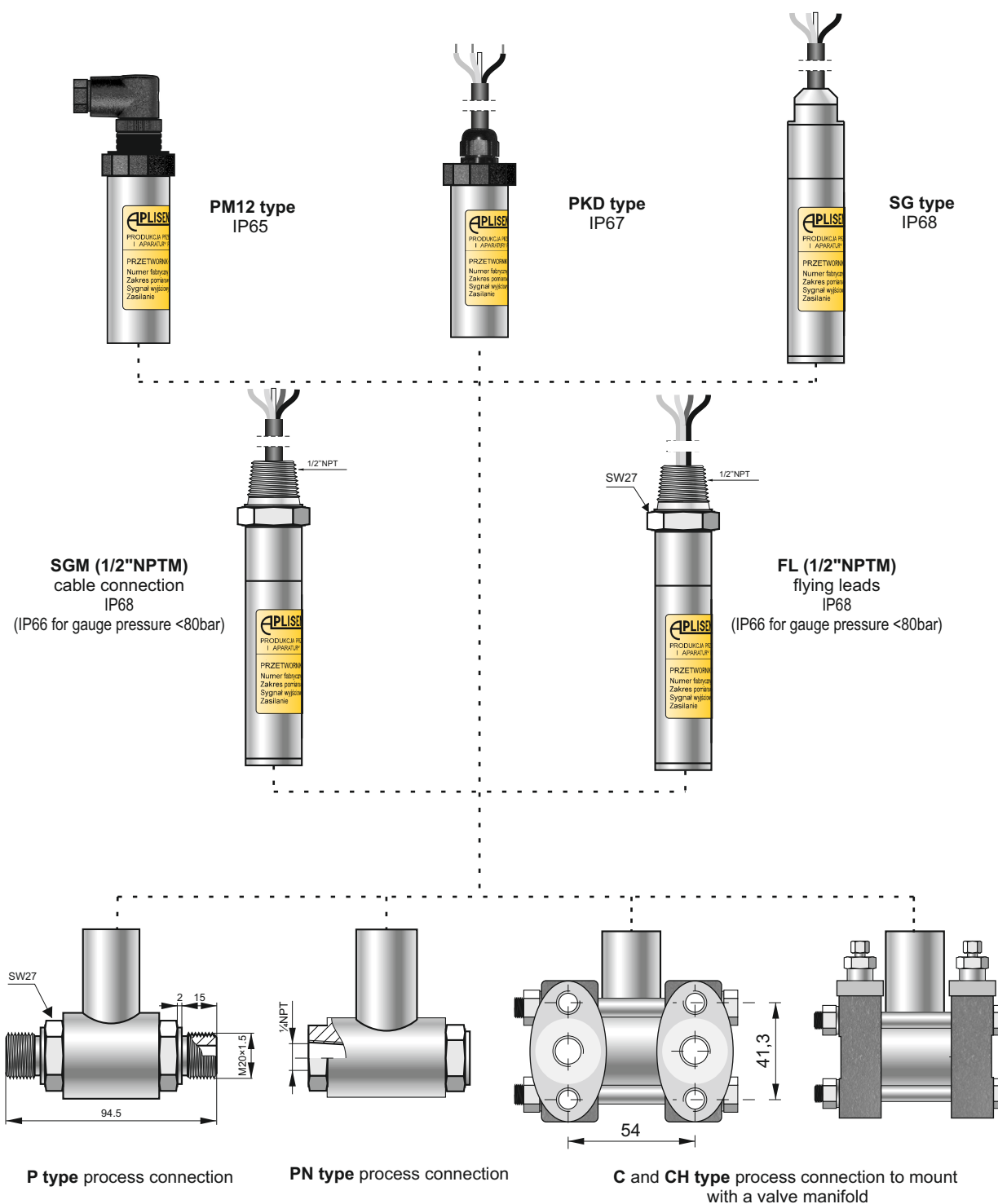


# DIFFERENTIAL PRESSURE TRANSMITTER PRE-28.MODBUS

- ✓ Digital communication protocol Modbus RTU
- ✓ Intrinsic safety and explosion proof certificates (ATEX, IECEx)
- ✓ Accuracy 0.1%
- ✓ Static pressure limit up to 413 bar
- ✓ Marine certificate DNV, BV



## Application

The transmitters PRE-28.Modbus have two operating modes, configuration mode and Modbus mode. The configuration mode is used for changing settings and detailed diagnostics of the transmitter. In this mode you can also activate a current loop compatible with a 4-20 mA current output.

