TPA

PRESSURE TRANSMITTER

Principali caratteristiche

- *Measurement ranges:*
  0 .. 10; 0 .. 1000 bar / 0 .. 150; 0 .. 15000 psi
- *Pressure transmitter for generic applications*
- *Precision class: 0.15%FSO (T) ; 0.3%FSO (H)*
- *Output signal:*
  0.1 .. 5.1Vdc / 0.1 .. 10.1Vdc / 0 .. 5Vdc / 0 .. 10Vdc /
  4 .. 20mA two wires / 1 .. 5Vdc / 1 .. 10Vdc / 1 .. 6Vdc
- *Protection class: IP65*

Series TPA transmitters are based on the extensimetric measurement principle.
Integration of thermal compensation resistor groups on the primary device gives excellent performance, with real-time compensation and excellent long-term stability.
An innovative mechanical structure makes the transducer completely insensitive to tightening during assembly even for very low full scales, and allows very high pressures to be reached.
Thanks to highly stable electronic components and availability of output voltage and current signals, TPA transmitters can be used in applications requiring long-distance signal transmission or in smart control systems.
This sensor is suitable for a wide variety of applications thanks to multiple possibilities of mechanical, electrical and electronic process interface, and to a wide pressure range that includes DIN full scales.
Extension of the precision class to 0.15% makes this sensor suitable for all applications demanding both sturdiness and precise measurement.

TECHNICAL DATA

Output signal	VOLTAGE	CURRENT
Sensor class	**T** = 0.15% FSO (**1**) available for ranges 0/200..0/1000 bar (0/3000..0/15000 psi) **H** = 0.3% FSO (**1**) 0.6% FSO (**1**) for ranges 0/10..0/50 bar (0/150..0/750 psi)	
Measurement range	from 0/10 to 0/1000 bar (from 0/150 to 0/15000 psi)	
Max. applicable pressure (without decay) **(2)**	3 times Full Scale	
Resistance to bursting **(3)**	4 times Full Scale	
Power supply	15...30Vdc	10...30Vdc
Max. input on power supply **(4)**	40mA	32mA
Ambient pressure signal: Tolerance for class **H** = ± 0.5%FSO Tolerance for class **T** = ± 0.25%FSO	Outputs **M**, **N** = 0 Vdc Outputs **B**, **C** = 0.1 Vdc Outputs **P**, **Q**, **R** = 1 Vdc	Output **E** = 4 mA
Rated pressure signal: Tolerance for class **H** = ± 0.5%FSO Tolerance for class **T** = ± 0.25%FSO	Type **B** = 5.1 Vdc / Type **C** = 10.1 Vdc Type **M**, **P** = 5 Vdc / Type **N**, **Q** = 10 Vdc Type **R** = 6 Vdc	Output **E** = 20 mA
Max. allowed load	1mA	see diagram
Maximum rise time	4 msec / 1 msec optionV	8 msec / 4 msec option V
Setting of ambient pressure signal	± 5% FS	
Calibration signal (for connector V, P and F)	**T** 80% ± 0.25%FS **H** 80% ± 0.5%FS	
Output short circuit protection and reverse power polarity	YES	
Output pulse overvoltage protection	YES	
Compensated temperature range	0...70°C (32...158°F)	
Permitted temperature range	-30°C...85°C (-22...185°F)	
Storage temperature range	-35°C...90°C (-31...194°F)	
Thermal drift in compensated range (zero - span - cal.)	0,02%FS/°C (0,01%FS/°F)	
Materials in contact with measurement fluid	17- 4 PH (all scale ranges)	
Outer case material	AISI 304	
Protection class	IP65	
Process connections	G1/4” Female - G1/4” male - G1/2” male; other threadings on request	
Electrical connections	6-pole connector; other connectors on request	

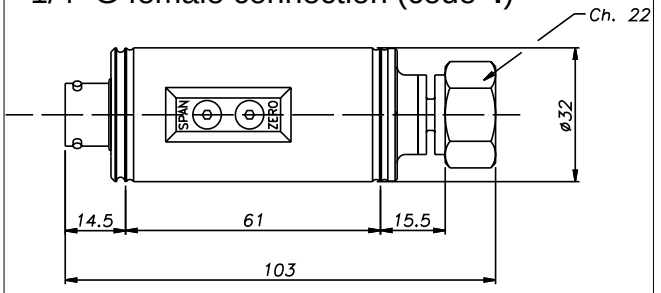
FSO = Full Scale Output
1 BFSL (Best Fit Straight Line) method
2 tested for more than 1000 strokes with single duration <2msec.
3 tested for more than 100 strokes with single duration <2msec.
4 with 30V power supply, max. load and calibration signal on.

