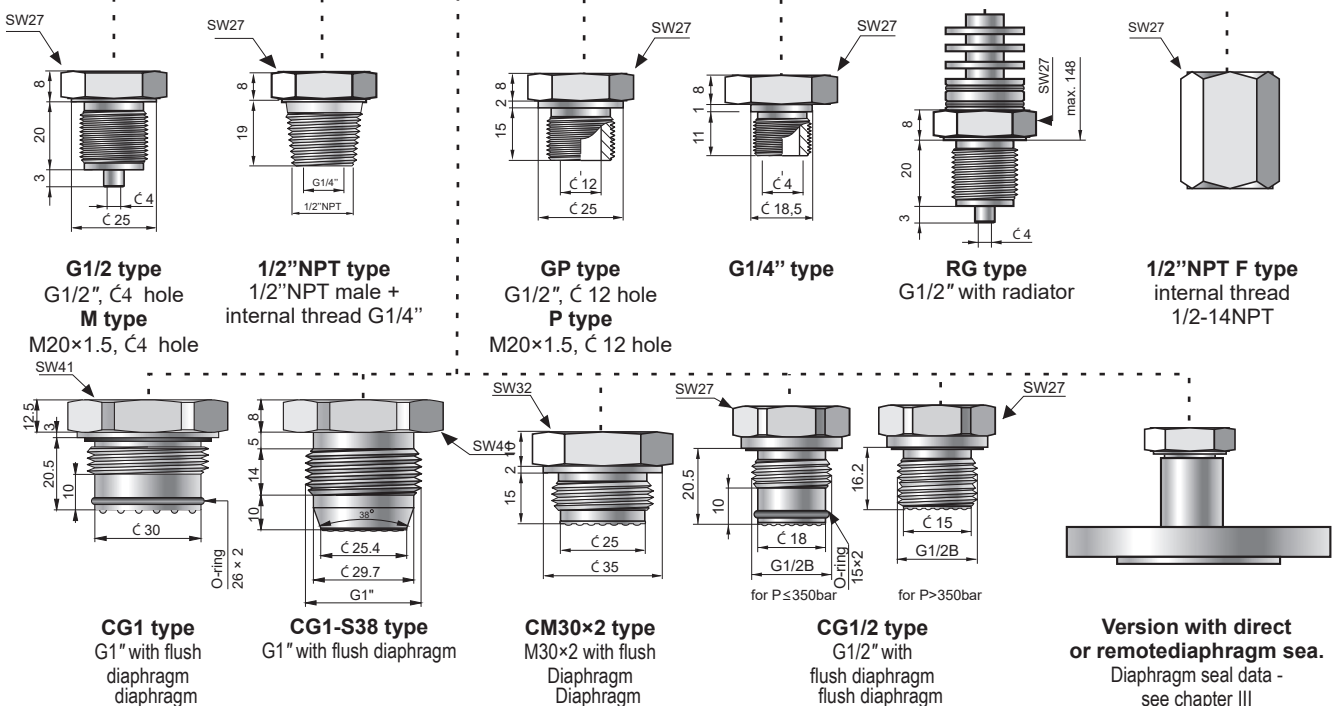
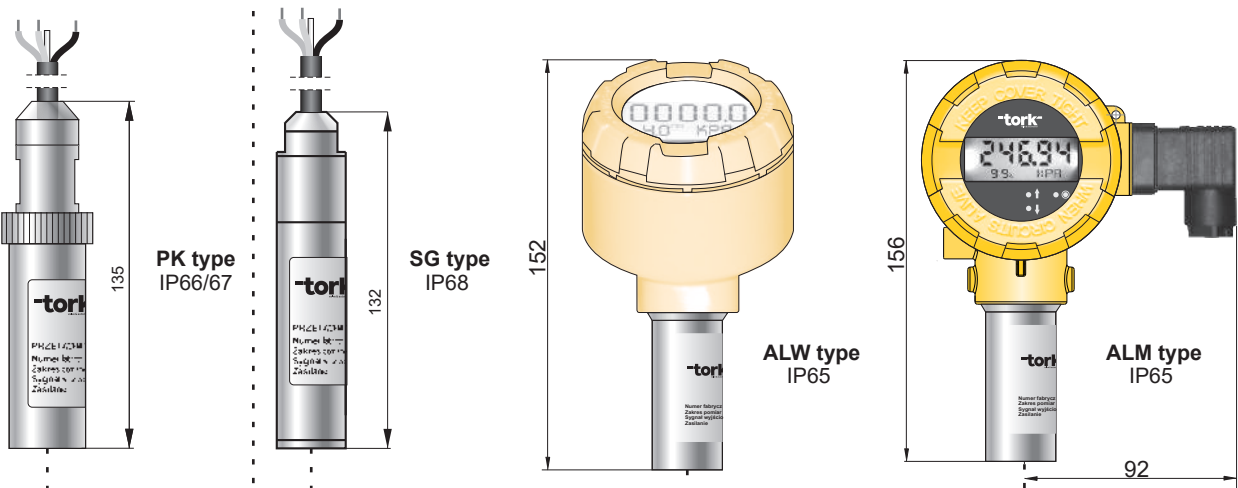
