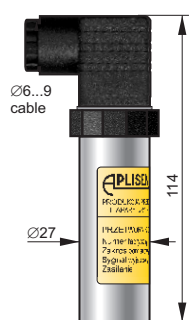


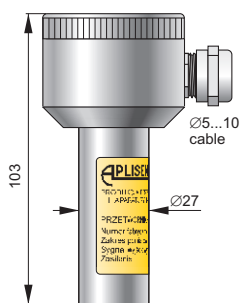
# SMART DIFFERENTIAL PRESSURE TRANSMITTER PRE-28.SMART



- ✓ 4...20 mA output signal + HART protocol
- ✓ Intrinsic safety certificate (ATEX, IECEx)
- ✓ Static pressure limit up to 413 bar
- ✓ Accuracy 0,1%
- ✓ Gold plated diaphragms (Au)
- ✓ Wetted parts material 316L/Hastelloy C276
- ✓ Marine certificate DNV, BV



**PD type**  
IP65



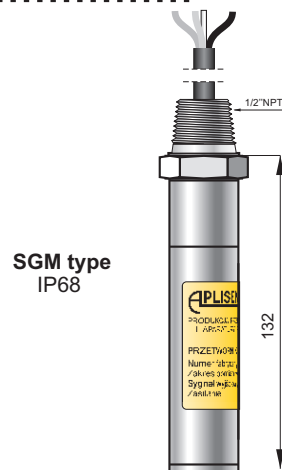
**PZ type**  
PZ316 type  
IP66



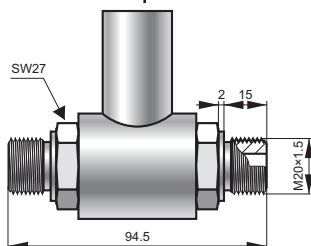
**PM12 type**  
IP67



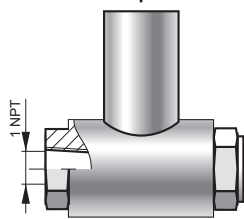
**SG type**  
IP68



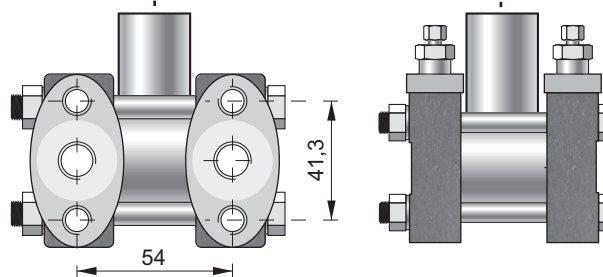
**SGM type**  
IP68



**P type** process connection



**PN type** process connection



**C and CR type** process connection to mount with a valve manifold

### Measuring ranges

No.	Nominal measuring range (FSO)	Minimum set range	Rangeability	Overpressure limit/ static pressure limit
1	0...70 bar (0...7 MPa)	7 bar (700 kPa)	10:1	exception: 70 bar for P type
2	0...16 bar (0...1,6 MPa)	1,6 bar (160 kPa)	10:1	C-type: 250 / 320 / 413 bar (250 bar for PED version) P-type 40 bar for
3	0...2,5 bar (0...250 kPa)	0,2 bar (20 kPa)	12,5:1	
4	0...1 bar (0...100 kPa)	50 mbar (5k Pa)	20:1	
5	0...0,25 bar (0...25 kPa)	10 mbar (1k Pa)	25:1	
6	-0,5...0,5 bar (-50...50 kPa)	0,1 bar (10 kPa)	10:1	
7	-100...100 mbar (-10...10 kPa)	10 mbar (1 kPa)	20:1	
8	-5...70 mbar (-0,5...7 kPa)	4 mbar (0,4 kPa)	18:1	
9	-25...25 mbar (-2,5...2,5 kPa)	2 mbar (0,2 kPa)	25:1	C-type: 20 bar (10 bar for PED version)

### Technical data

#### Metrological parameters

<b>Accuracy</b>	$\leq \pm 0,1\%$ of calibrated range
<b>Long-term stability</b> (for the basic range)	$\leq$ accuracy for 3 years
<b>Thermal error</b>	$< \pm 0,08\%$ (FSO) / 10°C max. $\pm 0,3\%$ (FSO) in the whole compensation range
<b>Thermal compensation range</b>	-25...80°C
<b>Zero shift error for static pressure</b>	0,01% (FSO) / 10 bar for ranges no. 3, 4, 5, 6, 7, 9 0,03% (FSO) / 10 bar for range no. 8 0,06% (FSO) / 10 bar for ranges no. 1, 2 Zeroing the transmitter in conditions of static pressure can eliminate this error.
<b>Response time</b>	16..230ms (programmable)
<b>Additional electronic damping</b>	0...30 s
<b>Error due to supply voltage changes</b>	0,002% (FSO) / V

#### Materials

<b>Wetted parts</b>	SS316L, Hastelloy C276
<b>Diaphragms</b>	SS316L, Hastelloy C 276, Au
<b>Casing:</b>	SS304 Optional: SS316

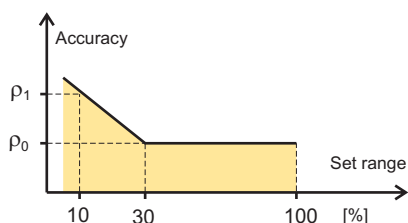
#### Operating conditions

<b>Operating temperature range (ambient temp.)</b>	-25...85°C Exia version -25...80°C
<b>Medium temperature range</b>	-25...120°C over 120°C – measurement with use an impulse line or diaphragm seals up to 100°C – version for 413bar static pressure CAUTION: the medium must not be allowed to freeze in the impulse line or close to the process connection of the transmitter

