Operating Manual for Digital Precision Thermometer

GTH 175 / MO CE

Specification

Range:		-199.9 to +199.9°C	
Resolution:		0.1°C	
Accuracy:		unit: ±0.1°C ± 1 digit cpl. measuring system incl. sensor: ±0.1°C ± 2 digit from -50 to +150°C	
Sensor:	**GTH 175/MO:**	Immersion probe:	thin-film molybdenum sensor electrically insulated and mounted in stainless steel tube of 3mm dia and approx. 80mm length; small plastic handle approx. 75mm long. Feeler permanently connected to device via approx. 1m of highly flexible silicon cable.
	GTH 175/MO-E:	Insertion probe	thin-film molybdenum sensor electrically insulated and mounted in stainless steel tube of 3mm dia and approx. 100mm length; prod, small plastic handle approx. 75mm long. Feeler permanently connected to device via approx. 1m of highly flexible silicon cable .
	GTH 175/MO-K:	Core temperature-insertion probe	thin-film molybdenum sensor electrically insulated and mounted in stainless steel tube of 3mm dia and approx. 100mm length; prod, small teflon handle approx. 75mm long. Feeler permanently connected to device via approx. 1m of highly flexible silicon cable. Sensor has to remain in media; it must not be heated up to temperatures exceeding 200°C. Permissible temperatures for feeler handle and feeler cable up to 250°C.
Display:		approx. 13mm high, 3½ digit LCD	
Working temperature:		0 to 45°C (Specification "T": -30 to +50°C) (ambient temperature for unit)	
Nominal temperature:		25°C (accuracy specified at this temperature)	
Atmospheric humidity:		0 to 80 % (not condensing)	
Power supply:		9V-battery type IEC 6F22 (included)	
Battery service time:		approx. 200 operating hours	
Low battery warning:		"BAT" displayed automatically in case of low battery	
Dimensions of case:		approx. 106 x 67 x 30 mm (W x H x D) (sensor not included)	
Weight:		approx. 200g (cpl. unit with sensor and battery)	
Electromagnetic compatibility:		In accordance with EN50081-1 and EN50082-2 for unrestricted use in housing and industrial areas. Additional error: <1%	

GREISINGER electronic GmbH

D - 93128 Regenstauf, Hans-Sachs-Straße 26

Tel.: 09402 / 8500
Fax: 09402 / 1829

⚠ Safety Advices

This device has been designed, assembled and tested in accordance with the safety regulations for electronic measurement devices.

However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advices will be adhered to when using the device.

1. Trouble-free operation and reliability of the device can only be guaranteed if the device is not subjected to any other climatic conditions than those stated under "Specification".
2. Moving the device from a cold to a warm environment may lead to malfunctions due to condensation. In such a case we recommend waiting to allow device temperature to adjust to the ambient temperature before re-starting.
3. Please note that the sensor must not be heated up to temperatures exceeding 200°C.
4. If there is any risk whatsoever involved in running it, the device has to be switched off immediately and to be marked accordingly to avoid re-starting.

   Operator safety may be a risk, if :

   - there is visible damage done to the device.
   - the device is not working as specified.
   - the unit has been stored under unsuitable conditions for a longer time .

   In case of doubt, please return device to manufacturer for repair or maintenance

Points to be observed during operation

a.) In case of low battery voltage "BAT" is displayed; make sure to exchange battery immediately as too low an operation voltage may lead to incorrect measuring results. To exchange battery, please proceed as follows :

- push battery cover located at the back side of the unit downwards (see arrow)
- take out battery and replace by a new one
- close battery cover

We recommend to take out battery if unit will not be operated for some time.

2. Make sure to maintain unit properly and to operate it in accordance with the specification listed (do not throw, knock etc.).
3. Sensor must not be heated up to temperatures exceeding 200°C as otherwise the soldering point of the connection wires may open up, in which case the display will show 1 plus decimal point.
   Both, sensor handle and sensor cable are resistant to temperatures up to 100°C (GTH 175/MO-K : up to 250°C).

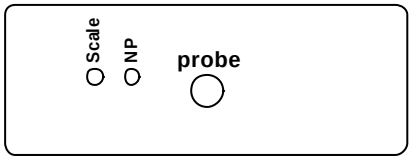
Recalibration

The measuring device will be calibrated before leaving our works. A recalibration is, therefore, not necessary . If you want to calibrate the unit for an existing sensor, please proceed as follows (calibrate 0°C before scale as otherwise correct adjustment cannot be guaranteed):

Calibration point 0°C : Put ice cubes in a glass and pour cold water till ice cubes are almost covered. Put sensor into glass, wait approx. 15 minutes, then stirr water with a spoonhandle. Wait for stable value to be displayed, then turn zero point potentiometer (NP, Potentiometer next to cable outlet) by means of a screw driver till display shows "0.00".

Calibration point scale : Set display to a reference temperature value (e.g. clinical thermometer) using the extreme left potentiometer on the front side of the unit (Scale).
Please note that boiling water should not be used as a temperature reference as the boiling temperature is dependent on the atmospheric pressure.

View of front plate



RE : ISO 9000 and following
Manufacturer's certificate of calibration for GTH175/MO available against upcharge: Price upon request. (In case of order, please specify testing values desired; e.g. -40°C, 0°C, 50°C)