● Characteristics

- Input:	RTD Pt100 / RTD Pt1000
- Range:	-30...+90 °C / -30...+80°C
- Accuracy transmitter:	0,3% of range
- Accuracy RTD:	Class A / Class AA / Class B
- Output:	4...20 mA HART / RTD
- Resolution:	16 bit
- Configuration:	Via software (HART communication)
- Electrical connection:	Several plugs, cable
- Enclosure:	PBT GF30 black
- Dimensions:	117x28x35 mm (overall)
- Protection:	At least IP65

● Technical data

Input

Sensor:	Without amplifier:	RTD: 1x Pt100 / 1x Pt1000 / 2x Pt100 / 2x Pt1000
	With amplifier:	RTD: 1x Pt100
Connection:	2-wire / 3-wire / 4-wire	
Accuracy:	Class A / Class B / Class AA	
Measuring range:	Without amplifier:	-30...+90 °C
	With amplifier:	-30...+80 °C
		Working range smallest: 50 °C

Output

Resistance thermometer:	RTD: 1x Pt100 / 1x Pt1000 / 2x Pt100 / 2x Pt1000	
Standard signal:	Current:	4...20 mA HART (superimposed)
	Connection:	in 2-wire current loop
	Overall current range:	3,6...21 mA
	Signal on error:	21 mA: on sensor break, sensor open circuit, sensor short circuit, underflow

Measuring amplifier

Combined error:	0,3% of range
Resolution:	16 Bit
Filter setting:	0...99 s
Transmission behaviour:	linear with temperature
Turn-on delay time:	<5 s
Measuring rate:	10 measurements / s
Configuration:	via software (HART communication)

Supply with 4...20 mA HART

Current loop:	12...40 VDC
Load:	$R = (U_B\text{-}12\ V) / 21\ mA$
Reverse battery protection:	available (no function, no damage)

● Applications

This sensor is suitable for climating and cold storage technics (eg marine refrigeration plants, climatic cabinets, building technics). With it's different models the sensor can be designed appropriate for the application.
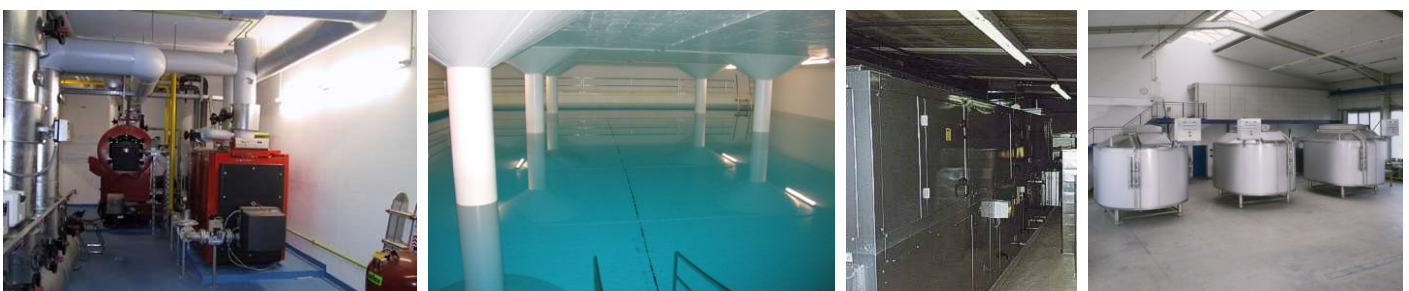

Photo: www.pixelquelle.de
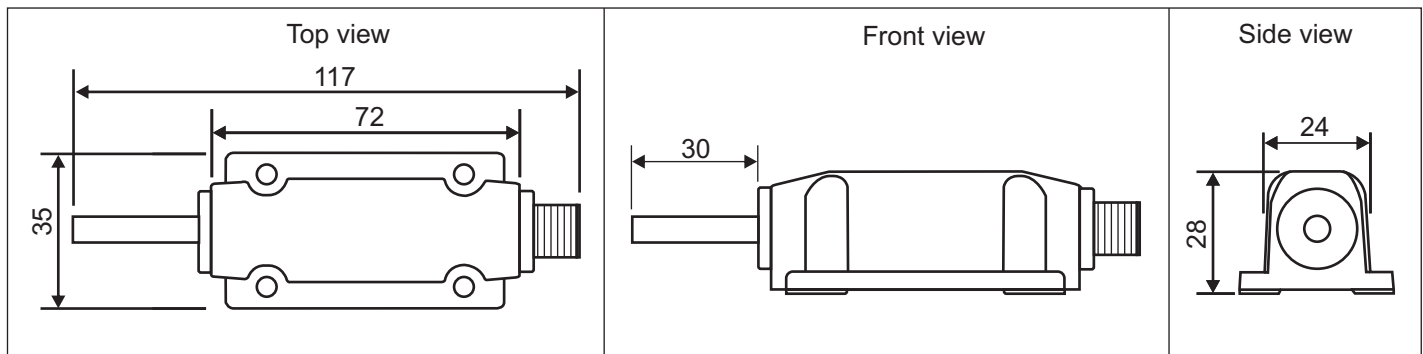
● *Technical data (continued)*

