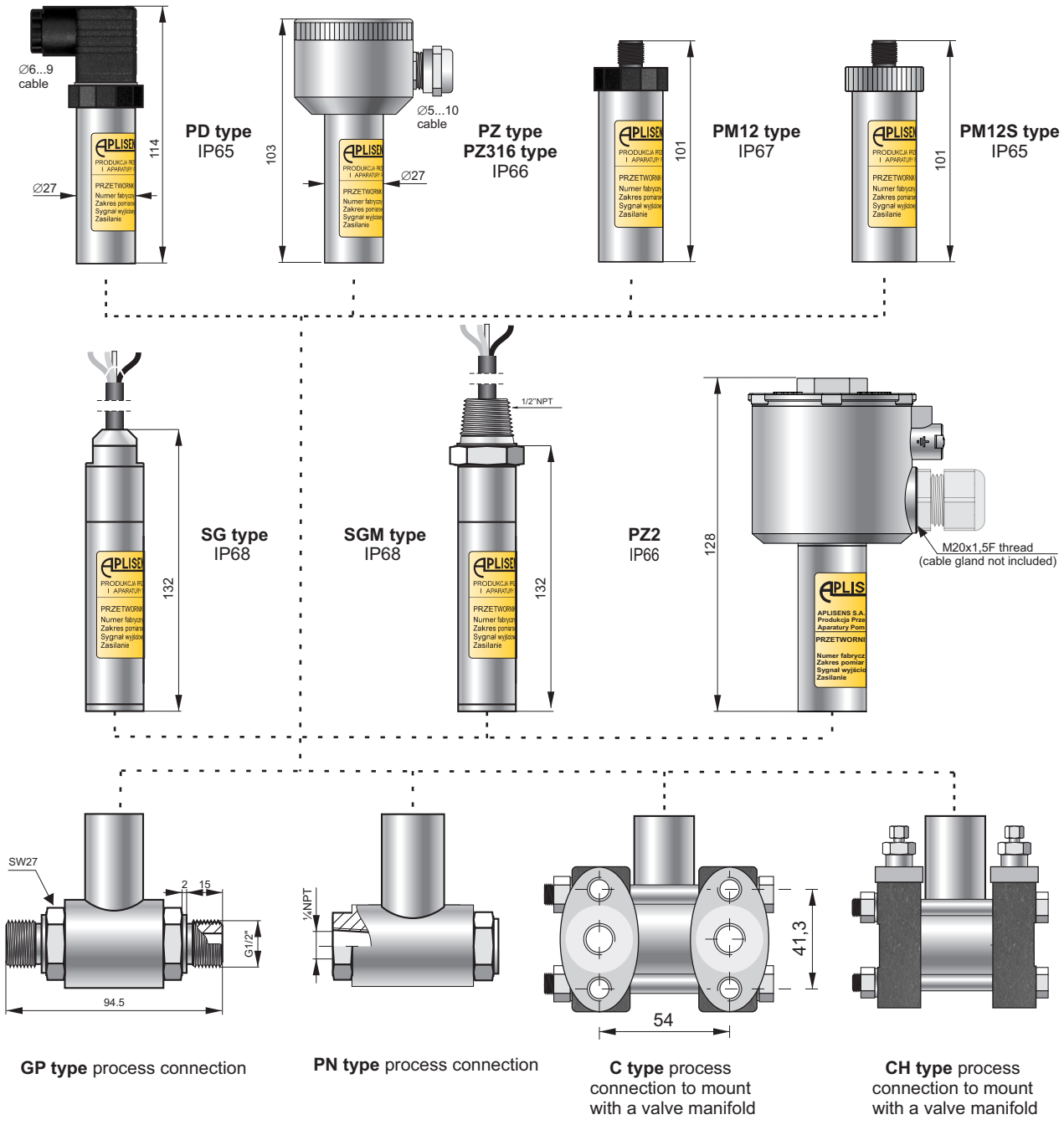
SMART DIFFERENTIAL PRESSURE TRANSMITTER PRE-28.SMART

- ✓ **4…20 mA output signal + HART protocol**
- ✓ **Intrinsic safety certificate (ATEX, IECEx)**
- ✓ **Explosion proof certificate (ATEX, IECEx)**
- ✓ **Static pressure limit up to 413 bar**
- ✓ **Accuracy 0,1%**
- ✓ **Wetted parts material 316L**
- ✓ **Marine certificate DNV, BV**



GP type process connection

PN type process connection

C type process connection to mount with a valve manifold

CH type process connection to mount with a valve manifold

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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	C-type: 250 / 320 / 413 bar GP-type 40 bar (for range no. 1: 70bar)
2	0...16 bar	(0...1,6 MPa)	1,6 bar	(160 kPa)	10:1	
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	

Technical data

Metrological parameters

Accuracy ≤ ±0,1% of calibrated range

Long-term stability (for the basic range) ≤ accuracy for 3 years

Thermal error < ±0,08% (FSO) / 10°C
max. ±0,3% (FSO) in the whole compensation range

Thermal compensation range -25…80°C

Zero shift error for static pressure
0,01% (FSO) / 10 bar for ranges no. 3, 4, 5, 6, 7
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.

