

NIVOPRESS D level transmitters operate in 2-wire systems that convert the relative pressure (*input signal*) into a direct current signal (*output signal*). The silicone oil (*cooking oil on request*) transmission fluid transmits the pressure value from the stainless steel diaphragm to the piezoresistive sensor of the transmitter — smart electronics and HART® communication feature local and remote programming. The transmitters are available in standard and non-sparking (*Ex ia*) versions.

Due to their design, the NIVOPRESS D front diaphragm level transmitters are particularly suitable for level measuring tasks by measuring pressure at the bottom of the tank. The same design makes it an excellent instrument for food applications (*milk, pastes*). The smooth membrane surface and the maximum permissible medium temperature of +125 °C ensure hygienic cleaning in technologies that require regular cleaning and eliminate the risk of clogging. The device can be used for all level measurement tasks with atmospheric pressure above the liquid column.

FEATURES

- 0.25% accuracy
- Gauge or absolute pressure transmitter
- Piezoresistive sensor with stainless steel flush diaphragm
- Wide pressure range
- Temperature compensation
- HART® communication
- Plug-in display
- Wide variety of process connections
- IP65
- Ex version

APPLICATIONS

- Liquids and masses in tanks and vessels
- Chemicals with dense vapor or gas layers above the surface
- Foaming liquids
- Highly viscous and corrosive substances

CERTIFICATES

- ATEX (Ex ia G)

OPERATION

Hydrostatic level measurement principle

Provided the density is constant, the level depends on the pressure head.

$$P_{hydr} = 10^{-5} \rho \cdot g \cdot h$$

$$\downarrow$$

$$h = 10^5 \frac{P_{hydr}}{\rho \cdot g}$$

$$\downarrow$$

Maximum possible value of „h“: $h_{max} = 10^5 \frac{P_{hydr,max}}{\rho \cdot g}$

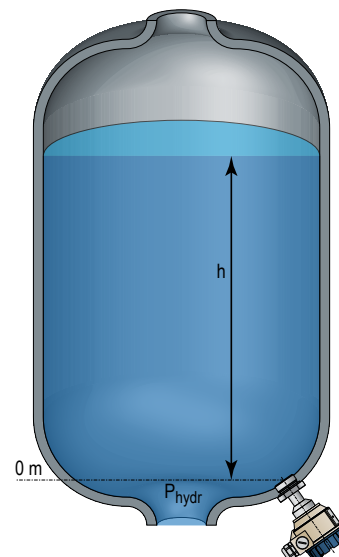
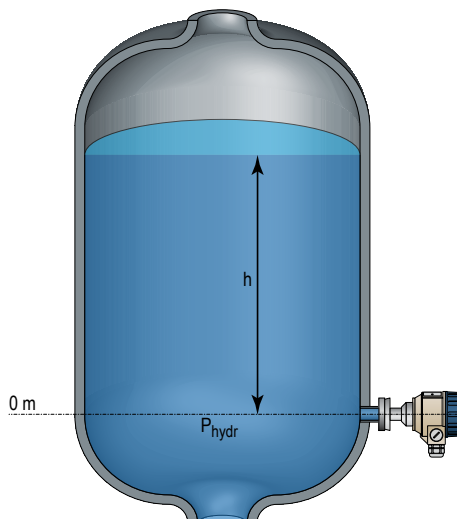


SAP-203 display



DT-500

- P_{hydr} [bar] = hydrostatic pressure
- ρ [kg/m³] = density of the medium
- g [m/s²] = gravitational acceleration
- h [m] = distance between the middle of the diaphragm and the level of the material
- $P_{hydr,max}$ = highest pressure limit



TECHNICAL DATA

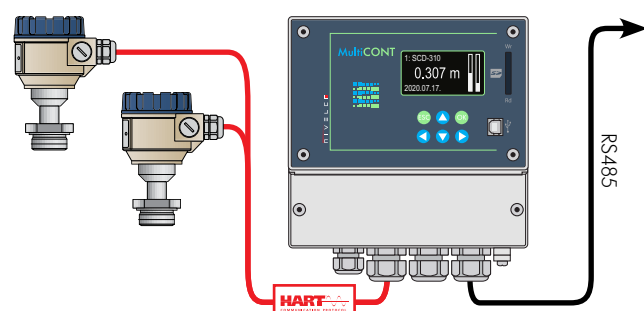
		D-500 / D-700	D-600
Measured Process Value		Level, pressure	
Sensor		Piezoresistive silicium sensor, with stainless steel flush diaphragm	
System		2-wire	
Power Supply		10...36 V DC	
Measuring Range		0...400 bar (as per order code)	
Overpressure		0.5...600 bar (as per order code)	
Downscale Rate		~1:2	
Zero Point Offset		50% of the measuring range	
Accuracy (Linearity Error)		P > 0.4 bar: $\pm 0.25\%$; p \leq 0.4 bar: $\pm 0.5\%$	
Output	Analog	4...20 mA	
	Display	6-digit plug-in LCD display (SAP-203)	
	Digital Communication	HART®	
Ambient Temperature		-40...+70 °C, with display: -25...+70 °C	-30...+70 °C, with display: -25... +70 °C,
		Ex variant: see "Ex Information"	
Range of Temperature Compensation		p < 100 bar: 0...+70 °C p \leq 0.4 bar: 0...+50 °C	
Medium Temperature		-25...+125 °C	
Material of Wetted Parts	Protective Diaphragm	1.4435 (316L) stainless steel	
	Process Connection		
	Seal	p < 100 bar: Viton®; p > 100 bar: NBR; EPDM is ordered separately	
Pressure Transmitting Medium		Silicone oil; food industry compatible oil is ordered separately	
Housing Material		Powder-coated aluminum or stainless steel	Plastic (PBT)
Process Connection		As per order code	
Electrical Connection		2x M20x1.5 plastic cable glands, for 6...12 mm cable diameter + Two internally threaded 1/2" NPT connection for protective pipes for 0.5...1.5 mm² wire cross section	
Electrical Protection		Class III	
Ingress Protection		IP65	
Weight		~2 kg	~1.6 kg

Ex INFORMATION

D□□-5□□-□Ex / D□□-6□□-□Ex	
Protection	Intrinsic safety
Ex marking	II 1 G Ex ia IIC T6 ... T4 Ga
Intrinsic safety data	$U_i \leq 30$ V; $I_i \leq 100$ mA; $P_i \leq 0.75$ W; $C_i \leq 14$ nF; $L_i \leq 180$ μ H
Process temperature range	Without display: -40...+70 °C; With display: -25...+70 °C

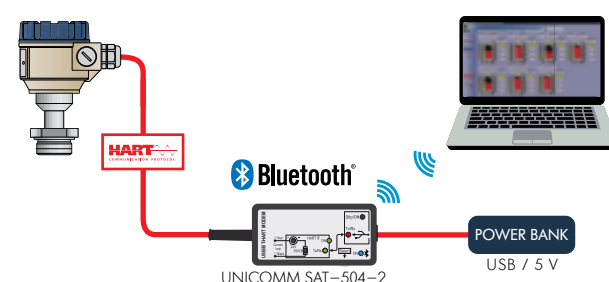
HART® MULTIDROP LOOP

MultiCONT multichannel process controller can handle up to 15 normal HART® or up to 4 Ex-proof HART® capable **NIVELCO** transmitters. Digital (HART®) information is processed, displayed, and if necessary, transmitted via RS485 to a computer. Remote programming of the transmitters is also possible. Processes can be visualized on computers by using **NIVISION**.



COMPUTER CONNECTION

HART® output devices and a **UNICOMM SAK-305** HART-USB modems can be connected to a PC via a wire, while using a **UNICOMM SAT-504** HART-USB/Bluetooth® modem, the transmitters can be connected via Bluetooth®. All data measured by the **NIVOPRESS D** can be displayed on the PC, and the devices can be reprogrammed if required. For a HART® modem, a maximum of 15 standard transmitters can be connected. In addition, the **EView2** configuration or **NIVISION** process visualization software can also be used.



NIVOPRESS D-500/D-600

5 years

2-wire compact hydrostatic level transmitter for liquids
with stainless steel flush diaphragm piezoresistive sensor

Version

D ■ ■ - ■ ■ 1 - ■

T	Transmitter
B	Transmitter with local LCD display

Process connection

D ■ ■ - ■ ■ 1 - ■

C	1/2" BSP (p > 2.5 bar) (Ex version not available)
E	1" BSP
S	1" NPT
F	1 1/2" BSP
T	1 1/2" NPT
L	1" TriClamp (ISO 2852, 0.25...16 bar)
M	1 1/2" TriClamp (ISO 2852, p ≤ 16 bar)
N	2" TriClamp (ISO 2852, p ≤ 16 bar)
O	DN25 Pipe coupling (DIN 11851, 0.25...40 bar)
P	DN40 Pipe coupling (DIN 11851, 0.25...40 bar)
R	DN50 Pipe coupling (DIN 11851, 0.25...25 bar)

Housing

D ■ ■ - ■ ■ 1 - ■

5	Aluminum (powder-coated)
6	Plastic, PBT, fiberglass-reinforced
7	* Stainless steel

* Ex version under approval

Range (gauge) / Overpressure

D ■ ■ - ■ ■ 1 - ■

1	0...0.16 bar / 0.5 bar (with min. 1" process connection)
2	0...0.25 bar / 1 bar (with min. 1" process connection)
3	0...0.4 bar / 1 bar (with min. 1" process connection)
4	0...0.6 bar / 3 bar (with min. 1" process connection)
5	0...1 bar / 3 bar (with min. 1" process connection)
6	0...1.6 bar / 6 bar (with min. 1" process connection)
7	0...2.5 bar / 6 bar
8	0...4 bar / 20 bar
9	0...6 bar / 20 bar
A	0...10 bar / 20 bar
B	0...16 bar / 60 bar
C	0...25 bar / 60 bar
D	0...40 bar / 100 bar
E	0...60 bar / 120 bar
F	0...100 bar / 250 bar
G	0...160 bar / 500 bar
H	0...250 bar / 500 bar
J	0...400 bar / 600 bar

Output / Certificates

D ■ ■ - ■ ■ 1 - ■

2	4...20 mA
4	4...20 mA + HART®
6	4...20 mA / Ex ia G
8	4...20 mA + HART® / Ex ia G

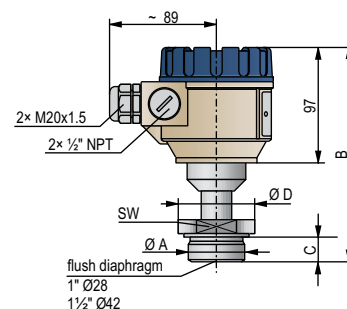
Available on request (should be given in the text of the order)

Customised 4...20 mA output calibration for ranges other than above

Filled with food compatible oil

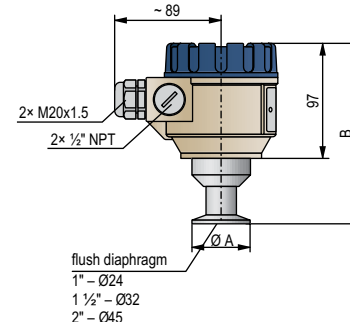
Accessories sold separately; see relevant page for details

S A P - 2 0 3 - 0	Plug-in display module
S A T - 3 0 4 - 0	HART®-USB modem
S A T - 5 0 4 - ■	HART®-USB/Bluetooth® modem
S A K - 3 0 5 - 2	HART®-USB/RS485 modem
S A K - 3 0 5 - 6	HART®-USB/RS485 modem / [Ex ia G]
E A A - 6 0 4 - 0	1/2" BSP / 1/2" NPT (1.4571)
N A Z - 1 0 4 - 0	1" BSP / 1/2" BSP (1.4571)
N A Z - 1 0 7 - 0	1/2" BSP / 1" BSP (1.4571)



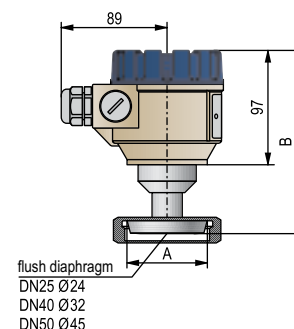
DTC / DTE / DTS / DTF / DTT
-500 / 600

Type	DTC	DTE	DTS	DTF	DTT
A	1/2" BSP	1" BSP	1" NPT	1 1/2" BSP	1 1/2" NPT
B	190	193	197	185	189
C	15	19	26	22	27
D	30	50	52	65	70
SW	27	44	40	55	55



DTL / DTM / DTN-500 / 600

Type	DTL	DTM	DTN
TriClamp	1"	1 1/2"	2"
A	50.5	64	
B	183	167	



DTO / DTP / DTR-500 / 600

Type	DTO	DTP	DTR
MILCH	DN25	DN40	DN50
A	44	56	68.5
B	186	170	166