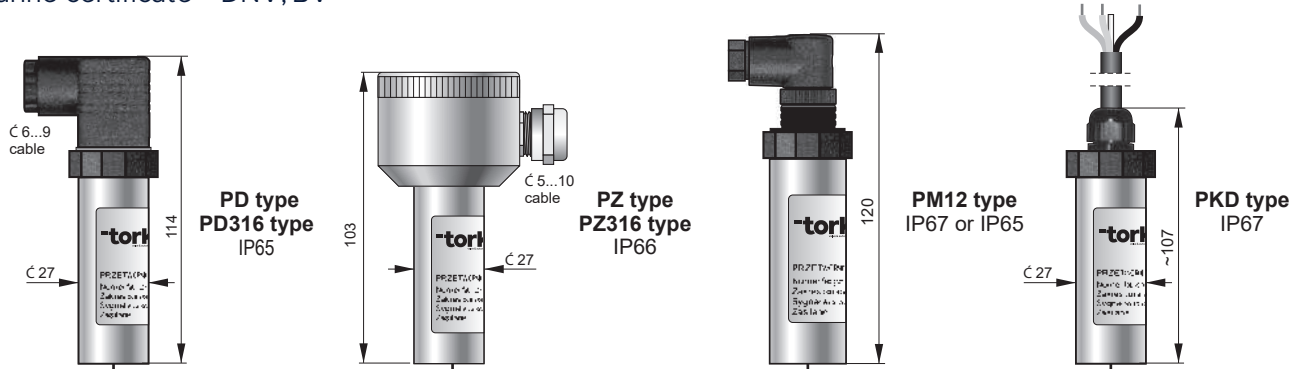
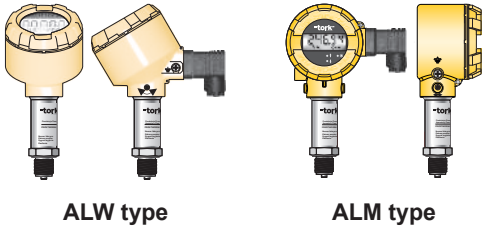


