Characteristics

- Input:	level 100...2000 mm
- Output:	4...20 mA current loop HART (2-wire)
- Voltage supply:	out of current loop (12...40 VDC)
- Accuracy:	see technical details
- Process connection:	several options
- Electrical connection:	several plugs
- Temperature range:	-20...+80 °C (operation)
- Limit value contacts:	2 electronically (NPN, PNP)
- Adjustment:	keys / software
- Medium:	non aggressive fluids
- Protection:	at least IP65 / IP68

Technical data

Input		
Level:	100...2000 mm	
Medium:	non aggressive fluids	
Output		
Current signal:	4...20 mA with superimposed communication signal (HART), 2-wire current loop	
Current range:	3,6...21 mA	
Signal on error:	21 mA (sensor break, sensor open circuit, sensor short circuit, underflow)	
Performance		
Sensor:	Resolution:	4,5 mm,
	Hysteresis:	ca. 3mm
Measuring amplifier:	Accuracy:	0,3% of range
	Resolution:	16 Bit
	Filter setting:	0...99 s
	Transmission behaviour:	linear with level
	Measuring rate:	10 measurements / s
	Configuration:	keys on display / via software (HART-communication)
	Turn-on delay time:	<5 s
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
Programmable features		
Measuring amplifier:	measuring range start / measuring range end / filter	
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	

Applications

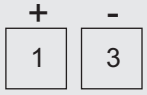
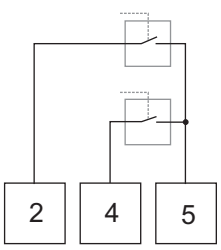
For use in industrial plants, terotechnology and public utility (eg tanks for hydraulic oil). With it's two configurable limit value contacts, the integrated display and the numerous electrical connections, the level sensor is also suitable for applications with higher requirements.

Technical data (continued)

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 NPN or PNP (30 VDC, 200 mA) Option: 2x NPN or PNP (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
	Medium:	0...+100 °C
Condensation:	uncritical	
Mechanics		
Dimensions:	see page 3	
Process connection:	3/4" / 1" / 1,5" / 1"NPT (adaptor)	
System pressure:	25 bar	
Electrical connection:	see page 3	
Material:	Protecting tube:	stainless steel 1.4571
	Float:	PE Ø24 (density medium: 1 or more) PE Ø29 Option: stainless steel Ø29 (1.4571)
	Adaptor:	stainless steel 1.4571
	Process connection:	stainless steel 1.4571
	Body:	PBT GF30
	Head of display:	polycarbonate
Weight:	approx. 200 g (300 mm, 1", M12)	
Fitting position:	vertical	
System pressure:	PN 25	
Protection of device:	Ingress protection:	at least IP 65 (electronics) IP68 (sensor)
	PCB:	potted

Connection M12x1-plug (example)

Assignement plug M12x1, 8-pole

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

Electrical connection

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

Option limit values

Connection Limit value (LV)	M12 4-pole	M12 5-pole	M12 8-pole	Bayonet 4-pole	Deutsch 4-pole	Deutsch 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	