## 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<br>P-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         |                                                                       |
| 9   | -25...25 mbar (-2,5...2,5 kPa) | 2 mbar (0,2 kPa)  | 25:1         | C-type: 20 bar                                                        |

## Technical data

### Metrological parameters

|                                                     |                                                                                                                                                                                                                                               |
|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Accuracy</b>                                     | $\leq \pm 0,1\%$ of calibrated range                                                                                                                                                                                                          |
| <b>Long-term stability</b><br>(for the basic range) | $\leq$ accuracy for 3 years                                                                                                                                                                                                                   |
| <b>Thermal error</b>                                | $< \pm 0,08\%$ (FSO) / $10^\circ\text{C}$<br>max. $\pm 0,3\%$ (FSO) in the whole compensation range                                                                                                                                           |
| <b>Thermal compensation range</b>                   | $-25...80^\circ\text{C}$                                                                                                                                                                                                                      |
| <b>Zero shift error for static pressure</b>         | 0,01% (FSO) / 10 bar for ranges no. 3, 4, 5, 6, 7, 9<br>0,03% (FSO) / 10 bar for range no. 8<br>0,06% (FSO) / 10 bar for ranges no. 1, 2<br><small>Zeroing the transmitter in conditions of static pressure can eliminate this error.</small> |
| <b>Error due to supply voltage changes</b>          | 0.002% (FSO) / V                                                                                                                                                                                                                              |

### Materials

|                                     |                         |
|-------------------------------------|-------------------------|
| <b>Wetted parts and diaphragms:</b> | 316Lss                  |
| <b>Casing:</b>                      | 304ss (optional: 316ss) |

### Electrical parameters

|                                                                                  |                                                                                                   |
|----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <b>Power supply</b>                                                              | 4...28 V DC<br>Exia version: 4...10 V DC<br>in 4...20mA mode (only non Exia version): 5...28 V DC |
| <b>Transmission range</b>                                                        | 1200 m                                                                                            |
| <b>Output</b>                                                                    | MODBUS RTU or 4...20 mA                                                                           |
| <b>Address space</b>                                                             | 1...247 devices address                                                                           |
| <b>Transmission speed</b>                                                        | 1200, 2400, 4800, 9600, 19200, 28800, 38400, 57600, 115200 bps                                    |
| <b>Parity transmission</b>                                                       | no parity, odd, even                                                                              |
| <b>Frame transmission</b>                                                        | 10...11bits (1, 2 bit-stop)                                                                       |
| <i>* more information about electrical parameters available in user's manual</i> |                                                                                                   |