Additional electronic damping 0…30 s

Error due to supply voltage changes 0,002% (FSO) / V

Electrical parameters

Power supply
7,5...55 VDC (Ex ia 7,5...30 VDC)

Output signal 4...20 mA + HART

Load resistance $R[\Omega] \leq \frac{U_{sup}[V] - 7{,}5V}{0{,}0225A}$

Resistance required for communication min. 240 Ω

Materials

Wetted parts SS316L

Diaphragms SS316L, Au

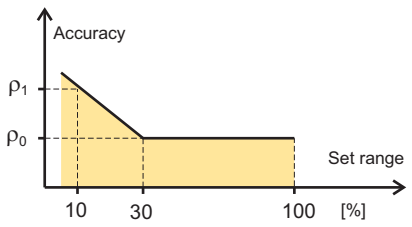
Casing: SS304
Optional: SS316

Operating conditions

Operating temperature range (ambient temp.) -25...85°C
Exia version -25…80°C

Medium temperature range -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

Accuracy depending on the set range



ρ_0 – error for range 30...100% FSO
ρ_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	/Exia	Ex 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 For PM12, PKD version: Ex II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb IECEx Ex ia IIC T4/T5/T6 Ga/Gb IECEx Ex ia IIC T4/T5/T6 Ga/Gb Ex ia IIIC T105°C Da Ex ia I Ma
	/Exd	Ex II 2G Ex db IIC T6/T5/T4 Gb (only SGM or FL casing) II 2D Ex tb IIIC T85°C/T100°C/T120°C Db (only SGM or FL casing) I M2 Ex db I Mb (only for PZ2 casing) IECEx Ex db IIC T6/T5/T4 Gb (only SGM or FL casing) Ex tb IIIC T85°C/T100°C/T120°C D (only SGM or FL casing) Ex db I Mb (only for PZ2 casing)
	/MR	Marine certificate – DNV, BV
	/Tlen	For oxygen service (sensor filled with Fluorolube fluid)
more than one option is available	/320 bar	Static pressure 320 bar, only for C process connection
	/413 bar	Static pressure 413 bar, only for C process connection
	/NACE	NACE MR-01-75 certificate (process connections: C)

Nominal measuring range		Range	Min. set range
*) non-standard ranges available on request	/0÷70 bar	0÷70 bar (0÷7000 kPa)	7 bar (700 kPa)
	/0÷16 bar	0÷16 bar (0÷1600 kPa)	1,6 bar (160 kPa)
	/0÷2,5 bar	0÷2,5 bar (0÷250 kP)	0,2 bar (20 kPa)
	/0÷1 bar	0÷1 bar (0÷100 kPa)	50 mbar (5 kPa)
	/0÷0,25 bar	0÷0,25 bar (0÷25 kPa)	10 mbar (1 kPa)
	/-0,5÷0,5 bar	-0,5÷0,5 bar (50÷50 kPa)	0,1 bar (10 kPa)
	/-0,1÷0,1 bar	-0,1÷0,1 bar (-10÷10 kPa)	10 mbar (1 kPa)
	/-5÷70 mbar	-5÷70 mbar (0,5÷7 kPa)	4 mbar (0,4 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
	/PM12S	304SS housing, IP67 with thread M12x1 and connector with cable, stainless steel version
	/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)
	/FL (1/2"NPTM)	316LSS housing, flying leads (2 m of flying leads in standard) (only for Exd version)
	/PZ2	304SS housing, IP66, electrical connection M20x1,5F (only for Exd version)
Process connections	/C	Thread 1/4NPT F on the cover flanges, cover flanges material SS316L, diaphragm material SS316L. Allows mounting with a valve manifold. Process connection of cover flange: M10 (option /C(7/16) - 7/16"UNF acc. to IEC 61518
	/C(316/Au)	Thread 1/4NPT F on the cover flanges, cover flanges material SS316L, diaphragm material Au. Allows mounting with a valve manifold. Process connection of cover flange: M10 (option /C(7/16) - 7/16"UNF acc. to IEC 61518)
	/CH	C-type process connection rotated 90°
	/GP	Thread G1/2" (male), wetted parts material: SS316L
	/PN	Thread 1/4"NPT (female), wetted parts material: SS316L
	/code of diaphragm seal	Diaphragm seal (see chapter of diaphragm seals) mounted on Hi side of transmitter, Lo side 1/4NPT Female
Gasket (refers only to C, CH process connection)	(without marking)	FPM Viton
	/NBR	NBR
	/PTFE	PTFE
Accessories	/C-2"	Mounting bracket for 2" pipe (to C process conn.), mat. zinced steel
	/C-2"(SS)	Mounting bracket for 2" pipe (to C process conn.), mat. ss304
	/C-2"(SS316)	Mounting bracket for 2" pipe (to C process conn.), mat. ss316
	/C-2"B	Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. zinced steel
	/C-2"B(SS)	Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. ss304
	/C-2"B(SS316)	Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. ss316
	/FI25	Mounting bracket for 1" pipe (to P process conn.), mat. Stainless Steel
	/RedSpaw GP	Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM(SO) or SS316(S). Only process connection GP type
	/RedSpaw C	Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM. Only process connection C type.
	/Red d/P 1/2''	Adapter for differential pressure transmitters with C type process connection, output thread 1/2NPT F. Material SS316L
Other specification	/	Description of required parameters

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