PRESSURE TRANSMITTER PCE-28

- ✓ Any range from 0...25 mbar up to 0...10 00 bar
- ✓ 4 ÷ 20 mA two-wire or 0 ÷ 10 V output
- ✓ Intrinsic safety certificate (ATEX, IECEx)
- ✓ Marine certificate – DNV, BV
- ✓ Gold plated diaphragm
- ✓ SIL 1 certificate
- ✓ Version with local display



ALW and ALM type



Aluminum casing with programable local display. The design of the casing enables the use of a local display, rotation of the display, rotation of the casing by 0–345° relative to the sensor. Electrical connection DIN EN 175301-803, IP65 (special version with cable electrical connection and IP67).

Display with backlight allows to read:
 - measured pressure in user units or % of measuring range
 - current in output loop in mA

Application and construction

The PCE-28 pressure transmitter is applicable to the measurement of the pressure, underpressure and absolute pressure of gases, vapours and liquids. The active sensing element is a piezoresistant silicon sensor separated from the medium by a diaphragm and by specially selected type of manometric liquid. The electronics is placed in a casing with a degree of protection from IP 65 to IP 68, depending on the type of electrical connection applied.

Calibration

Potentiometers can be used to shift the zero position and the range by up to ±10%, without altering the settings (not possible with ALM and SG casing).

Installation

The transmitter is not heavy, so it can be installed directly on the installation. When the pressure of steam or other hot media is measured, a siphon or impulse line should be used. The needle valve placed upstream the transmitter simplifies installation process and enables the zero point adjustment or the transmitter replacement.

When the special process connections are required for the measurement of levels and pressures (e.g. at food and chemical industries), the transmitter is provided with an TORK diaphragm seal. Installing accessories and a full scope of diaphragm seals are described in detail in the further part of the catalogue.

Measurements under explosion hazard

ATEX Intrinsic safety version is available for taking measurements in zones under explosion hazard. The installation of the transmitter in a zone under explosion hazard requires the use of a Ex power supply. We recommend the use of the TORK ZS-30/1Ex power supply and separator.

Technical data

Any measuring range




0...25 mbar ÷ 0...1000 bar (over pressure, under pressure); 400 mbar ÷ 80 bar (absolute pressure)
 Measurement of lower pressure ranges, possible using transmitter PRE-50G with GP process connection.

	Measuring range				
	25 mbar	100 mbar	400 mbar	0...1 bar ÷ 160bar	0...160 bar ÷ 1000bar
Overpressure Limit (repeated, without hysteresis)	1 bar	1 bar	2,5 bar	4 x range	2 x range; max. 1200 bar
Damaging Overpressure	2 bar	2 bar	5 bar	8 x range; max. 2000 bar	
Accuracy	0,6%	0,3%	0,2% (0,16% - special version)		
Long term stability	0,6% / year	0,2% / year	0,1% / year		
Thermal error	Typically 0,5% / 10°C Max 0,6% / 10°C	Typically 0,3% / 10°C Max 0,4% / 10°C		Typically 0,2% / 10°C Max 0,3% / 10°C	

Hysteresis, repeatability 0,05%
Response time < 120 ms
 version TR: < 30 ms
Thermal compensation range -10...80°C
Operating temperature range (ambient temp.) -40...80°C
Medium temperature range -40...130°C
 over 130°C – measurement with use an impulse line or diaphragm seals
 CAUTION: the medium must not be allowed to freeze in the impulse line or close to the process connection of the transmitter

Output signal 4...20 mA, two wire transmission
 0..10V
Material of wetted parts 316Lss, Hastelloy C 276, Au
Material of casing 304ss, 316Lss
Power supply output 4..20mA
 8...36 V DC (Ex 9...28 V DC)
 version TR, version Safety: 10,5...36 V DC (Ex 12...28 V DC)
 ALW and ALM version: (11...36V DC)
 output 0..10V
 13...30 VDC
Error due to supply voltage changes 0,005% / V
Load resistance $R[\Omega] \leq \frac{U_{sup}[V] - 8V}{0,02A}$