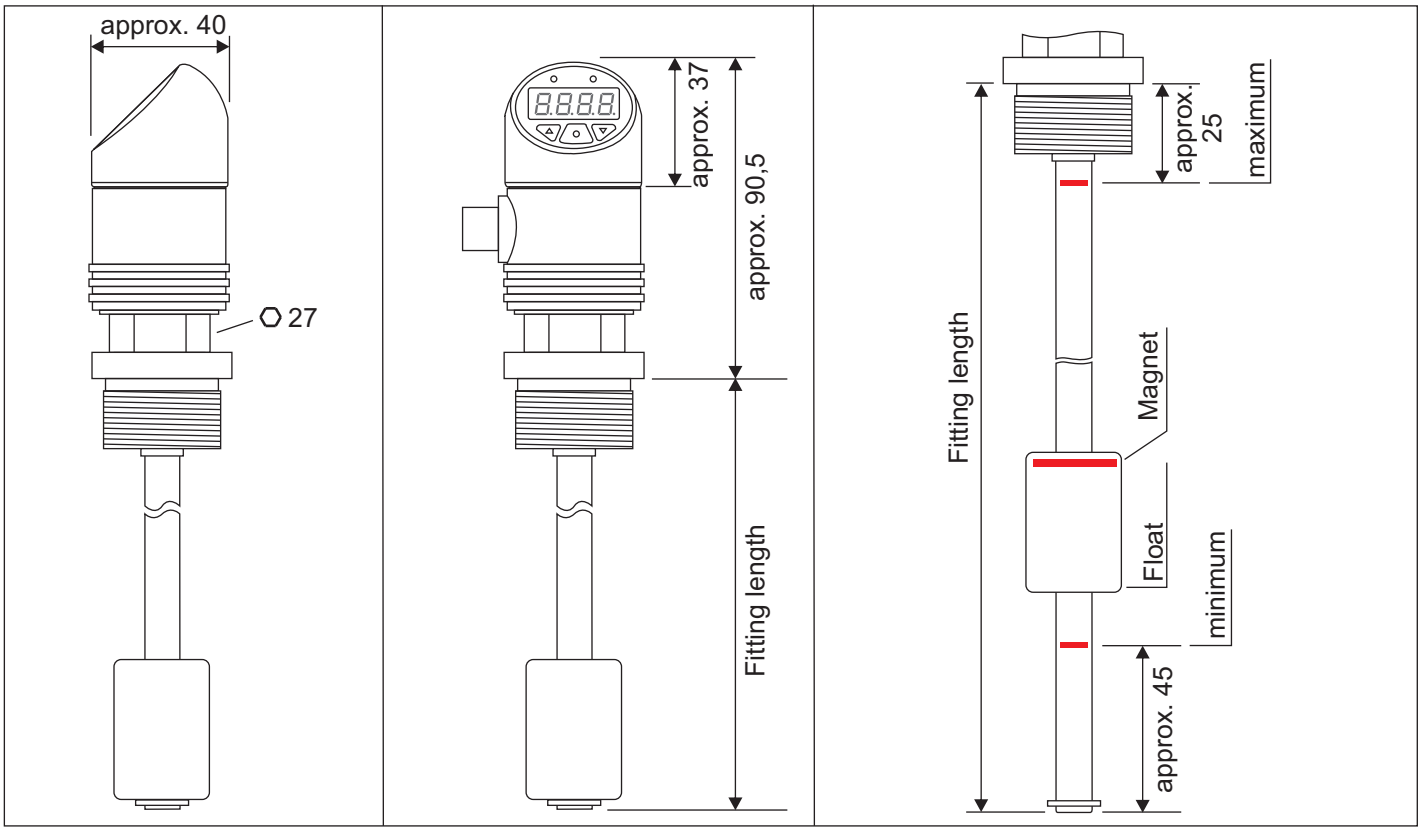
HART Communication and configuration

The HART-Tool is a graphical user interface for the ME series with menu-driven progam for configuration. It can be used for 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

Settings:
- Adjustment of output current
- Limits of measuring range
- 2-point calibration
- Simulation of output current
- Linear output signal
- up to 10-point calibration (linearization)
- Filter function
- HART address

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

Dimensions (in mm)



Ordering code

O	L	X	X	X	X	-	X	-	X	X	X	X

Input:	Level	0
Resolution:	4,5 mm	1
Float:	Plastics Ø24[1)]	1
	Plastics Ø29 (Standard)	2
	Stainless steel Ø29	3
Process connection:	1”	0
	1,5”	1
	1”NPT	2
	3/4" (for float 24 mm)	3
Fitting length:[2)]	100 mm	100
	200 mm	200
	300 mm	300
	400 mm	400
	600 mm	600
	1000 mm	A00
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
	Deutsch DT04, 3-pole	3
	Deutsch DT04, 4-poe	4
	Super Seal 1.5, 3-pole	5
	Bayonet (DIN), 4-pole	6
	Valve plug, 4-pole	7
	MIL, 6-pole	9
Configuration:	Factory setting[3)]	0
	Customized (please indicate)[4)]	1
Other:	Special model	0

1) For float with Ø24 mm the minimum density is 1

2) Other fitting lengths: 150 = 150 mm / 250 = 250mm / 350 = 350 mm / 450 = 450 mm / 500 = 500 mm / 550 = 550 mm / 650 = 650 mm / 700 = 700 mm / 800 = 800 mm / 850 =850 mm / 900 = 950 mm / A05 = 1050 mm / A10 = 1100 mm / A15 = 1150 mm / A20 = 1200 mm / A25 = 1250 mm / A30 = 1300 mm / A35 = 1350 mm / A40 = 1400 mm / A45 = 1450 mm / A50 = 1500 mm / A55 = 1550 mm / A60 = 1600 mm / A65 = 1650 mm / A70 = 1700 mm / A75 = 1750 mm / A80 = 1800 mm / A85 = 1850 mm / A90 = 1900 mm / A95 = 1950 mm / B00 = 2000 mm

3) Measuring range: / Indicating range

4) All settings, which are possible according the technical data, can be selected. For not given values the details of factory-set are used.

Accessories:

DEV-HM (Interface HART, USB, software) Order No.: