

● 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 putting into operation, configuration, analysis of signals, data backup and documentation of the device.

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)



