



## Digital Thermometer

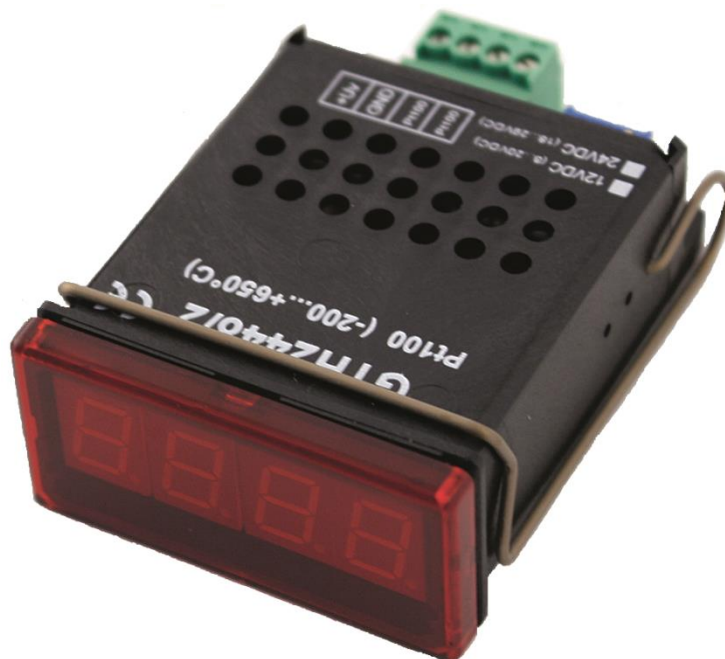
Operating Manual

**GTH 2448 / 2**

**GTH 2448 / 3**

**GTH 2448 / 4**

**GTH 2448 / 5**



Made in  
Germany

WEEE-Reg.-Nr. DE93889386

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## 1 General Note

Read this document carefully and get used to the operation of the device before you use it. Keep this document within easy reach near the device for consulting in case of doubt.

Mounting, start-up, operating, maintenance and removing from operation must be done by qualified, specially trained staff that have carefully read and understood this manual before starting any work.

The manufacturer will assume no liability or warranty in case of usage for other purpose than the intended one, ignoring this manual, operating by unqualified staff as well as unauthorized modifications to the device. The manufacturer is not liable for any costs or damages incurred at the user or third parties because of the usage or application of this device, in particular in case of improper use of the device, misuse or malfunction of the connection or of the device.

The manufacturer is not liable for misprints.

## 2 Safety

### 2.1 Intended Use

The GTH 2448 / ... is a digital thermometer. The device must be used only according to its intended purpose and under suitable conditions.

### 2.2 Safety signs and symbols

Warnings are labeled in this document with the followings signs:



**Caution!** This symbol warns of imminent danger, death, serious injuries and significant damage to property at non-observance.



**Attention!** This symbol warns of possible dangers or dangerous situations which can provoke damage to the device or environment at non-observance.



**Note!** This symbol point out processes which can indirectly influence operation or provoke unforeseen reactions at non-observance.

### 2.3 Safety guidelines

Make it a rule to always observe the following points to exclude any risk whatsoever for the operator.

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".  
If the device is transported from a cold to a warm environment condensation may cause in a failure of the function. In such a case make sure the device temperature has adjusted to the ambient temperature before trying a new start-up.

2.






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

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

3.  When connecting the device to other devices the connection has to be designed most thoroughly as internal connections in third-party devices (e.g. connection GND with protective earth) may lead to undesired voltage potentials that can lead to malfunctions or destroying of the device and the connected devices.
4.  Do not use these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury or material damage. Failure to comply with these instructions could result in death or serious injury and material damage.
5.  When operating electric devices parts of these devices will, as a matter of course, be live. Unless the warnings are observed severe damage to life and limb or to property may be the result. Make sure that only skilled personnel are working with this device. Trouble-free operation of this device can only be guaranteed if it is property transported and stored. Careful installation, mounting, operation and maintenance are vital factors for the safe operation of this device.

**Skilled personnel:**

These are persons who are familiar with the installation, mounting, commissioning and the operation of the product and have acquired a qualification for their job:

- Training or instructions or qualification to switch on/off, isolate, ground and apply markings to circuits and devices/systems in accordance with the latest state of the art standards of safety technology.
- Training or instructions regarding the proper care and use of suitable safety equipment in accordance with the latest state of the art standards of safety technology.
- First aid training.

## 3 Scope of supply

The scope of supply includes:

- Digital thermometer GTH 2448 / ...
- Operating Manual

## 4 Electric Connection

Electric connections for the GTH 2448 / ... are located at the back of the device.

Connection is made via screw-type/plug-in terminals (max. terminal range 1,5mm<sup>2</sup>).

*Make it a rule to always mount screw-type/plug-in terminals while they are still loose and connect only later. If terminals are mounted after connection there is a risk that soldering eyes may come loose. Please use suitable screw-driver and do not tighten screws by force.*

Terminal assignment	
+UV	Supply voltage +
GND	Supply voltage -
Pt	Probe (Pt100 / Pt1000)
Pt	Probe (Pt100 / Pt1000)

**Supply voltage:** 12 V DC or 24 V DC

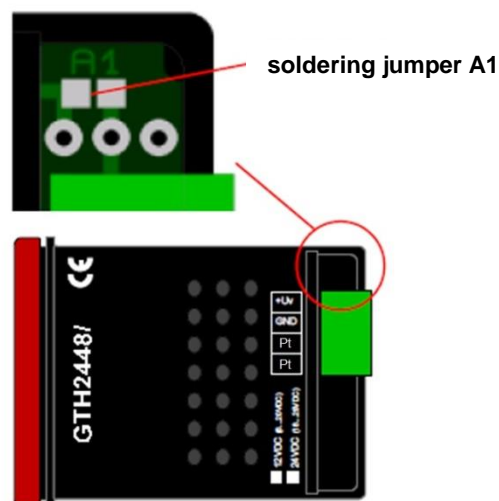
*Please make sure to check if supply voltage and voltage range set conform to each other. Use the soldering jumper next to the connection terminal to select supply voltage.*

Jumper "A1" open:                24 V (18 - 29 V DC)  
 Jumper "A1" closed:            12 V (8 - 20 V DC)

### Probe connection:

GTH 2448 / 2, / 3:                Pt100, 2-wire  
 GTH 2448 / 4, / 5:                Pt1000, 2-wire

**Both the connection and commissioning of the device must only be carried out by skilled personnel. In case of a wrong connection, the device may be destroyed - no warranty claims can be accepted!**



## 5 Accessories

### Accessories

### Description

**GNG220/1-12V**                    power supply : input: 230V AC; output: 12V DC stabilized, max. 40mA

**GTF 102 - ...**                    probe e.g. for screwing in to measuring object.  
 arbitrary tube diameters, lengths and threads are possible – refer to catalog

**GTF 103 - ...**                    probe with connection head (DIN B), R1/2", FL = 100mm, D = Ø 6mm  
 (for further configuration refer to catalog)

### Note:

Some of the above-named probes are 4-wire probes. When connecting them to a GTH2448 put the two same coloured wires together in one plug-in-terminal.

## 6 Specifications

<b>Measuring range:</b>	GTH2448 / 2, / 4:	-200 ... +650 °C
	GTH2448 / 3, / 5:	-60.0 ... +199.9 °C
<b>Resolution:</b>	GTH2448 / 2, / 4:	1 °C
	GTH2448 / 3, / 5:	0.1 °C
<b>Probe connection:</b>	GTH 2448 / 2, / 3:	Pt100, 2-wire
	GTH 2448 / 4, / 5:	Pt1000, 2-wire
<b>Accuracy:</b>	± 0.5°C ± 1 Digit	
<b>Offset adjustment:</b>	An Offset of the sensor (e.g. when using long cable) can be compensated with the spindle potentiometer at the backside of the housing	
<b>Display:</b>	3½-digit, red LED-display, 10mm high	
<b>Scan rate:</b>	approx. 3 measurements / sec	
<b>Nominal temperature:</b>	25 °C	
<b>Working temperature:</b>	0 ... 50 °C	
<b>Relative humidity:</b>	5 ... 95 % r.h. (non-condensing)	
<b>Storage temperature:</b>	-20 ... +70°C	
<b>Voltage supply:</b>	12 V DC (8 - 20 V DC) or 24 V DC (18 - 29 V DC) ( <i>to be set via soldering jumper</i> )	
<b>Power consumption:</b>	max. 20 mA	
<b>Housing:</b>	glass fibre reinforced Noryl, front screen PC.	
<b>Dimensions:</b>	24 x 48 mm (H x B) (dimensions of front frame)	
<b>Mounting depth:</b>	approx. 65 mm (incl. Screw-type/plug-in terminals)	
<b>Panel mounting:</b>	by means of VA-elastic spike, allows panel thickness: from 1 to approx. 10 mm	
<b>Panel cut-out:</b>	21.7 <sup>+0.5</sup> x 45 <sup>+0.5</sup> mm (H x B).	
<b>Connection terminals:</b>	4-pin screw-type/plug-in terminals for wire dias ranging from 0.14 to 1.5 mm <sup>2</sup>	
<b>EMC:</b>	This device corresponds to the essential protection ratings established in the Regulations of the Council for the Approximation of Legislation for the member countries regarding electromagnetic compatibility (2004/108/EG) It has been tested according to EN61326-1 : 2013 (table 2, class B) Additional fault: <1%	
<b>IP rating:</b>	front IP54.	

## 7 Reshipment and Disposal

### 7.1 Reshipment



All devices returned to the manufacturer have to be free of any residual of measuring media and other hazardous substances. Measuring residuals at housing or sensor may be a risk for persons or environment



Use an adequate transport package for reshipment, especially for fully functional devices. Please make sure that the device is protected in the package by enough packing materials.

### 7.2 Disposal instructions



The device must not be disposed in the unsorted municipal waste! Send the device directly to us (sufficiently stamped), if it should be disposed. We will dispose the device appropriate and environmentally sound.