Characteristics

- Input:	See technical details
- Output:	4...20 mA current loop HART (2-wire)
- Voltage supply:	Out of current loop (12...40 VDC)
- Accuracy:	See technical details
- Process connection:	Customized / without (standard) / M12x1 female thread
- Electrical connection:	Several plugs
- Temperature range:	-20...+80 °C (ambient)
- Limit value contacts:	2 electronically (NPN / PNP)
- Adjustment:	Keys / software
- Protection:	At least IP65

Technical Data

Input		
Sensors:	Resistance thermometer Thermocouple Strain gauge (minimum 350 Ω) Piezo / PMW	
Current:	Up to 25 mA	
Voltage:	Up to 1000 m V / up to 10 V	
Resistance:	Up to 100 kΩ	
Potentiometer:	Up to 100 kΩ	
Output		
Current signal:	4...20 mA with superimposed communication signal (HART), 2-wire current loop	
Current range:	3,8...20,5 mA	
Signal on error:	3,6 mA (sensor short circuit, underflow) 21 mA (sensor break, sensor open circuit, overflow)	
Sensor supply		
Voltage:	1 V (maximum 3 mA)	
Performance		
Measuring amplifier:	Accuracy:	0,3% of range
	Resolution:	16 Bit
	Filter setting:	0...99 s
	Measuring rate:	10 measurements / s
	Configuration:	Keys on display / via software (HART communication)
	Transmission behaviour:	Linear with input signal
	Turn-on delay time:	<5 s
	Response time:	20 ms
Indicator / limit values:	Resolution:	-9999...9999 digit
	Error of measurement:	±0,2% of range, ±1 digit
	Temperature drift:	100 ppm/K
	Features / operation:	According VDMA 24574-1 up to 24574-4

Applications

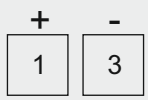
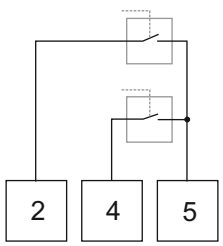
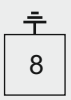
The HART transmitter is designed for the use in OEM devices. The indicator with limit value contacts and transmitter in a plastic housing becomes together with a customized sensor sub-assembly a complete sensor for industrial purposes, which is suitable for upmarket applications.

Technical Data (Continued)

Programmable Characteristics	
Measuring amplifier:	Measuring range start / measuring range end /
Display:	Range of indication / time of indication / decimal point / units / stabilisation of zero point / locking of programming / calibration points / TAG number
Limit value contacts:	Limit value 1 and 2 / hysteresis 1 and 2 / delay times 1 and 2
Indication	
Display:	7 segment, 8,5 mm, red, 4 digits, representation mirror-inverted 180° possible
Head of display:	Rotatable approx. 330°
Memory:	Minimum / maximum values
Indication:	- measuring value - unit of measurement - control menu
Decimal point:	Automatically or manually, dependent on measuring range / unit Representation: xxxx / xxx.x / xx.xx / x.xxx
Limit Contacts	
Electronically:	2x PNP or NPN (30 VDC, 200 mA) Option: 2x PNP or NPN (30 VDC, 1000 mA)
Indication:	1 LED red for each limit value
Voltage across:	<1 V
Settings:	With 3 keys (TouchM-Technology)
Setting range:	Switch point and hysteresis: any value within measuring range
Switching delay:	0,0...999,9 s
Failsafe function:	Adjustable
Galvanical insulation:	Switching outputs are separated from measuring amplifier
Supply	
Voltage:	HART current loop: 12...40 VDC VDC
Load:	R = (U_B-12 V) / 22 mA
Reverse battery protection:	available (no function, no damage)
Ambient Conditions	
Temperature:	Operating range: -20...+80 °C Storing: -20...+85 °C
Condensation:	Uncritical
Mechanics	
Dimensions:	See page 3
Process connection:	Without (standard), open braided wires for sensor connection / customized / M12x1 female thread
Electrical connection:	For device: see page 3 For sensor: up to 6 flexible leads (silicone), 100 mm, 0,09 mm²
Material:	Process connection: stainless steel 1.4571 (with M12x1 female thread and customized) Body: PBT GF30 Head of display: polycarbonate (makrolon)
Weight:	Approx.70 g
Fitting position:	Any
Protection:	At least degree IP65 (when electrical connection is plugged)

Connection M12-Plug (Example)

Assignment plug M12x1, 8-pole

Current loop 4...20 mA HART	Electronical limit value contacts	Shield		
				

Electrical Connection

M12x1	Super Seal	German	German	Bayonet	Valve	MIL	
							
4-, 5-, 8-pole	3-pole	3-pole	4-pole	4-pole	4-pole	6-pole	

Connection Limit value (LV)	M12 4-pole	M12 5-pole	M12 8-pole	Bayonet 4-pole	German 4-pole	German 3-pole	Super Seal 3-pole	Valve 4-pole	MIL 6-pole	
1 electronical LV	X	X	X	X	X			X	X	
2 electronical LV		X	X						X	

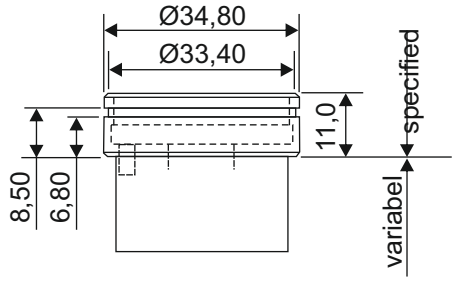
HART Communication and Configuration

The HART-Tool is a graphical user interface for the ME series with menu-driven progam for configuration. It can be used for starting up operation, configuration, analysis of signals, data backup and documentation of the device. Connection via HART interface DEV-HM for operating systems: Windows XP, W7, W8.1, W10. Possible settings are: Adjustment and simulation of output current, filter function, limits of measuring range, linear output signal, HART address, HART TAG number, 2-point calibration, 6-point calibration (linearization)

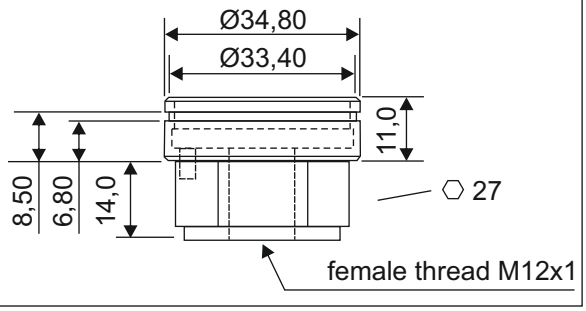
Please note: When using communication via a HART modem, a communication resistance of 250 Ω has to be taken into account.

Adapter Process Connection (in mm)

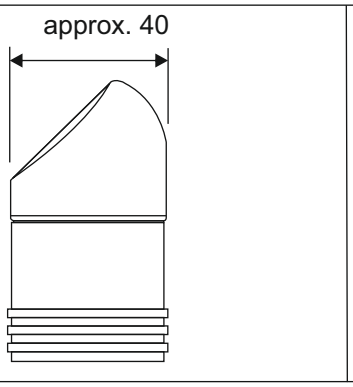
Customized
(no working drawing)

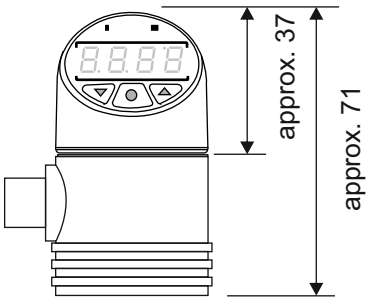


M12x1
(no working drawing)



Dimensions (in mm)





Ordering Code

O	E	X	X	X	X	X	X	-	X	X	X

Input:	Resistance thermometer Pt100	0
	Thermocouple Typ K	1
	Thermocouple Typ J	2
	Thermocouple Typ E	3
	Thermocouple Typ T	4
	Thermocouple Typ N	5
	Thermocouple Typ R	6
	Thermocouple Typ S	7
	Thermocouple Typ B	8
	mV (1000 mV maximum)	9
	mA (25 mA maximum)	A
	V (10 V maximum)	B
	R (100 kΩ maximum)	C
	Potentiometer (100 kΩ maximum)	D
	Strain gauge (5 mV/V maximum)	E
	PWM	F
	Piezo	G
Sensor Supply:	1 V (standard)	0
Process Connection:	Open braided wires for sensor connection (standard)	0
	Customized (please specify)	1
	M12x1 female thread	2
Limit Value Contacts:	2x PNP, 30 VDC, 200 mA (standard)	0
	1x PNP, 30 VDC, 200 mA	1
	Without	2
	2x NPN, 30 VDC, 200 mA	3
	1x NPN, 30 VDC, 200 mA	4
	2x PNP, 30 VDC, 1000 mA	5
	1x PNP, 30 VDC, 1000 mA	6
	2x NPN, 30 VDC, 1000 mA	7
	1x NPN, 30 VDC, 1000 mA	8
Electrical Connection:	M12, 4-pole	0
	M12, 5-pole	1
	M12, 8-pole	2
	German DT04, 3-pole	3
	German DT04, 4-pole	4
	Super Seal 1.5, 3-pole	5
	Bayonet (DIN), 4-pole	6
	Valve plug, 4-pole	7
	MIL, 6-pole	9
	Bendix, 6-pole	A
Configuration:	Factory setting[1)]	0
	Customized (please specify)[2)]	1
Other:	Special model	0

1) Measurement range: / Indicating range

2) Possible settings can be made using the technical data.

Accessories:

DEV-HM (HART-Interface, USB, Software) Order No.: 1310-00220