

TPFA

PRESSURE TRANSMITTER WITH FLUSH MEASUREMENT DIAPHRAGM



Main features

- **Pressure range:**
0 ... 10; 0 ... 1000 bar / 0 ... 150; 0 ... 15000 psi
- **Precision class:**
0.3% beyond 50 bar; 0.6% up to 50 bar
- **Entirely in stainless steel**
- **Internally generated calibration signal**
- **Output signal:**
0.1 ... 5.1Vdc / 0.1 ... 10.1Vdc;
4 ... 20mA two wires;
1 ... 5Vdc / 1 ... 10Vdc / 1 ... 6Vdc / 0 ... 5Vdc / 0 ... 10Vdc
- **Protection level: IP65**

Series TPFA transmitters with flush measurement diaphragm with output signal amplification system are designed to check the pressure of high-viscosity fluids, which cannot be done with normal transducers with internal measurement chamber. They are used in the food industry, where the means of measurement must not stagnate in cavities.

The selection of highly stable electronic components and the availability of output signals in voltage and current make series TPFA transmitters suitable for applications in which the signal has to be transmitted over long distances or in smart control and checking systems.

TECHNICAL DATA

	Output signal	VOLTAGE B/C/M/N/P/Q/R	CURRENT E
Precision class (1)		$< 0,3\% \text{ FSO } 0/60..0/1000 \text{ bar}$ $< 0,6\% \text{ FSO } 0/10..0/50 \text{ bar}$	
Resolution		Infinite	
Pressure range		from 0...10 to 0...1000 bar / from 0...150 to 0...15000 psi	
Max. applicable pressure (without degradation of the specific) (2)		3 times Full Scale (max. 2000 bar)	
Resistance to bursting		4 times Full Scale (max. 2000 bar)	
Measurement principle		Metal strain gauge glued (4 active branches)	
Power supply		15...30Vdc	10...30Vdc
Max. absorption on power supply (3)		40mA	20mA
Resistance of isolation at 50Vdc		$> 1000\text{M}\Omega$	
Nominal pressure signal: $\pm 0,5\% \text{ FS}$		B 5,1Vdc M/P 5Vdc R 6Vdc	C 10,1Vdc N/Q 10Vdc 20mA
Ambient pressure signal: $\pm 0,5\% \text{ FS}$		B/C 0,1Vdc P/Q/R 1Vdc	M/N 0Vdc 4mA
Calibration signal		$80\% \pm 1\% \text{ FS}$	
Nominal pressure signal control		$\pm 5\% \text{ FSO}$	
Ambient pressure signal control		$\pm 5\% \text{ FSO}$	
Max. permitted load		1mA	diagr.
Max. response time (0...90% FSO) L V		4ms 1ms	8ms 4ms
Noise at output (RMS 10-400Hz)		$< 0,05\% \text{ FSO}$	
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...85°C / -22...185°F	
Thermal drift in compensated range (zero - cal. - sens.)		$< \pm 0,02\% \text{ FSO}/^\circ\text{C}$ / $< \pm 0,01\% \text{ FSO}/^\circ\text{F}$	
Materials in contact with measurement fluid		17-4PH stainless steel	
Outer case material		AISI 304 stainless steel	
Protection level		IP65	
Process connections		Standard: M18x1.5; on request: 3/4-16UNF, 1/2"G male	
Electrical connections		6-pole connector; other connectors on request	

FSO = Full Scale Output

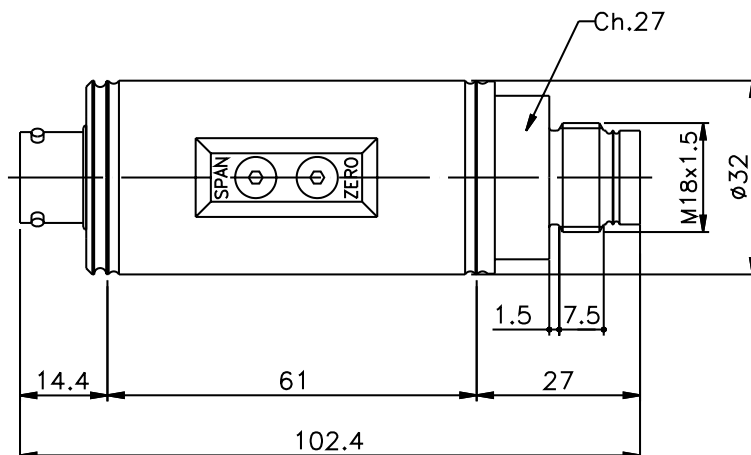
1 BFSL (Best Fit Straight Line) method

2 tested for more than 1000 strokes with single duration <2msec.

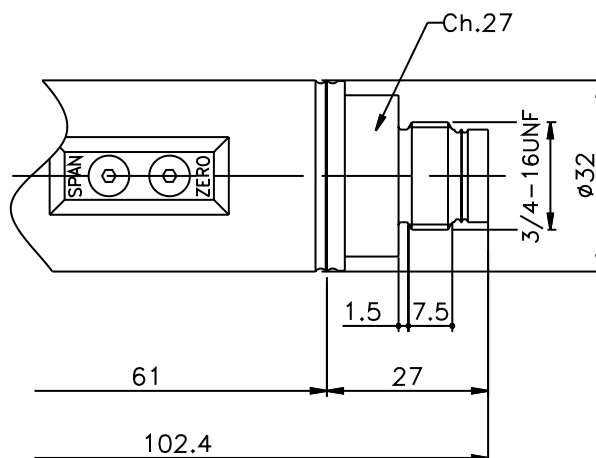
3 with 30 V power supply, max. load and calibration signal on.

MECHANICAL DIMENSIONS - Process Connections

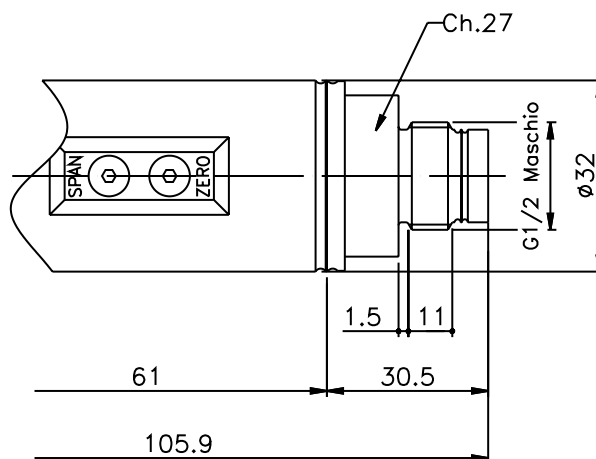
Connection
M18 x 1.5
(code **G**)



Connection
3/4" - 16 UNF
(code **L**)



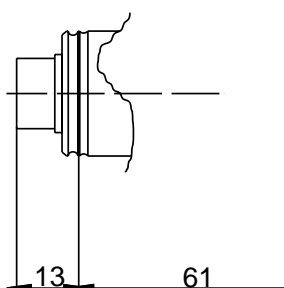
Connection
1/2" G male
(code **M**)



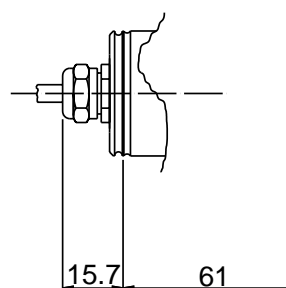
ATTENTION: For installation, use a maximum locking torque of 40Nm

MECHANICAL DIMENSIONS - Connectors

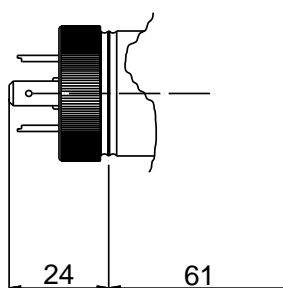
P - 7-pole connector



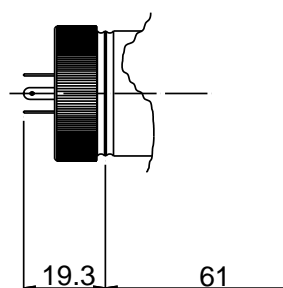
F - 4-6 pole cable



E - 4-pole connector solenoid

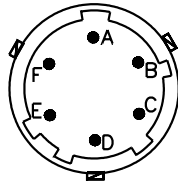


M - 4-pole connector microsolenoid



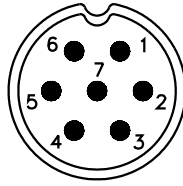
ELECTRICAL CONNECTIONS - Connectors

V - 6-pole connector



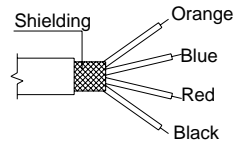
Male conn.
VPT02A10-6PT2

P - 7-pole connector

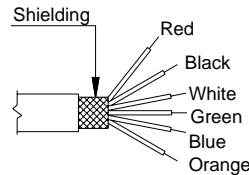


Male conn.
09-0127-09-07

F - 6 pole cable

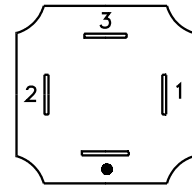


F - Shielded cable 4 x 0,25 - 1m
(per uscita codice E)



