


● Characteristics

1500 - MODULAR - ECONOMIC -

	- 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:	$R = (U_B - 12 \text{ V}) / 22 \text{ mA}$
Reverse battery protection:	available (no function, no damage)

Ambient conditions

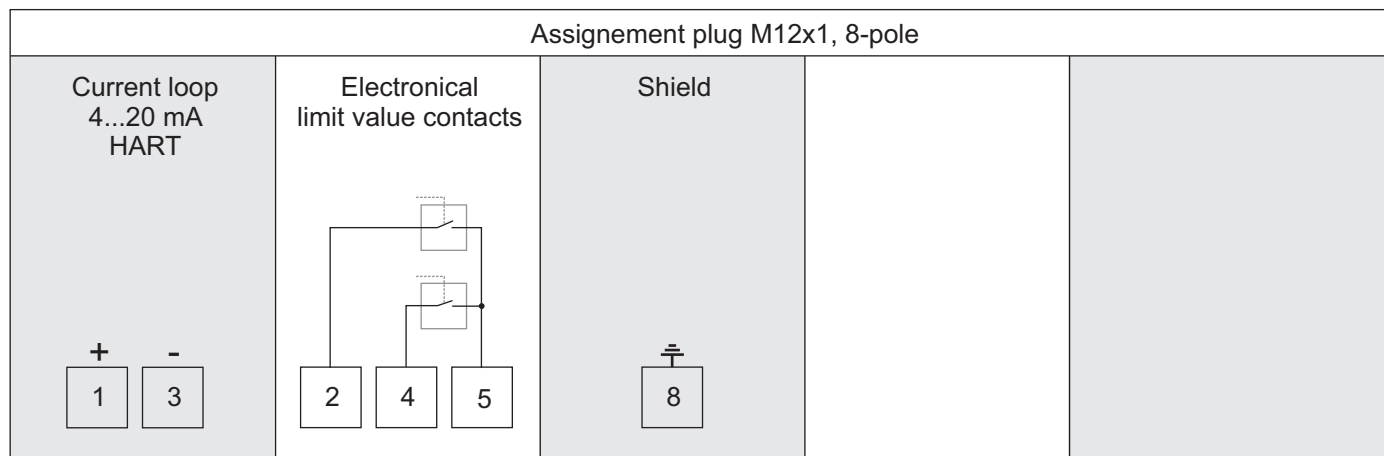
Temperature:	Operating range:	-20...+80 °C
	Storing:	-20...+85 °C
	Medium:	0...+100 °C
Condensation:	uncritical	

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)
Weight:	Adaptor:	stainless steel 1.4571
	Process connection:	stainless steel 1.4571
	Body:	PBT GF30
	Head of display:	polycarbonate
Fitting position:	approx. 200 g (300 mm, 1", M12) vertical	
System pressure:	PN 25	
Protection of device:	Ingress protection:	at least IP 65 (electronics) IP68 (sensor)
	PCB:	potted

● Connection M12x1-plug (example)

Assignment plug M12x1, 8-pole



● **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	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	
Limit value (LV)										
1 electrical LV	X	X	X	X	X			X	X	
2 electrical LV		X	X						X	

● **HART Communication and configuration**

The HART-Tool is a graphical user interface for the ME series with menu-driven program for configuration. It can be used for putting into operation, configuration, analysis of signals, data backup and documentation of the device.

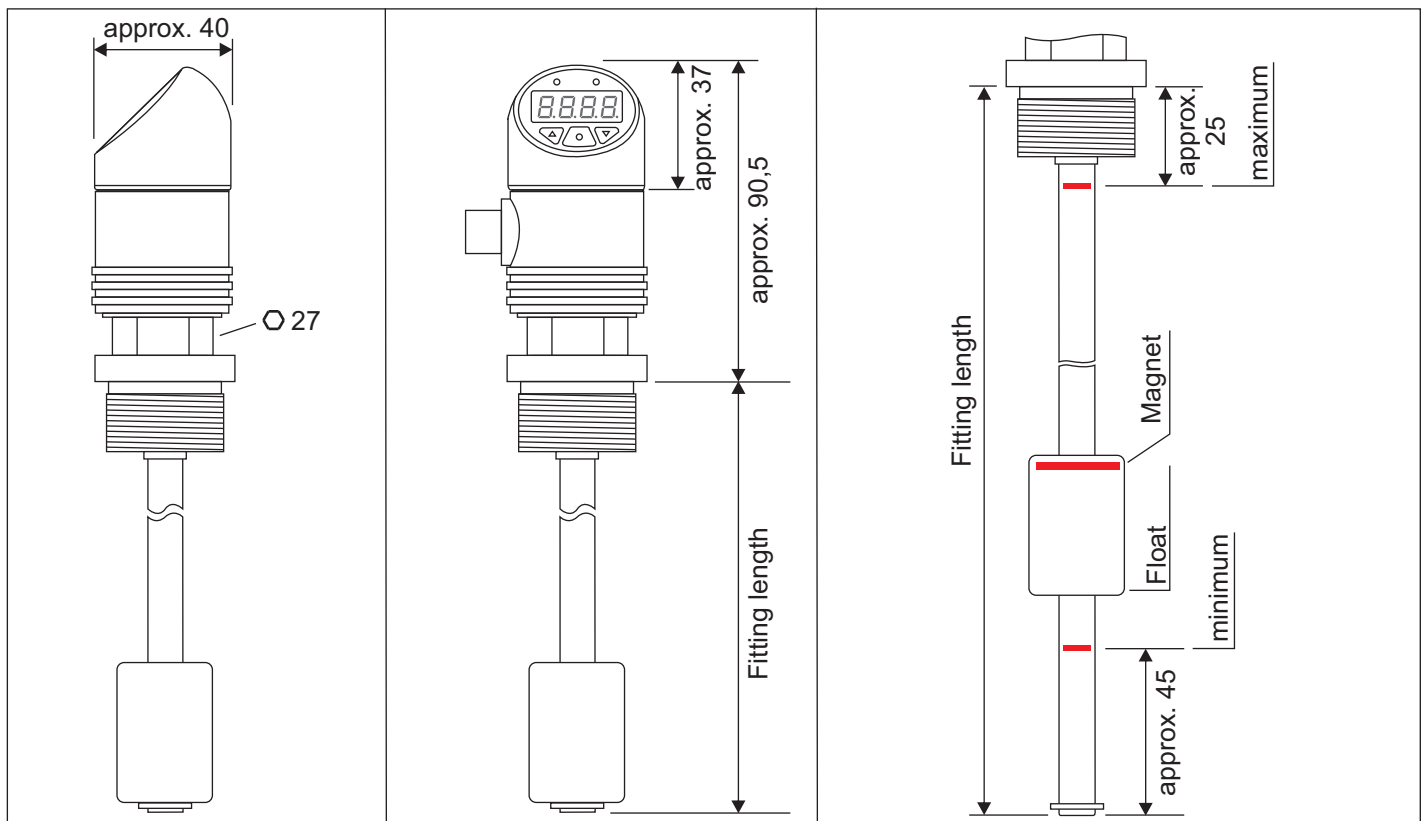
Operating systems: Windows 2000, Windows XP, Windows 7 and 8.1

Connection via HART interface (modem) with USB interface of a PC or hand-held HART communicator

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

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

● **Dimensions (in mm)**



● **Ordering code**

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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-pole												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.: