

# SEM RAD

# NIVOPRESS D

LEVEL AND PRESSURE TRANSMITTER



- ◆ 4-20 mA output
- ◆ HART communication
- ◆ Stainless steel flush diaphragm
- ◆ Wide variety of process connections
- ◆ Great choice of ranges
- ◆ Accuracy up to 0,25 %
- ◆ Plastic or aluminium housing
- ◆ IP67
- ◆ ATEX certified versions

## ABOUT NIVOPRESS DT

NIVOPRESS DT series is a 2-wire microprocessor controlled pressure and level gauge. The loop powered transmitter can be converted into indicator by the use of the plug in display module. The unit measures the hydrostatic pressure by means of the ceramic sensor and for level gauging it compares the water head with the actual atmospheric pressure.

The piezoresistive sensor is protected by a flush diaphragm with silicon oil between the two for pressure transfer.

Smart electronic makes on site and HART communication remote programming possible.

EEx ia and EEx d certified models are also available.

## APPLICATION

NIVOPRESS DT flush diaphragm pressure and level transmitters/indicators provide simple and highly reliable solution for the continuous monitoring of the pressure and level of liquids and masses.

Its robust design, high overload capability and wide temperature range

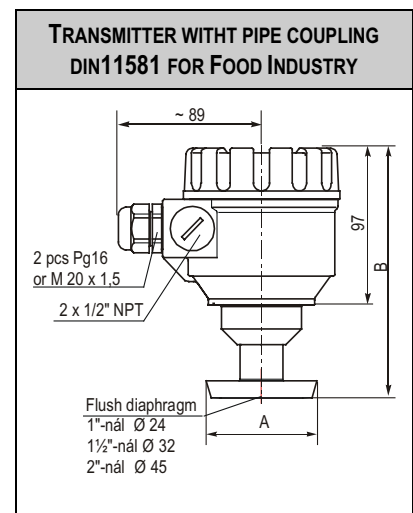
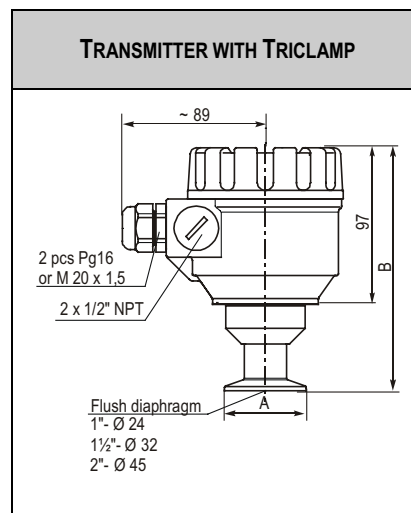
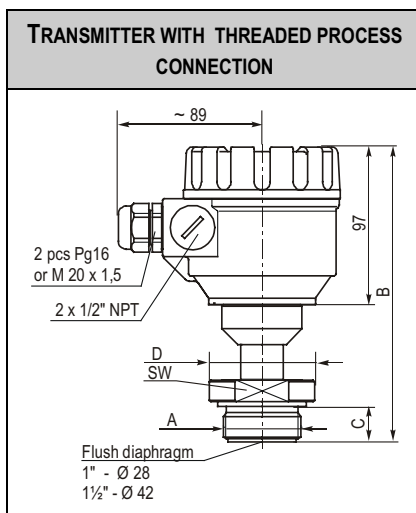
The flat surface of the diaphragm avoids the risk of material build up and the maximum medium temperature of 125 °C allows proper (CIP) cleaning required by the regular cleaning processes of the food industry and similar hygienic applications.

# TECHNICAL DATA

Measurement	Level, pressure
Sensor	Piezoresistent silicium sensor, with protection diaphragm
Pressure transfer medium	Silicone oil*
Range	In accordance with the order code
Maximum pressure	In accordance with the order code
Turn down	~ 1 : 2
Zero adjustment	50% of the range
Output	4 ... 20 mA, (limit values 3.9 ... 20.5 mA) HART (minimum loop resistance 250 ohm)
Damping	0 ... 30 s, selectable
Error indication	22 mA or 3.8 mA
Maximum load	$R_s = (U_t - 12 V) / 0,02 A$ , $U_s =$ voltage of the power supply
Display module	6-digites LCD signals, engineering units and bargraph
Power supply	10 ... 36 V DC
Accuracy (linearity, switching difference: repeatability)	$p > 0.4 \text{ bar} \pm 0.25 \% \text{ or } 0.5 \%$ $p \leq 0.4 \text{ bar} \pm 0.5 \%$
Range of temperature compensation	0 °C ... 70 °C
Ambient temperature	-40 °C ... +70 °C with display module: -25 °C ... +60 °C
Medium temperature	-25 °C ... +125 °C
Electric protection	Class III
Ingress protection	IP 67
Ex marking	II 1/2 G EEx ia IIC T6 ... T4, ill. II 1 G EEx d IIC T6 ... T4
Intrinsic safety data	$U_{max}: 30 V$ , $I_{max}: 140 \text{ mA}$ , $P_{max}: 1W$ , $C_i < 10 \text{ nF}$ , $L_i < 200 \mu H$
Process connection	In accordance with the order code
Electric connection	Outer diameter of the cable: $\varnothing 6 \dots \varnothing 12 \text{ mm}$ for M 20 x 1.5 conduit: for ordinary and EEx ia certified units $\varnothing 9 \dots \varnothing 11 \text{ mm}$ (depending on conduit) for EEx d certified units Wire cross section: max. 1.5 mm <sup>2</sup>
Housing	Paint coated aluminium or plastic (VALOX 412)
Material of wetted parts	Protection diaphragm: stainless steel DIN 1.4571 Process connection: stainless steel DIN 1.4571 Gasket: VITON $p < 100 \text{ bar}$ NBR $p > 100 \text{ bar}$ EPDM for special order
Mass	~ 2 kg

\* For special order edible oil

## DIMENSIONS



TYPE	DTE... DBE...	DTF... DBF...	DTS... DBS...	DTT... DBT...
A	1"BSP	1½"BSP	1"NPT	1½"NPT
B	193	185	~200	~201
C	19	22	25	26
D	50	85	50	65
SW	44	55	44	55

TYPE	DTL... DBL...	DTM... DBM...	DTN... DBN...
	1"	1½"	2"
A	50.5	50.5	64
B	183	183	167

TYPE	DTO... DBO...	DTR... DBR...	DTP... DBP...
	DN 25	DN 50	DN 40
A	44	68.5	56
B	181	165	165

# PROGRAMMING

The transmitter supports three different ways of programming:

- On site, without SAP-203 display module by modifying the process temperature and measuring output current.
- On site, with SAP-203 display module without the need for temperature changes.
- Remotely by HART on PC or by the universal control unit of MultiCONT PR-100.

Sophisticated programming with HART or with the SAP-203 indicator module: measurement of level, volume and pressure, as well as error indication, damping, linearisation.

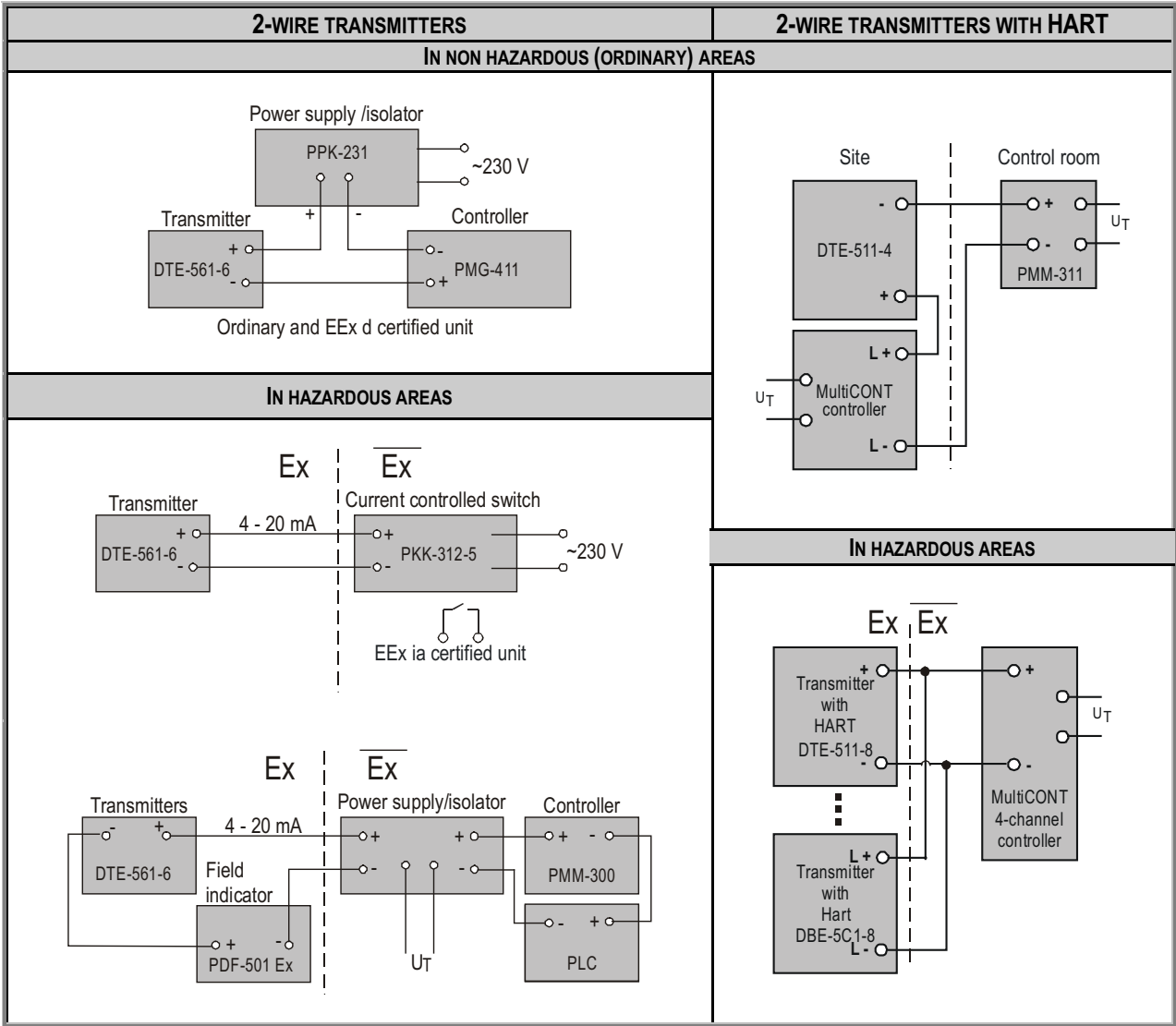
# APPLICATIONS

# EX PROTECTION

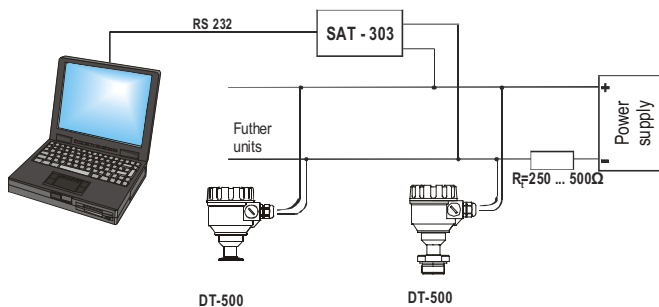
The unit is suitable for level measurement in hazardous areas.

## CONDITIONS OF THE EX APPLICATION

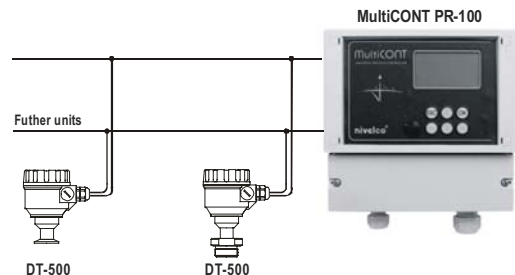
- The unit can only be powered by a duly certified EEx ia IIC power supply with features according to the Technical Data above.
- Housing of the transmitter should be grounded.



## ARRANGEMENT WITH PC



## ARRANGEMENT WITH MULTICONT PR-100



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## ORDER CODE (Not all combination possible)

NIVOPRESS D   -   -

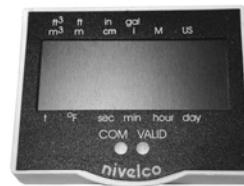
FUNCTION	CODE	PROCESS CONNECTION	CODE	HOUSING	CODE	RANGE / MAXIMUM PRESSURE	CODE	ACCURACY	CODE	OUTPUT / Ex	CODE