#### Electrical parameters

<b>Power supply</b>	7,5...55 VDC (Ex ia 7,5...28 VDC)
<b>Output signal</b>	4...20 mA + HART
<b>Load resistance</b>	$R[\Omega] \leq \frac{U_{sup}[V] - 7,5V}{0,0225A}$
<b>Resistance required for communication</b>	min. 240 $\Omega$

#### Accuracy depending on the set range



$\rho_0$  – error for range 30...100% FSO  
 $\rho_1$  – error for range 10% FSO  
 $\rho_1 = 2 \times \rho_0$   
 Numerical error values are given in the technical data under metrological parameters

## Ordering procedure

Model	Code	Description	
PRE-28.SMART		Smart differential pressure transmitter	
Versions, certificates  more than one option is available	/Exia.....	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb II 1D Ex ia IIIC T105°C Da I M1 Ex ia I Ma</p> <p><b>IECEx</b> Ex ia IIC T4/T5/T6 Ga/Gb Ex ia IIIC T105°C Da Ex ia I Ma</p> </div> <div style="width: 45%;"> <p>For PM12, PKD version: <b>IECEx</b> II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb Ex ia IIC T4/T5/T6 Ga/Gb</p> <p>For ALW, ALM version: <b>IECEx</b> II 1/2G Ex ia IIC T4 Ga/Gb II 1D Ex ia IIIC T105°C Da Ex ia IIC T4 Ga/Gb Ex ia IIIC T105°C Da</p> </div> </div>	
	/Exia (IECEx).....		
	/MR.....		
	/Tlen.....		
	/320 bar.....	Marine certificate – DNV, BV (not available in ALW and ALM version) For oxygen service (sensor filled with Fluorolube fluid) Static pressure 320 bar, only for C process connection	
	/413 bar.....	Static pressure 413 bar, only for C process connection	
Nominal measuring range  *) non-standard ranges available on request	/0+70 bar.....	Range	Min. set range
	/0+16 bar.....	0+70 bar (0+7000 kPa)	7bar (700 kPa)
	/0+2,5 bar.....	0+16 bar (0+1600 kPa)	1,6bar (160 kPa)
	/0+1 bar.....	0+2,5 bar (0+250 kPa)	0,2bar (20 kPa)
	/0+0,25 bar.....	0+1 bar (0+100 kPa)	50mbar (5 kPa)
	/-0,5+0,5 bar.....	0+0,25 bar (0+25 kPa)	10mbar (1 kPa)
	/-0,1+0,1 bar.....	-0,5+0,5 bar (50+50 kPa)	0,1bar (10 kPa)
	/-5+70mbar.....	-0,1+0,1 bar (-10+10 kPa)	10mbar (1 kPa)
	/-	-5+70 mbar (0,5+7 kPa)	4mbar (0,4 kPa)
	/25+25mbar.....	-25+25 mbar (-2,5+2,5 kPa)	2 mbar (0,2 kPa)
Measuring set range	/...+... [required units]	Calibrated range in relation to 4mA and 20mA output	
Casing, electrical connection	/PD.....	Housing IP65 with DIN EN 175301-803 connector	
	/PZ.....	304SS housing, IP66, packing gland M20x1,5	
	/PZ316.....	316SS housing, IP66, packing gland M20x1,5	
	/PM12.....	304SS housing, IP67 with thread M12x1 and connector with cable (3 m in standard)	
	/SG.....	316LSS housing, IP68, cable electrical connection (3 m of cable in standard)	
	/SGM.....	316LSS housing, IP68, cable electrical connection (3 m of cable in standard)	
Process connections	/ALW *.....	Aluminum housing, local display, IP65, DIN43650 connector	
	/ALM *.....	Aluminum housing, local display, IP65, DIN43650 connector	
	/C.....	Thread 1/4NPT F on the cover flanges cover flanges material SS316. Allows mounting with a valve manifold. Process connection of cover flange: M10 (option /C(7/16) - 7/16"UNF acc. to IEC 61518)	
	/CR.....	C-type process connection rotated 90°	
	/P.....	Thread M20x1,5 (male)	
Material of diaphragms (refers only to C, CR, P, PN process connection)	/PN.....	Thread 1/4"NPT (female)	
	/code of diaphragm seal....	Diaphragm seal (see chapter of diaphragm seals) mounted on Hi side of transmitter, Lo side 1/4NPT Female	
	(without marking).....	Diaphragms material SS316L	
Gasket (refers only to C, CR process connection)	/H).....	Diaphragms material Hastelloy C276	
	/NBR.....	(all wetted parts in Hastelloy C276 on request)	
	/PTFE.....	Gold plated diaphragms	
Accessories	(without marking).....	FPM Viton	
	/C-2".....	NBR	
	/C-2"(SS).....	PTFE	
	/C-2"B.....	Mounting bracket for 2" pipe (to C process conn.), mat. zined steel	
	/C-2"B(SS).....	Mounting bracket for 2" pipe (to C process conn.), mat. Stainless Steel	
	/F125.....	Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. zined steel	
	/RedSpaw P.....	Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. Stainless Steel	
/RedSpaw C.....	Mounting bracket for 1" pipe (to P process conn.), mat. Stainless Steel		
Other specification	/Red d/P 1/2".....	Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM(SO) or SS316(S). Only process connection P type	
	/.....	Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM. Only process connection C type.	
		Adapter for differential pressure transmitters with C type process connection, output thread 1/2NPT F. Material SS316L	
		Description of required parameters	

\* - pushbuttons allows to change display settings only