Ambient conditions

Operating temperature:	With amplifier:	-30...+80 °C
	Without amplifier:	-30...+90 °C
Storing temperature:	-30...+90 °C	

Mechanics

Enclosure:	Material:	PBT GF30
	Colour:	black (other colours on request)
	Flammability:	UL94 HB
Electrical connection:	Several plugs, cable	
Fitting position:	any	
Protection of device:	Ingress protection:	at least IP 65
		(dependent on used electrical connection)
	Enclosure:	inside completely potted
Weight:	approx. 50 g	
Dimensions:	ca. 117x28x32 mm (Protecting tube 30 mm, M12x1,5)	

● *Dimensions (in mm)*

Top view	Front view	Side view

● *Mounting dimensions (in mm)*

● *Electrical connection*

M12x1 4-pole	M12x1 5-pole	M12x1 8-pole	Super Seal 3-pole	Deutsch 3-pole

Deutsch 4-pole	Bayonet 4-pole	Valvel 4-pole	MIL 6-pol3	Cable outlet n-pole

Pin assignment

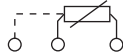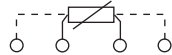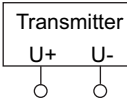|	2-wire		3-wire			4-wire				Transmitter U+	U-
Connection for 1 sensor											
M12, 4-pole	3	2	4	3	2	4	3	2	1	1	3
M12, 5-pole	3	2	4	3	2	4	3	2	1	1	3
M12, 8-pole	3	2	4	3	2	4	3	2	1	1	3
Super Seal, 3-pole	3	2	1	3	2					1	3
Deutsch DT04, 3-pole	C	B	A	C	B					A	B
Deutsch DT04, 4-pole	3	2	4	3	2	4	3	2	1	1	3
Bayonet, 4-pole	3	2	4	3	2	4	3	2	1	1	3
Valve, 4-pole	3	2		3	2		3	2	1	1	2
MIL, 6-poe	B	C	A	B	C	A	B	C	D	A	C
Cable, n-pole	bn	gn	ye	bn	gn	ge	bn	gn	wh	ye	wh
Cable, n-pole (DIN 60751)	rd	wh	rd	rd	wh	rd	rd	wh	wh		
Connection for 2 sensors											
M12, 4-pole — Sensor 1	4	3									
M12, 4-pole — Sensor 2	2	1									
M12, 5-pole — Sensor 1	4	3									
M12, 5-pole — Sensor 2	2	1									
M12, 8-pole — Sensor 1	3	2	4	3	2	4	3	2	1		
M12, 8-pole — Sensor 2	7	6	8	7	6	8	7	6	5		
Deutsch DT04, 4-pole — Sensor 1	4	3									
Deutsch DT04, 4-pole — Sensor 2	2	1									
Bajonett, 4-pole — Sensor 1	4	3									
Bajonett, 4-pole — Sensor 2	2	1									
Valve, 4-pole — Sensor 1		3									
Valve, 4-pole — Sensor 2	2	1									
MIL, 6-pole — Sensor 1	E	D	F	E	D						
MIL, 6-pole — Sensor 2	B	A	C	B	A						
Cable, n-pole (DIN 60751) — Sensor 1	rd	wh	rd	rd	wh	rd	rd	wh	wh		
Cable, n-pole (DIN 60751) — Sensor 2*	bk	ye	bk	bk	ye	bk	bk	ye	ye		

Sensor 2*: alternatively to bk (black) is also gr (grey) possible.

● Order code

`M R X X X X - X - X X X X`

Parameter	Option	Code
Transmitter:	Without	0
	With (4...20 mA HART)	2
Sensor:	1x RTD Pt100	1
	1x RTD Pt1000	2
	2x RTD Pt100	3
	2x RTD Pt1000	4
Sensor connection:	2-wire	1
	3-wire	2
	4-wire	3
Sensor accuracy:	Class A	1
	Class B	2
	Class AA	3
Protecting tube:	30 mm	030
Electrical connection:	M12x1, 4-pole	1
	M12x1, 5-pole	2
	M12x1, 8-pole	3
	Deutsch DT04, 3-pole	4
	Deutsch DT04, 4-pole	5
	Super Seal 1.5, 3-pole	6
	Bayonet (DIN), 4-pole	7
	Valve plug, 4-pole	8
	Cable, 2 m	9
	MIL, 6-pole	A
Diameter tube:	6 mm	6
Configuration:	Without	0
	Factory configuration[1]	1
	Customized[2] (to specify)	2
Special model:	No	0
	Yes (to specify)	1

1) Nominal measuring range: -30 °C...80 °C (LRL...URL) / Measuring range: -30...80 °C (LRV...URV) / Damping: 0 s

2) Settings are made according order

● HART Communication and configuration

The HART-Tool is a graphical user interface for the ME series with menu-driven progam for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device.
Operating systems: Windows 2000, Windows XP, Windows 7 and 8.1.
Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

Possible settings are:
Adjustment and simulation of output current, filter function, limits of nominal measuring range (URL, LRL),
limits of used measuring range URV, LRV), linear output signal, HART address, 2-point calibration

Please note: When using communication via a HART modem, a comunication resistance of 250 Ω has to be taken into account.