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Humidity Temperature Sensor TFM80

OEM duct version
with Polyga® measuring element

- For semi-industrial and industrial use up to 80°C and 100% rh.
- Robust, resistant to high humidity, with washable measuring element
- Energy saving: the TFM80H with resistance output does not require its own power supply

Sensors with Polyga® measuring element demonstrate excellent measuring properties and accuracy in high humidity. They can be adjusted and cleaned in water. Their outstanding durability, reliability and robustness make them the classic choice for applications with extended high humidity.

Type survey

Type	Order no.	Measuring range		Outputs	
		Humidity	Temperature	Humidity	Temperature
FM80H	44010300	0 … 100 % rh	-	0 … 1000 Ω linear	-
FM80H	44010400	0 … 100 % rh	-	100 … 138,5 Ω lin.	-
FM80H	44010100	0 … 100 % rh	-	0 … 100 Ω lin.	-
FM80H	44010200	0 … 100 % rh	-	0 … 200 Ω linear	-
TFM80H	44700350	0 … 100 % rh	Pt100	0 … 1000 Ω linear	Pt100
TFM80H	44700450	0 … 100 % rh	Pt100	100 … 138,5 Ω linear	Pt100
TFM80H	44700150	0 … 100 % rh	Pt100	0 … 100 Ω linear	Pt100
TFM80H	44700250	0 … 100 % rh	Pt100	0 … 200 Ω linear	Pt100
TFM80H	44732666	0 … 100 % rh	NTC	0 … 48 kΩ non-linear	NTC

Further resistance ranges on request.

Accessories

Order no.	Description
23.063 	PTFE filter, two-part, *recommended for extreme operating conditions*
20.014 	protective tube made of gauze *recommended for air speeds between 8 and 15 m/s*

Technical Data

Humidity

Measuring range		0..100%rh
Measuring accuracy	>40%rh	±2.5%rh
	<40%rh	acc. to tolerance diagram
Working range		30...100%rh
Medium temp. coefficient		-0.1%/K at 20°C and 50%rh
Half-life period at v=2m/sec		1.2min

Electrical data

Connecting terminals	for conductor cross sections 0.5mm²
Electromagnetic compatibility	according to EN 61326-1 and EN 61326-2-3
Permissible load	250 mW
Permissible load (temperature output) for	2 mA air 1 m / sec and t=0.1 K
insulation resistance	10 MOhm

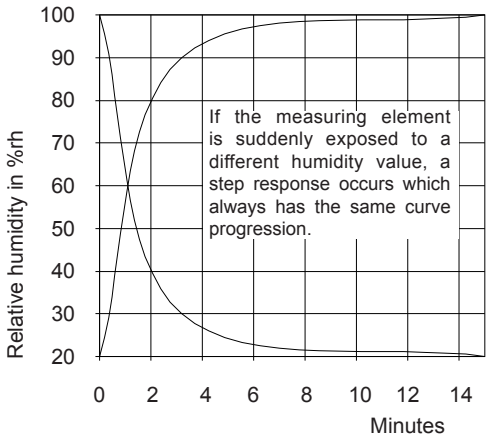
Temperature

Measuring element	PT100 ref. DIN EN 60751
Working range	-30...+80°C
Measuring accuracy	±0.5°C

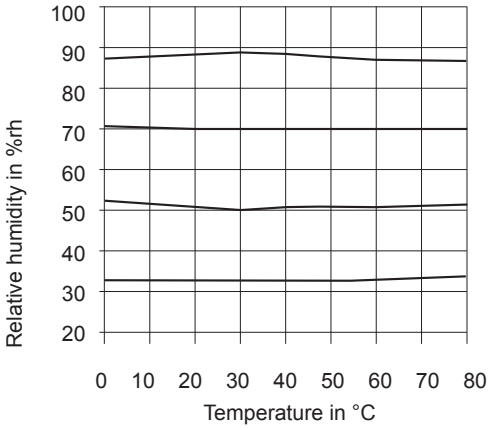
General data

Measuring medium	air, pressureless, non-aggressive
Adjustment	at average air pressure 430m NN
Permissible air speed with protective gauze (order no. 20.014)	8m/sec 15m/sec
Sensor length; Sensor material	220mm; high-grade steel
Protective system	IP00
Weight	approx. 0.6 kg