MECHANICAL DIMENSIONS - Process connections

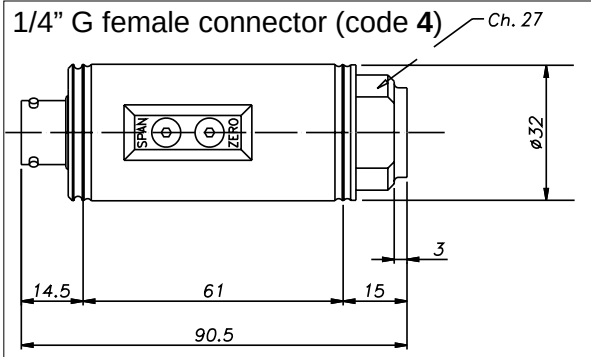
Pressure up to 60 bar

Pressure over 60 bar

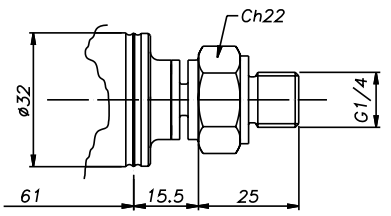
1/4” G female connection (code **4**)



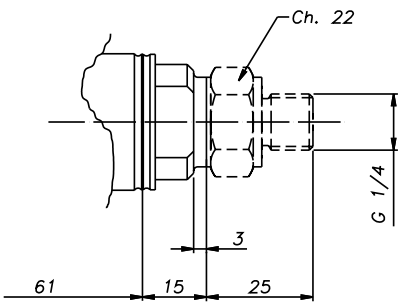
1/4” G female connector (code **4**)



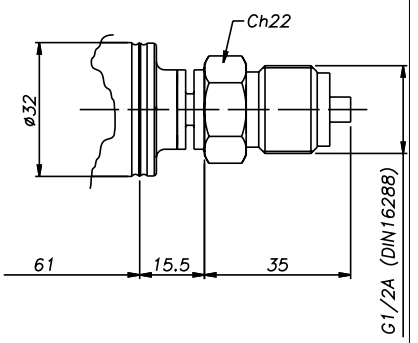
1/4” G male <u>connector</u> (code **1**)



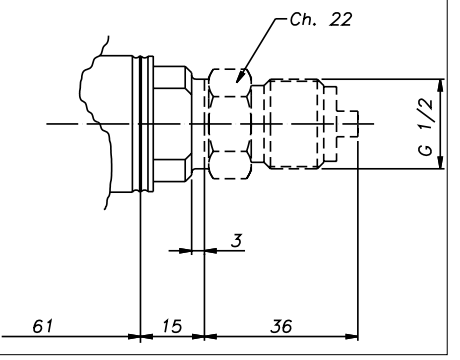
1/4” G male <u>connector</u> (code **1**)



1/2” G male <u>connector</u> (code **3**)



1/2” G male <u>connector</u> (code **3**)



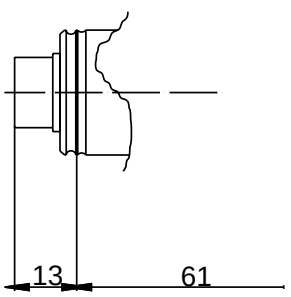
ATTENTION: For installation, use a maximum locking torque of 40Nm.

ADAPTERS AVAILABLE ON REQUEST

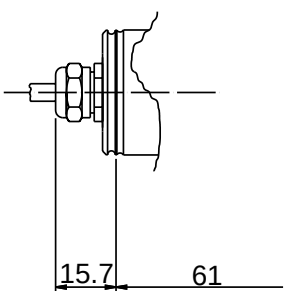
From 1/4G female to 1/4G male	**PKIT101**	From 1/4G female to M12x1,5 male	**PKIT106**
From 1/4G female to 1/8-27 NPT maschio	**PKIT102**	From 1/4G female to 7/16-20 UNF male	**PKIT107**
From 1/4G female to 1/8-27 NPT female	**PKIT103**	From 1/4G female to 1/2G male	**PKIT108**
From 1/4G female to M14x1,5 male	**PKIT104**	From 1/4G female to 1/4-18 NPT female	**PKIT109**
From 1/4G female to 1/4-18 NPT male	**PKIT105**	From 1/4G female to 7/16-20 UNF female	**PKIT111**