Ordering procedure

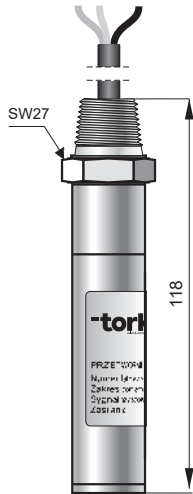
Model	Code	Description
PCE-28		Pressure transmitter
Versions, certificates	/Exia.....	 II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb II 1D Ex ia IIIC T110°C Da I M1 Ex ia I Ma
	/MR.....	IECEX Ex ia IIC T4/T5/T6 Ga/Gb Ex ia IIIC T110°C Da Ex ia I Ma For PM12, PKD version:  II 1/2G Ex ia IIC T4/T5/T6 Ga/Gb IECEX Ex ia IIC T4/T5/T6 Ga/Gb For ALW, ALM version:  II 1/2G Ex ia IIC T4 Ga/Gb II 1D Ex ia IIIC T110°C Da IECEX Ex ia IIC T4 Ga/Gb Ex ia IIIC T110°C Da
more than one option is available	/Tlen.....	Marine certificate – DNV, BV (not available in ALW, ALM version)
	/H.....	For oxygen service (sensor filled with Fluorolube fluid), only G1/2" connection version with high overload capacity and integrated circuit offering excess voltage protection
	/PED.....	PED, category I
	/0,16%.....	Accuracy <0,16% (available for ranges >400mbar)
	/Safety.....	SIL 1 certificate; only 4...20mA output
	/TR.....	Response time <30ms; only 4...20mA output, only PD, PZ, PM12, PK version.
	/NACE.....	NACE MR-01-75 certificate (process connections: M, G1/2", P, GP and 1/2"NPTM)
Measuring range	/...+... [required units]	Measuring range
Analogue output signal	(without marking)	4...20mA / power supply 8...36VDC (Ex 9...28VDC)
	/0÷10V.....	0...10VDC /power supply 13...30VDC
Casing, electrical connection	/PD.....	304SS housing, IP65, DIN EN 175301-803 connector
	/PD316.....	316SS housing, IP65, DIN EN 175301-803 connector
	/PZ.....	304SS housing, IP66, packing gland M20x1,5
	/PZ316.....	316SS housing, IP66, packing gland M20x1,5
	/PM12 (IP67).....	304SS housing, IP67 with thread M12x1 and connector with cable (3 m in standard)
	/PM12 (IP65).....	304SS housing, IP65 with thread M12x1 (without cable)
	/PK.....	304SS housing, IP66/67, cable electrical connection
	/PKD.....	304SS housing, IP67, cable electrical connection (3 m of cable in standard)
	/SG.....	316LSS housing, IP68, cable electrical connection (3 m of cable in standard)
Process connections	/SGM.....	316LSS housing, IP68, cable electrical connection (3 m of cable in standard)
	/ALW *.....	Aluminum housing, local display, IP65, DIN43650 connector
	/ALM *.....	Aluminum housing, local display, IP65, DIN43650 connector
	/M.....	Thread M20x1,5 (male) with C 4 hole, wetted parts SS316L
	/G1/2.....	Thread G1/2" (male) with C 4 hole, wetted parts SS316L
	/G1/2(Au).....	Thread G1/2" (male) with C 4 hole, gold plated diaphragm (Pressure limits: min. 10bar / max. 1000bar)
	/G1/4.....	Thread G1/4" (male), wetted parts SS316L (Pressure limits: max. 400bar)
	/P.....	Thread M20x1,5 (male) with C 12 hole, wetted parts SS316L
	/GP.....	Thread G1/2" (male) with C 12 hole, wetted parts SS316L
/GP(Hastelloy).....	Thread G1/2" (male) with C 12 hole, wetted parts Hastelloy C 276	
/CM30x2.....	Thread M30x2 with flush diaphragm, wetted parts SS316L (Pressure limits: min. 0,1bar / max. 70bar)	
/CM30x2(Hastelloy).....	Thread M30x2 with flush diaphragm, wetted parts Hastelloy C 276 (Pressure limits: min. 0,1bar / max. 70bar)	
/CG1".....	Thread G1" with flush diaphragm, wetted parts SS316L (Pressure limits: min. 0,1bar / max. 70bar)	
/CG1"(Hastelloy).....	Thread G1" with flush diaphragm, wetted parts Hastelloy C 276 (Pressure limits: min. 0,1bar / max. 70bar)	
/CG1"-S38.....	Thread G1" with flush diaphragm, wetted parts SS316L (Pressure limits: min. 0,1bar / max. 1bar)	
/CG1/2".....	Thread G1/2" with flush diaphragm, wetted parts SS316L (Pressure limits: min. 2,5bar)	
/RG.....	Thread G1/2" with radiator, wetted parts SS316L (Pressure limits: min. 160mbar / max. 40bar, max. temperature up to 170°C)	
/1/2"NPTM.....	Thread 1/2"NPT Male, G1/4" Female, wetted parts SS316L (Pressure limits: " NPT Male max. 690bar, G1/4" Female max. 1000bar)	
/1/2"NPTF.....	Thread M20x1,5 with adapter to 1/2"NPT Female, wetted parts SS316L (Pressure limits: max. 690bar)	
/code of diaphragm seal...	Diaphragm seal (see chapter of diaphragm seals)	
Accessories	/MT.....	Stainless Steel Tag plate mounted on wire
Other specification	/.....	Description of required parameters (e.g. non-standard pr. connection G3/4", M22x1,5)

