medical technology, biological and chemical analysis:** contact-free temperature measurements within seconds, no longer problems with dangerous, aggressive or similar media
- **Industry, engineering, craft:** Surface temperature measurements of rotating parts (barrels, drums, shafts, printing machines, plastic welding, bitumen, concrete, etc.)

Specifications:

Measuring range:	-50 ... +1000 °C	
Resolution:	0.1 °C	
Accuracy: (at ambient temperature = 23 °C ... 25 °C)	-50 ... -23 °C	±7 °C (typical)
	-23 ... -2 °C	±4 °C
	-2 ... +94 °C	±2.5 °C
	94 ... 204 °C	±(1.0 % of meas. value + 1 °C)
	204 ... 426 °C	±(1.5 % of meas. value + 1 °C)
	426 ... 1000 °C	±(3 % of meas. value + 1 °C)
Reproducibility:	±0.5 % of meas. value or ±1 °C	
Response time (t₉₅):	150 ms	
Emission rate:	0.10 ... 1.00, selectable	
Spectral range:	8 ... 14 μm	
Optical resolution (D/S):	approx. 30:1	
Sight:	dual laser	
Power supply:	9 V battery	
Display:	LCD-display with function indicator symbols and background illumination	
Operating conditions:	0 ... 50 °C, 10 ... 90 % RH	
Storage temperature:	-10 ... +60 °C	
Features:	HOLD, Min-/Max, °F, LOCK, Alarm	
Alarm function:	selectable min / max alarm, with integrated buzzer	
Dimensions:	146 x 104 x 43 mm	
Weight:	163 g	
Scope of supply:	Device, battery, manual	

Accessories and spare parts:

ISO-WPT-Infrarot

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