MECHANICAL DIMENSIONS - Connectors

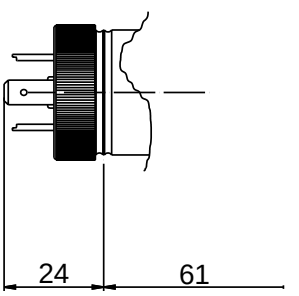
P - 7-pole connector



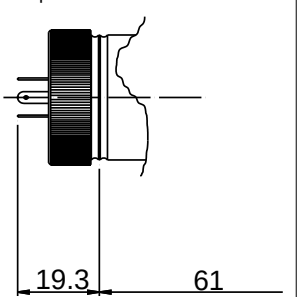
F - 4/6-pole cable



E - 4-pole connector solenoid

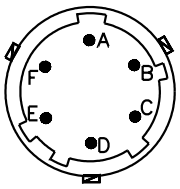


M - 4-pole connector microsolenoid



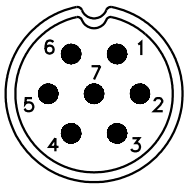
ELECTRICAL CONNECTIONS - Connectors

V - 6-pole connector



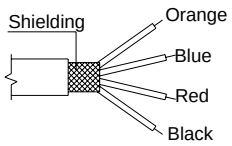
male connector
VPT02A10-6PT2

P - 7-pole connector

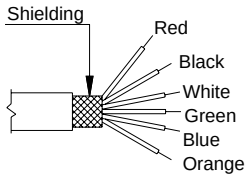


male connector
09-0127-09-07

F - 4/6-pole cable

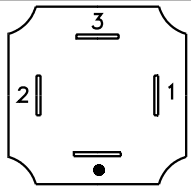


F - Shielded cable 4 x 0,25 - 1m
(for output code E)



F - Shielded cable 6 x 0,25 - 1m.

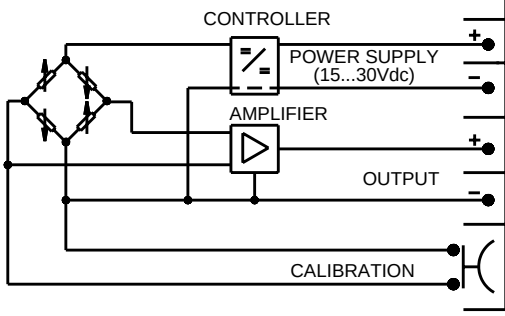
E - 4-pole conn. solenoid
M - 4-pole conn. microsolenoid



E - Solenoid 400DIN
46350A-ISO 4400
M - Microsolenoid 400 DIN
46350B-ISO 4400

ELECTRICAL CONNECTIONS - connection diagrams

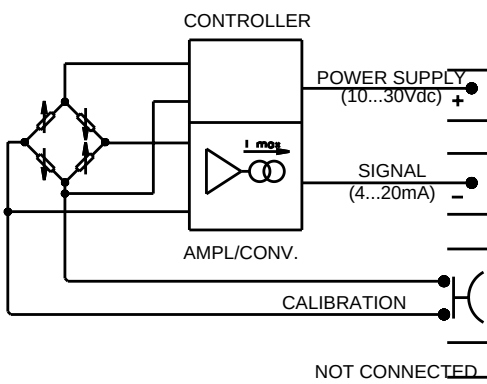
OUTPUT AMPLIFIED IN VOLTAGE - mod. **B/C/M/N/P/Q/R**



	Code **V**	Code **P**	Code **F**	Code **E/M**
+	**C**	**1**	White	**3**
–	**D**	**2**	Green	**2**
+	**A**	**3**	Red	**1**
–	**B**	**4**	Black	**2**
	E–F	**5–6**	Blue/Orange	*Not available*

The cable sheathing is connected to the transducer body.

