

ROOM TEMPERATURE SENSOR HART



- 4...20 MA HART
- -30 ... +90 °C
- HOUSING PBT GF30
- PROBE 30 MM
- IP 65



KEY DATA

Property	Value	Property	Value
Input	1x or 2x Pt100 · Pt1000	Range without amplifier	-30 ... +90 °C
Output	4...20 mA HART · resistance direct	with amplifier	-30 ... +80 °C (1)
Accuracy	0.3 % of span	Supply	12 ... 40 VDC
Housing	PBT GF30 black, UL94 HB	Probe	30 mm, Ø 6 mm
Product code	MR		

A room sensor for air conditioning and cold storage — cooling plants on ships, cold rooms, building services. The sensing element sits either directly on the connector or behind a HART transmitter.



TECHNICAL DATA

INPUT AND OUTPUT

Sensor without amplifier	1x or 2x Pt100 · Pt1000
Sensor with amplifier	1x Pt100
Sensor connection	2-, 3- or 4-wire
Classes	A · B · AA
Range without amplifier	-30 ... +90 °C
Range with amplifier	-30 ... +80 °C, smallest span 50 K
Current output	4 ... 20 mA with HART, 2-wire loop
Total range	3.6 ... 21 mA
Fault signal	21 mA on break, short circuit or underrange
Without transmitter	resistance directly on the connector

PERFORMANCE

Total error	0.3 % of span
Resolution	16 bit
Filter	0 ... 99 s
Measuring rate	10 measurements/s
Switch-on delay	< 5 s
Transfer characteristic	linear with temperature
Setting	by software over HART
Adjustable	LRL · URL · LRV · URV · filter · adjustment · simulation
Flammability	UL94 HB
Weight	50 g

SUPPLY AND ENVIRONMENT

Supply	HART current loop 12 ... 40 VDC
Load	$R = (U_B - 12 \text{ V}) / 21 \text{ mA}$
Reverse polarity	protected, no destruction
Working temperature with amplifier	-30 ... +80 °C (1)
without amplifier	-30 ... +90 °C
Storage	-30 ... +90 °C
Protection	at least IP 65, depending on the connection

MECHANICS

Housing	PBT GF30, black
Flammability	UL94 HB
Probe	30 mm, Ø 6 mm
Mounting	two holes Ø 4.6 mm, 45.5 mm apart
Mounting position	any
Weight	50 g
Protection	at least IP 65, completely potted inside

(1) The range differs with and without the amplifier: without a transmitter -30...+90 °C, with one only -30...+80 °C. The same applies to the working temperature of the device.

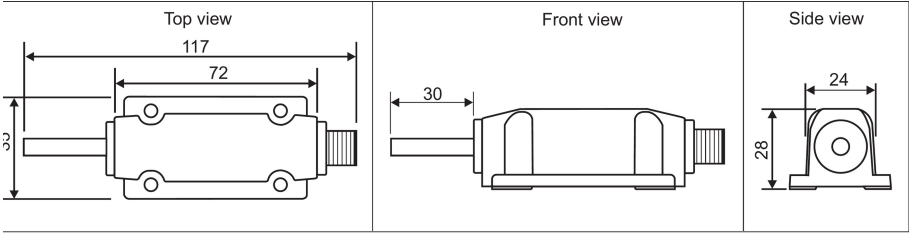
(2) The probe is fixed at 30 mm: the order key carries only 030 in that position and only 6 for the diameter.

ELECTRICAL CONNECTION

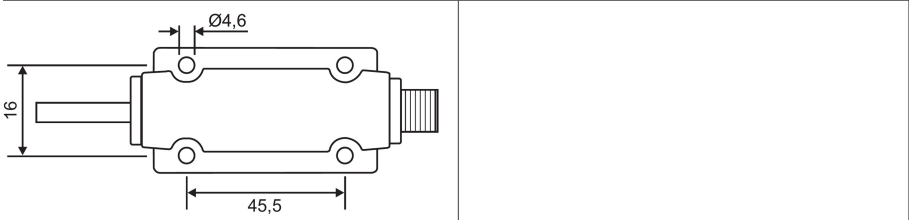
Ten electrical connections are available: M12x1 four-, five- and eight-pole, Deutsch DT04 three- and four-pole, Super Seal 1.5 three-pole, bayonet (DIN) four-pole, valve plug four-pole, MIL six-pole and a cable outlet. The degree of protection depends on the connection chosen, at least IP 65. Two sensors do not fit every connector.



DIMENSIONS



Mounting dimensions (in mm)



Dimensions in mm.



CONFORMITY

Flammability	UL94 HB for the housing
Protection	at least IP 65, depending on the connection
Material	housing PBT GF30, probe stainless steel

ORDER INFORMATION

Accessories

- HART interface with USB and software. The HART tool is a menu-driven operating program for commissioning, configuration, signal analysis, data backup and documentation. When communicating through a HART modem a minimum resistance of 250 Ω has to be taken into account.

ORDER KEY

Field	Value	Meaning
Product code	MR	stands at the beginning of every order code
Transmitter	0 · 2	without · with 4...20 mA HART
Sensor	1 ... 4	1× Pt100 · 1× Pt1000 · 2× Pt100 · 2× Pt1000
Version	1 · 2 · 3	2-wire · 3-wire · 4-wire
Accuracy	1 · 2 · 3	class A · B · AA
Probe	030	30 mm — the only possibility (2)
Electrical connection	1 ... A	M12x1 4/5/8-pole · Deutsch DT04 3/4-pole · Super Seal · bayonet · valve · cable 2 m · MIL
Diameter	6	Ø 6 mm
Configuration	0 · 1 · 2	without · factory setting -30...80 °C, damping 0 s · customer-specific
Special model	0 · 1	no · yes, please state

The order code is formed from the product code and the fields of the key.