* - pushbuttons allows to change display settings only, version ALM without Zero and Span potentiometers

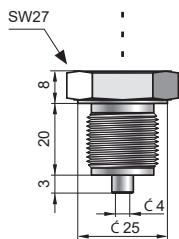
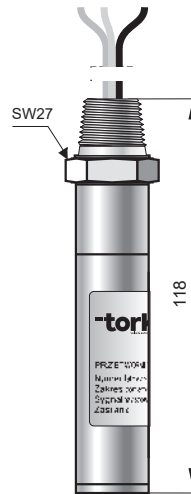
**EXPLOSION PROOF
PRESSURE TRANSMITTER
PCE-28/EXD**

- ✓ Any range from 0...25 mbar up to 0...1380 bar
- ✓ 4 ÷ 20 mA two-wire output
- ✓ Explosion proof certificate (ATEX, IECEx)
- ✓ Marine certificate – DNV, BV
- ✓ SIL 1 certificate
- ✓ NACE compatibility

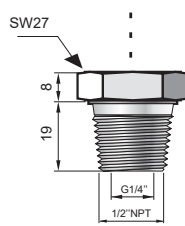
SGM (1/2"NPTM)
cable connection
IP68
(IP66 for gauge pressure <80bar)



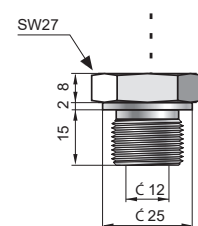
FL (1/2"NPTM)
flying leads
IP68
(IP66 for gauge pressure <80bar)



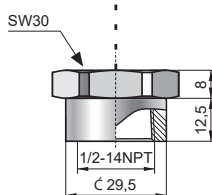
G1/2 type
G1/2", C4 hole



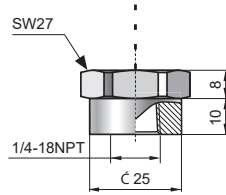
1/2"NPT type
1/2"NPT male +
internal thread G1/4"



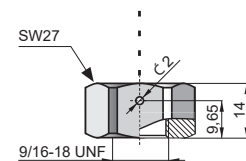
GP type
G1/2", C12 hole



1/2NPTF type
1/2-14 NPT female



1/4NPTF type
1/4-18 NPT female



Autoclave
type F-250-C
(9/16-18 UNF)

Application and construction

The PCE-28 pressure transmitter is applicable to the measurement of the pressure, underpressure and absolute pressure of gases, vapours and liquids. The active sensing element is a piezoresistant silicon sensor separated from the medium by a diaphragm and by specially selected type of manometric liquid. The electronics is placed in a casing with a degree of protection from IP 66 to IP 68.

Measurements under explosion hazard

ATEX Explosion Proof version is available for taking measurements in zones under explosion hazard.

Technical data

Any measuring range 0...25 mbar ÷ 0...1380 bar (over pressure, under pressure); 400 mbar ÷ 80 bar (absolute pressure)

	Measuring range				
	25 mbar	100 mbar	400 mbar	0...1 bar ÷ 160bar	0...160 bar ÷ 1380bar
Overpressure Limit (repeated, without hysteresis)	1 bar	1 bar	2,5 bar	4 x range	2 x range; max. 1600 bar
Damaging Overpressure	2 bar	2 bar	5 bar	8 x range; max. 2000 bar	
Accuracy	0,6%	0,3%	0,2% (0,16% - special version)		
Long term stability	0,6% / year	0,2% / year	0,1% / year		
Thermal error	Typically 0,5% / 10°C Max 0,6% / 10°C	Typically 0,3% / 10°C Max 0,4% / 10°C	Typically 0,2% / 10°C Max 0,3% / 10°C		


Hysteresis, repeatability	0,05%
Response time	< 120 ms
Thermal compensation range	-10...80°C
Operating temperature range (ambient temp.)	
FL electrical connection	-40...80°C*
SGM electrical connection	-40...65°C*
* more information available in user's manual and certificate	
Medium temperature range	-40...130°C

Output signal	4...20 mA, two wire transmission
Material of wetted parts	316Lss, Hastelloy C 276
Material of casing	304ss, 316Lss
Power supply	8...30 V DC Version Safety: 10,5...36 V DC
Error due to supply voltage changes	0,005% / V
Load resistance	$R[\Omega] \leq \frac{U_{sup}[V] - 8V}{0,02A}$

over 130°C – measurement with use an impulse line

CAUTION: the medium must not be allowed to freeze in the impulse line or close to the process connection of the transmitter

Ordering procedure

Model	Code	Description
PCE-28/Exd	/Exd.....	Pressure transmitter  II 2G Ex db IIC T6/T5/T4 Gb II 2D Ex tb IIIC T85°C/T100°C/T120°C Db IECEx Ex db IIC T6/T5/T4 Gb Ex tb IIIC T85°C/T100°C/T120°C Db
Versions, certificates	/MR..... /0,16%..... /SIL 1..... /NACE.....	Marine certificate – DNV, BV Accuracy <0,16% (available for ranges >400mbar) SIL 1 certificate; only 4...20mA output NACE MR-01-75 certificate
Measuring range	/...+... [required units]	Measuring range
Casing, electrical connection	/SGM (1/2"NPTM)..... /FL (1/2"NPTM).....	316LSS housing, cable electrical connection (3 m of cable in standard) 316LSS housing, flying leads (2 m of flying leads in standard)
Process connection	/G1/2..... /GP..... /GP(Hastelloy)..... /1/2"NPTM..... /1/2"NPTF..... /1/4"NPTF..... /Autoclave.....	Thread G1/2" (male) with Ć 4 hole, wetted parts SS316L Pressure limits: max. 1000bar Thread G1/2" (male) with Ć 12 hole, wetted parts SS316L Pressure limits: min. 0,25bar / max. 350bar Thread G1/2" (male) with Ć 12 hole, wetted parts Hastelloy C 276 Pressure limits: min. 0,25bar / max. 350bar Thread 1/2" NPT Male, wetted parts SS316L Pressure limits: max. 690bar Thread 1/2" NPT Female, wetted parts SS316L Pressure limits: min. 10bar / max. 690bar Thread 1/4" NPT Female, wetted parts SS316L Pressure limits: min. 10bar / max. 690bar Compatible with Autovalve type F-250-C Pressure limits: min. 400bar / max. 1380bar
Accessories	/MT.....	Stainless Steel Tag plate mounted on wire
Other specification	/.....	Description of required parameters