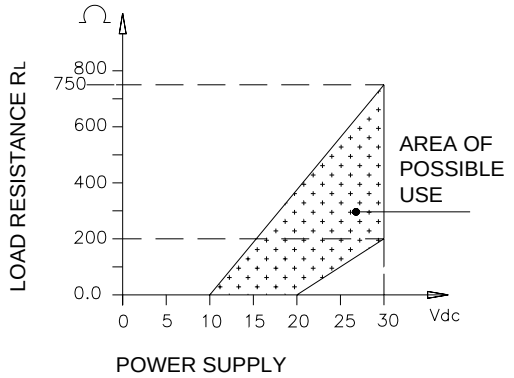
OUTPUT AMPLIFIED IN CURRENT - mod. **E**



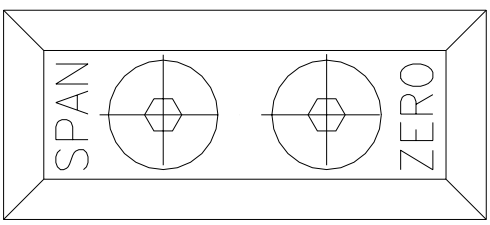
Code **V**	Code **P**	Code **F**	Code **E/M**
A	**3**	Red	**1**
B	**4**	Black	**2**
E – F	**5 – 6**	Blue/Orange	*Not available*
C - D	1 - 2 - 7		3

The cable sheathing is connected to the transducer body.

LOAD DIAGRAM (current output)



ADJUSTMENT



Nominal pressure (SPAN) and ambient pressure (ZERO) signal adjustment can be made by relative trimpots inside the transmitter body and accessible after removing the two protection screws

SPAN is set during production and must not be changed.

ACCESSORIES ON REQUEST

Connectors

Connection V
Female cable connector Prot. IP66 **CON 300**
Connection P
Female cable connector Prot. IP40 **CON 320**
Female cable connector 90° Prot. IP40 **CON 322**
Female cable connector Prot. IP67 **CON 321**

Connection E
Connector 3 poles + ground DIN43650A ISO4400 **CON 006** Prot. IP65
Connection M
Connector 3 poles + ground DIN43650B ISO4400 **CON 008** Prot. IP65

ORDER CODE

Pressure transmitter **TPA** ☐ ☐ ☐ ☐☐☐☐ ☐ ☐ ☐

OUTPUT SIGNAL	
Standard	
0.1 .. 10.1 Vdc	**C**
4 .. 20 mA	**E**
0 .. 10 Vdc	**N**
On request	
0.1 .. 5.1 Vdc	**B**
0 .. 5 Vdc	**M**
1 .. 5 Vdc	**P**
1 .. 10 Vdc	**Q**
1 .. 6 Vdc	**R**

PROCESS CONNECTIONS	
Standard	
G1/4 male	**1**
G 1/2 A (DIN 16288)	**3**
G 1/4 female	**4**
On request	
1/4" SAE (7/16-20UNF)	**2**
1/8-27 NPT female	**5**
1/4-18 NPT female	**6**
1/4-18 NPT male	**7**
M14x1,5 male	**8**
1/8-27 NPT male	**9**
M12x1,5 male	**R**
7/16-20UNF female	**S**

ELECTRICAL CONNECTIONS	
Standard	
6-pole connector	**V**
On request	
7-pole connector	**P**
4/6-pole shielded cable	**F**
4-pole connector solenoid	**E**
4-pole connector microsolenoid	**M**

Mechanical and/or electrical characteristics differing from standard may be arranged on request.

RESPONSE TIME	
L	Standard
V	Fast

PRECISION CLASS	
H	0.3% FSO (0.6% ranges ≤ 50 bar)
T	0.15% FSO (ranges ≥ 200 bar / 3000 psi)

PRESSURE RANGE				
	bar			**psi**
B01D	0..10		**P15D**	0..150
B16U	0..16		**P03C**	0..300
B02D	0..20		**P05C**	0..500
B25U	0..25		**P75D**	0..750
B03D	0..30		**P15C**	0..1500
B35U	0..35		**P03M**	0..3000
B04D	0..40		**P05M**	0..5000
B05D	0..50		**P75C**	0..7500
B06D	0..60		**P10M**	0..10000
B01C	0..100		**P15M**	0..15000
B16D	0..160			
B02C	0..200			
B25D	0..250			
B35D	0..350			
B04C	0..400			
B05C	0..500			
B06C	0..600			
B07C	0..700			
B01M	0..1000			

Ex.: **TPA - E - 4 - V - B02C - H - L**
Transmitter: output signal 4-20mA two wires, pressure fitting G1/4" female, 200 bar, 6-pole connector Veam, precision class 0.3%; standard response time (8 msec).

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