## Ordering procedure

| Model                                            | Code                                                                                                                                                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRE-28.Modbus                                    |                                                                                                                                                                              | Smart differential pressure transmitter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Versions, certificates                           | /Exia.....<br><br>/MR.....<br>/Tlen.....<br>/320 bar.....<br>/413 bar.....<br>/NACE.....                                                                                     | II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb<br>II 1D Ex ia IIIC T105°C Da<br>I M1 Ex ia I Ma<br><br>Ex ia IIC T4/T5/T6 Ga/Gb<br>Ex ia IIIC T105°C Da<br>Ex ia I Ma<br><br>For PM12, PKD version:<br>II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb<br>Ex ia IIC T4/T5/T6 Ga/Gb<br>For ALW, ALM version:<br>II 1/2G Ex ia IIC T4 Ga/Gb<br>II 1D Ex ia IIIC T105°C Da<br>Ex ia IIC T4 Ga/Gb<br>Ex ia IIIC T105°C Da                                                                                                                                                                                                                                                                                                                                                   |
| more than one option is available                |                                                                                                                                                                              | Marine certificate – DNV, BV (not available in ALW and ALM version)<br>For oxygen service (sensor filled with Fluorolube fluid)<br>Static pressure 320 bar, only for C process connection<br>Static pressure 413 bar, only for C process connection<br>NACE MR-01-75 certificate (process connections: C)                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Nominal measuring range                          | /0+70 bar.....<br>/0+16 bar.....<br>/0+2,5 bar.....<br>/0+1 bar.....<br>/0+0,25 bar.....<br>/-0,5+0,5 bar.....<br>/-0,1+0,1 bar.....<br>/-5+70 mbar.....<br>/-25+25mbar..... | Range<br>0+70 bar (0+7000 kPa)<br>0+16 bar (0+1600 kPa)<br>0+2,5 bar (0+250 kPa)<br>0+1 bar (0+100 kPa)<br>0+0,25 bar (0+25 kPa)<br>-0,5+0,5 bar (50+50 kPa)<br>-0,1+0,1 bar (-10+10 kPa)<br>-5+70 mbar (0,5+7 kPa)<br>-25+25 mbar (-2,5+2,5 kPa)<br><br>Min. set range<br>7 bar (700 kPa)<br>1,6 bar (160 kPa)<br>0,2 bar (20 kPa)<br>50 mbar (5 kPa)<br>10 mbar (1 kPa)<br>0,1 bar (10 kPa)<br>10 mbar (1 kPa)<br>4 mbar (0,4 kPa)<br>2 mbar (0,2 kPa)                                                                                                                                                                                                                                                                                   |
| Measuring set range                              | /...+... [required units]                                                                                                                                                    | Calibrated range in relation to 4mA and 20mA output                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Casing, electrical connection                    | /PD.....<br>/PZ.....<br>/PZ316.....<br>/PM12.....<br>/SG.....<br>/SGM.....                                                                                                   | Housing IP65 with DIN EN 175301-803 connector<br>304SS housing, IP66, packing gland M20x1,5<br>316SS housing, IP66, packing gland M20x1,5<br>304SS housing, IP67 with thread M12x1 and connector with cable (3 m in standard)<br>316LSS housing, IP68, cable electrical connection (3 m of cable in standard)<br>316LSS housing, IP68, cable electrical connection (3 m of cable in standard)                                                                                                                                                                                                                                                                                                                                              |
| Process connections                              | /C.....<br><br>/CH.....<br>/P.....<br>/PN.....<br>/code of diaphragm seal....                                                                                                | 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), wetted parts material: SS316L<br>C-type process connection rotated 90°<br><br>Thread M20x1,5 (male), wetted parts material: SS316L<br>Thread 1/4"NPT (female), wetted parts material: SS316L<br>Diaphragm seal (see chapter of diaphragm seals) mounted on Hi side of transmitter, Lo side 1/4NPT Female                                                                                                                                                                                                                                 |
| Gasket (refers only to C, CR process connection) | (without marking).....<br>/NBR.....<br>/PTFE.....                                                                                                                            | FPM Viton<br>NBR<br>PTFE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Accessories                                      | /C-2".....<br>/C-2"(SS).....<br>/C-2"B.....<br>/C-2"B(SS).....<br>/FI25.....<br>/RedSpaw P.....<br><br>/RedSpaw C.....<br><br>/Red d/P 1/2".....                             | Mounting bracket for 2" pipe (to C process conn.), mat. zincd steel<br>Mounting bracket for 2" pipe (to C process conn.), mat. Stainless Steel<br>Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. zincd steel<br>Mounting bracket for 2" pipe (to C(7/16) process conn.), mat. Stainless Steel<br>Mounting bracket for 1" pipe (to P process conn.), mat. Stainless Steel<br>Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM(SO) or SS316(S). Only process connection P type<br>Connector to weld impulse pipes dia. 12 and 14 mm, material 15HM. Only process connection C type.<br>Adapter for differential pressure transmitters with C type process connection, output thread 1/2NPT F. Material SS316L |
| Other specification                              | /.....                                                                                                                                                                       | Description of required parameters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |