


● Characteristics

420 - 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
	- Electrical connection:	lateral, Option: upwards
	- Ambient temperature:	-40...+80 °C
	- Adjustment:	via software
	- Medium:	non aggressive fluids
- Protection:	at least IP65 / IP68	

● Technical Data

Input

Level: 100...1000 mm
 Medium: non aggressive fluids

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)

Performance

Sensor:	Resolution:	4,5 mm,
	Hysteresis:	ca. 3mm
Measuring amplifier:	Resolution:	16 Bit
	Accuracy:	0,3% of range
	Filter setting:	0...99 s
	Transmission behaviour:	linear with level
	Measuring rate:	10 measurements / s
	Configuration:	via software (HART-communication)
	Turn-on delay time:	<5 s
Response time:	20 ms	

Programmable Features

Measuring amplifier: measuring range start / measuring range end / filter

● Applications

For use in industrial plants, terotechnology and public utility (eg tanks for hydraulic oil). With it's HART interface for configuration and the numerous electrical connections, the level sensor is also suitable for applications with higher requirements.



● Technical Data (Continued)

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)









Environmental Conditions

Temperature: Operating range: 0...+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: lateral
Option: upwards
Plugs and cables: 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
Cover: PBT GF30
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

● **Electrical Connection**

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

● **Connection-Example M12-Plug**

Plug assignment M12x1, 8-pole				
current loop 4...20 mA HART				
+	-			
1	3			

● **HART Communication and Configuration**

The HART-Tool is a graphical user interface with menu-driven program for configuration. It can be used for start-up, configuration, signal analysis, data backup and device documentation.

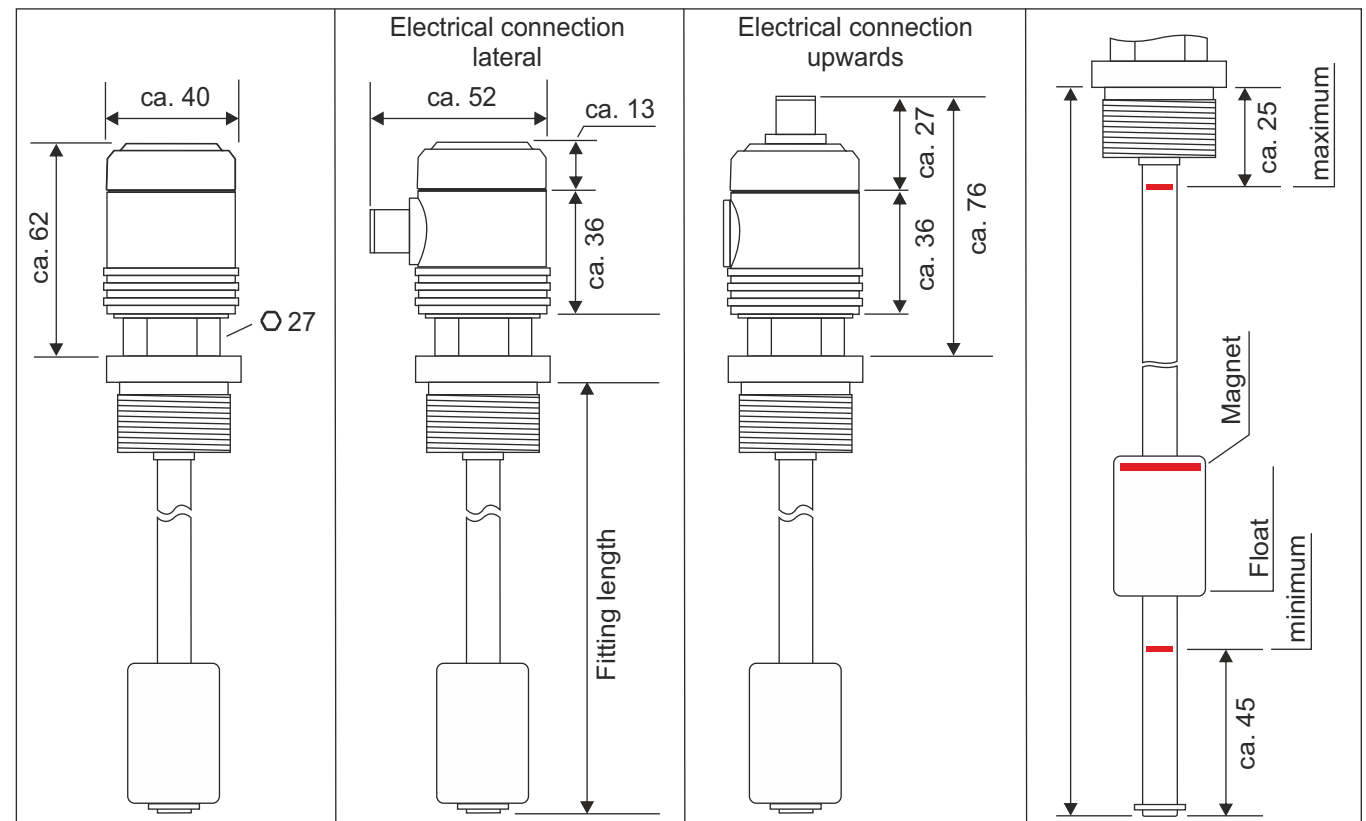
Operating systems: Windows XP, W7, W8.1, W10

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)**



● **Order Code**

O V 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
Electrical connection:	Lateral (Standard)																			0
	Upwards																			1
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
	Cable, 2m																			8
	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 = 750 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) For factory setting, measuring range equals indicating range
- 4) Settings as per technical data can be selected.

Accessories:
 DEV-HM (Interface HART, USB, software) Order No.: **01310-00220**