

# Operating Manual For Hygro-/Thermometer

## GFTH 95



### Application range:

Quick-response measurement of atmospheric humidity and temperature in EDP rooms, museums, churches, administrative and residential buildings, storage rooms, green houses, pools, production rooms, for cooling technology and air conditioning as well as for building engineers and for the evaluation of damage to buildings etc.

### Specification:

<b>Measuring range:</b>	temperature: -20,0°C ... +70,0°C humidity: 10,0 ... 95,0 %RH (recommended range for application: 30 to 80 %RH)
<b>Resolution:</b>	temperature: 0,1°C humidity: 0,1 %RH
<b>Accuracy:</b> (±1 digit) (at nominal temperature = 25°C)	temperature: ± 0,5% of m. v. ± 0,1°C (same as Pt1000 1/3 DIN) humidity: ± 3%RH (range: 30 to 80 %RH)
<b>Measuring probe:</b>	temperature: Pt1000 humidity: capacitive polymer humidity sensor
<b>Response time:</b>	T90 = 15 sec.
<b>Display:</b>	approx. 13 mm high, 3½-digit LCD-display
<b>Operation elements:</b>	Slide switch for selection of measuring range
<b>Nominal temperature:</b>	25°C
<b>Operating conditions:</b>	electronics: -20 to 70°C; 0 to 80 %RH (non-condensing) sensors: -20 to 70°C; 0 to 100 %RH.
<b>Power supply:</b>	9V battery type JEC 6F22 (in scope of supply)
<b>Power consumption:</b>	approx. 0.1 mA
<b>Low battery warning:</b>	"BAT" automatically displayed if battery is low
<b>Housing:</b>	impact resistant ABS-housing: approx. 106 x 67 x 30 mm (HxWxD), in addition, sensor head protruding vertically, length 35 mm, diameter 14 mm, overall length 141 mm.
<b>Weight:</b>	approx. 135g incl. battery
<b>EMC:</b>	The 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). Additional fault: <1%



### Disposal instructions

The device must not be disposed in the regular domestic waste.  
Send the device directly to us (sufficiently stamped), if it should be disposed. We will dispose the de-vice appropriate and environmentally sound.



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## **Safety instructions:**

This device has been designed and tested in accordance to the safety regulations for electronic devices.

However, its trouble-free operation and reliability cannot be guaranteed unless the standard safety measures and special safety advises given in this manual will be adhered to when using it.

1. Trouble-free operation and reliability of the device can only be guaranteed if it 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 result 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
 In case of doubt, please return device to manufacturer for repair or maintenance.
3. **Warning:** Do not use these product 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.

## **Choice of Measuring Unit:**

The measuring unit can be chosen by means of the slide switch at the right side of the instrument.

- |      |                       |  |
|------|-----------------------|--|
| °C   | => slide switch up:   | The instrument shows the current temperature |
| % RH | => slide switch down: | The instrument shows the current humidity    |

## **System Messages:**

In case of measuring range overruns, etc. according error messages are displayed:

- Er. 1 = measuring range has been exceeded
- Er. 2 = meas. values have fallen below perm. range
- Er. 7 = System fault - the device has detected a system fault

## **Other Operational Functions:**

- a) If 'BAT' appears in the left hand corner of the display, the battery is used up and needs to be replaced. However, the instrument can still be operated for a short period of time.  
If „bAt“ is displayed in large letters the battery is finally used up and has to be replaced. Measuring is no more possible.  
The battery has to be taken out, when storing device above 50°C.  
It is recommended to take the battery out, when storing device for a longer period of time.
- b) The humidity and temperature sensor are located in the protruding sensor head. Make sure that the openings are not soiled.  
In case of soiling do not try to remove the dirt. Improper use may damage the sensors. Prevent any mechanical impact on the device as this may also lead to a destruction of the sensors (supporting material glass or ceramics)!  
**Please note: In the sensor area there is ESD-sensitive. Never touch or hold sensor head!**
- c) In order to guarantee accurate measurements the device has to be adjusted to ambient temperature.  
If necessary wait for the temperature of the device to adjust to the ambient temperature.  
If this is not possible, please proceed as follows:  
Move device around while holding it at an arm's length (fanning), to speed up the exchange of air and the temperature adjustment process. As soon as the display value is steady, readings can be made. This procedure shall be used for temperature and for humidity measurements.
- d) If you hold the device during measurements your body heat as well as your breath will change the temperature and the humidity. In order to minimise these factors, hold the device at as great a distance from the sensor as possible. Also try to prevent your breath coming into contact with the sensor. For optimum measuring results put down device and read display from a certain distance as soon as a constant measuring value is displayed.  
Always take into account that any humidity measurements in an open space cannot be made to an accuracy of more than 0.1% due to factors such as movement in the air, temperature changes etc.
- e) A calibration at the users site is not possible. To ensure highest accuracies it should be returned to the manufacturer every 12 months (when used in clean air) for checking or, if necessary: recalibration.  
If desired a calibration certificate can be made (according to ISO 9000). Price upon request.
- f) Probe tube and case are not 100% proof. If there are pressure differences between probe tube and case, there may be made wrong measurings.  
For measurings in channels with over/under pressure or strong air flow we recommend our measure instruments GMH3330 or GMH3350 with humidity probe TFS0100 or TFS0100E.