Transmitter	T	1" BSP	E	Aluminium	5	-1 ... 0 bar 3 bar	0	0.25 %	1	4 ... 20 mA	2
Transmitter + Display	B	1½" BSP	F	Plastic	6	0 ... 0.1 bar 1 bar	1	0.5 %	2	4 ... 20 mA / HART	4
		1" Triclamp	L			0 ... 0.25 bar 1 bar	2			<b>EX VERSIONS</b>	
		1½" Triclamp	M			0 ... 0.4 bar 1 bar	3			4 ... 20 mA / EEx ia	6
		2" Triclamp	N			0 ... 0.6 bar 3 bar	4			4 ... 20 mA / HART/ EEx ia	8
		FI DN 25*	O			0 ... 1.0 bar 3 bar	5			4 ... 20 mA / EEx d	A
		FI DN 40*	P			0 ... 1.6 bar 6 bar	6			4 ... 20 mA / HART / EEx d	B
		FI DN 50*	R			0 ... 2.5 bar 6 bar	7			4 ... 20 mA / EEx d + EEx ia	C
		1" NPT	S			0 ... 4.0 bar 12 bar	8			4 ... 20 mA / EEx d + EEx ia	D
		1½" NPT	T			0 ... 6.0 bar 12 bar	9				
						0 ... 10 bar 25 bar	A				
						0 ... 16 bar 50 bar	B				
						0 ... 25 bar 50 bar	C				
						0 ... 40 bar 120 bar	D				
						0 ... 60 bar 120 bar	E				
						0 ... 100 bar 250 bar	F				
						0 ... 160 bar 500 bar	G				
						0 ... 250 bar 500 bar	H				
						0 ... 400 bar 600 bar	J				

\*Pipe coupling for Food Industry DIN11581

## ACCESSORIES TO ORDER



HART MODEM: SAT-303



DISPLAY: SAP-203

## ADDITIONAL INSTRUMENTS

To complete the temperature transmitter to fulfil process tasks such as further signal processing, display in the control room or limit switching the following units are suggested for:

- **MultiCONT PR-100** wall mounting, universal, multi-channel controller/indicator
- **UNICONT PMM-312** panel mount controller/indicator
- **UNICONT PDF-501** on site loop indicator
- **UNICONT PKK-312** current controlled switch



PR-100



PMM-312



PDF-501



PKK-312

Technical specification may be changed without notice