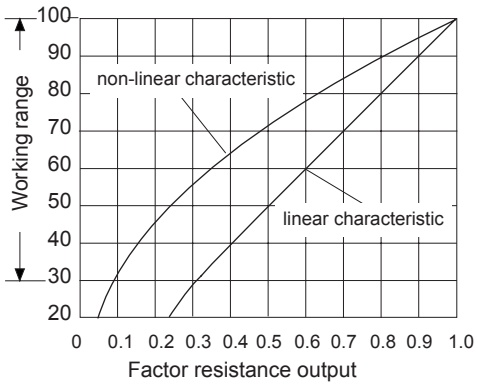
Half-life period

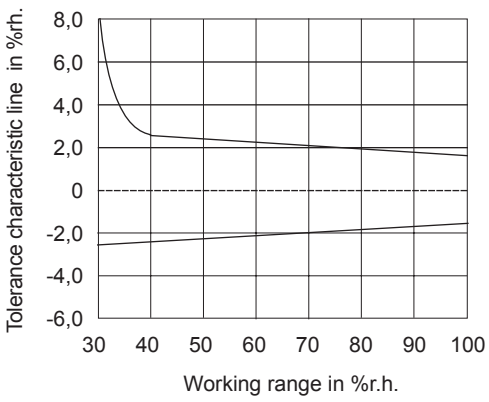


Thermal behaviour



Humidity and tolerance diagram





Mounting instructions

Position	Sensor vertically downwards or horizontal. Avoid positions where water can enter. Avoid places exposed to the sun. In the mounting positions described above, a blanking plate in the sensor tube with a 0.8mm diameter hole will prevent water getting in.
Connection	Always use screened cables for data and signal cables, with the screening connected to the earth terminal. Ensure that no impermissible ground loops are created by a second earth connection, thereby leading to fault currents. Data and signal cables must not be routed alongside control leads, power cables or mains supply cables.

User instructions

Maintenance	The measuring element is maintenance-free in pure ambient air. A special process ensures that Galltec sensors have good long-term stability. Regeneration is not necessary, but is also not harmful.
Calibration	Ensure that the ambient humidity and the ambient temperature are constant. If possible, use a Galltec® sensor check for testing. Leave the equipment to be checked for at least 1 hour in a **constant** checking climate. Nach Entfernen des Lackes kann die Justierschraube verstellt werden. After calibration, the adjuster screw should again be secured. Note: Immersing the measuring element (i.e. the sensor tube) into water also provides an ideal fixed point for checking the sensors.
	Warning: Contact with the inner parts nullifies the warranty.
Dew formation	Dew formation and splashes do not damage the sensor. The Polyga® measuring element is water resistant.
Cleaning	The water-resistant property of the Polyga® measuring elements allows cleaning to be carried out with water: Immerse the sensor tube in water and gently move back and forth. Water must not be allowed to penetrate the header casing. Do not use solvents. We recommend the use of a mild detergent. Rinse thoroughly after, to remove any residues.
Damaging influences	Aggressive media containing solvent can cause measuring errors depending on the type and concentration. Deposits which eventually form a water-repellent film over the measuring element are harmful (such as resin aerosols, lacquer aerosols, smoke deposits etc.).
Further Informationen	› Relative humidity - Definitions - physical laws › Humidity sensor in accordance with the absorption principle › Maintenance instructions › Humidity measuring technology: Definitions and terms available at www.galltec-mela.de or from the manufacturer

Connection diagram for passive sensors with resistance output