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

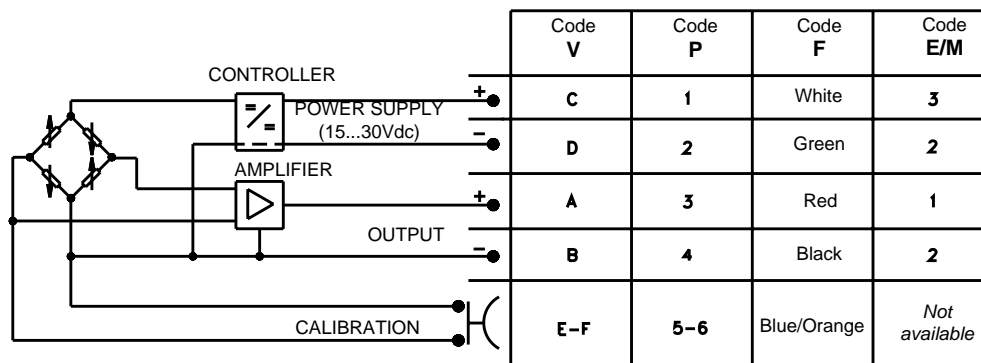
E - 4-pole connector solenoid
M - 4-pole connector microsolenoid



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

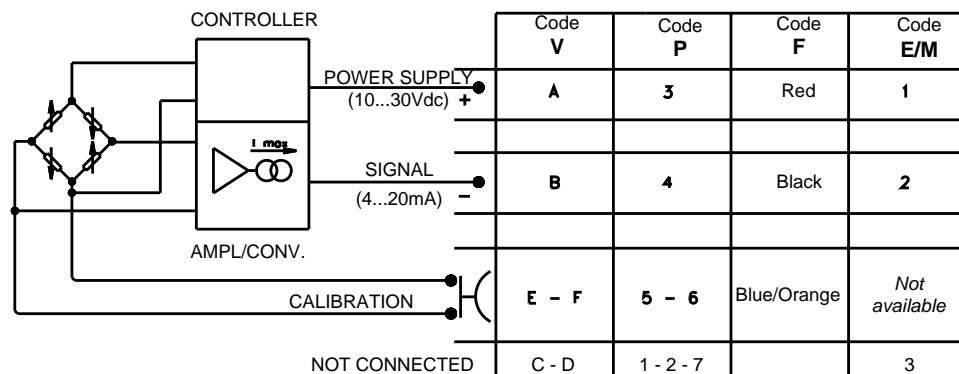
ELECTRICAL CONNECTIONS - connection diagrams

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



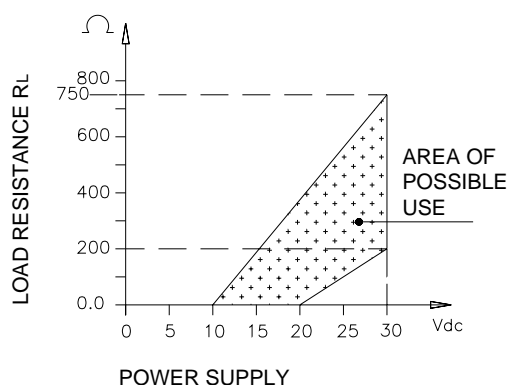
The cable sheathing is connected to the transducer body

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

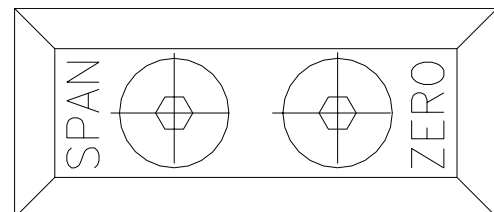


The cable sheathing is connected to the transducer body

LOAD DIAGRAM (current output)



SETTINGS



The signal can be set to room pressure (ZERO) and to rated pressure (SPAN) by means of their trimmers, accessed inside the transmitter after removal of the two fixing 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 Prot. IP65 **CON 006**

Connection M

Connector 3 poles + ground DIN43650B ISO4400 Prot. IP65 **CON 008**

ORDER CODE

Pressure transmitter

TPFA

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		
M18 x 1.5		G
On request		
3/4-16 UNF)		L
1/2" G male		M

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

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.: **TPFA - E - G - V - B02C - V**

Transmitter: output signal 4-20mA two wires, pressure fitting M18x1.5 flush diaphragm, pressure range 200 bar, 6-pole Veam connector, fast (4 msec) response time

GEFRAN spa reserves the right to make any kind of design or functional modification at any moment without prior notice



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