



Main features

- Ranges: from: 0...10 to 0...1000 bar
(0...150 to 0...15000 psi)
- Accuracy: $\pm 0.2\%$ FSO typical
- Protection rating: IP65/IP67
- Wetted parts: 17-4PH
- Temperature range: $-40...+120^{\circ}\text{C}$
- Flush fitting stainless steel measuring diaphragm
- Internal calibration signal

TPF Series flush diaphragm pressure transducers are based on bonded strain gauge on stainless steel technology.

Thanks to the strong flush diaphragm made with 17-4 PH stainless steel, TPF is particularly suitable for pressure measurement where the media is with high viscosity (thick fluids, oils, rubber, pulps, chemical products, etc.) and the traditional transducers with internal measuring chamber cannot be used.

The high thickness of the diaphragm makes the product very reliable and suitable for heavy industrial application.

Internal state of the art electronics and very high precision mechanical machining make TPF product the ideal solution for above needs, where the non amplified mV/V sensor has to be used.

TECHNICAL DATA

Accuracy (1)	H $\pm 0.2\%$ FSO typical ($\pm 0.3\%$ FSO max) 0-60...0-1000 bar M $\pm 0.5\%$ FSO typical ($\pm 0.6\%$ FSO max) 0-10...0-50 bar
Resolution	Infinite
Overpressure (without degrading performance) (2)	3 x Full Scale (max 2000 bar)
Pressure containment (Burst test) (3)	4 x Full Scale (max 2000 bar)
Wetted parts	Fluid compatible with Inox 17-4PH
Body materials	Inox AISI 304 Stainless Steel and Nylon 66GF35V0
Power supply	10 (max 15) Vdc/ac RMS
Common mode voltage	Typical 5V @ 10V supply
Output impedance	350 Ω (± 1)
Load impedance	> 1000 K Ω
Insulation resistance	> 1000 M Ω @ 50Volt
Zero offset and span setting	$\pm 0.5\%$ FSO
Output voltage (sensitivity)	10...40 bar / 150...500 psi - 1.5 mV/V nominal 50...160 bar / 750...1500 psi - 2 mV/V nominal 200...1000 bar / 3000...15000 psi - 3 mV/V nominal
Calibration signal	80% FSO nominal (see connection diagram)
Long term stability	0.2% FSO/Year
Operating temperature range (process) (5)	$-40...+120^{\circ}\text{C}$ ($-40...+248^{\circ}\text{F}$)
Compensated temperature range (4)	$-20...+85^{\circ}\text{C}$ ($-4...+185^{\circ}\text{F}$)
Storage temperature range	$-40...+125^{\circ}\text{C}$ ($-40...+257^{\circ}\text{F}$)
Temperature effects over compensated range (zero-span)	$\pm 0.01\%$ FSO/ $^{\circ}\text{C}$ typical ($\pm 0.02\%$ FSO/ $^{\circ}\text{C}$ max.) > 50 bar (750 psi) $\pm 0.02\%$ FSO/ $^{\circ}\text{C}$ typical ($\pm 0.03\%$ FSO/ $^{\circ}\text{C}$ max.) \leq 50 bar (750 psi)
Mounting position effects	Negligible
Humidity	Up to 100% HR non condensing
Weight	110 gr. nominal
Mechanical shock	100g/11msec, according to IEC 60068-2-27
Vibrations	20g max @ 10...2000Hz, according to IEC 60068-2-6
Ingress protection	IP65/IP66/IP67

FSO = Full Scale Output (output signal at rated pressure)

1 Includes combined effects of Non-Linearity BFSL (Best Fit Straight Line), Hysteresis and Repeatability

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

3 tested for more than 100 strokes with single duration < 2msec.

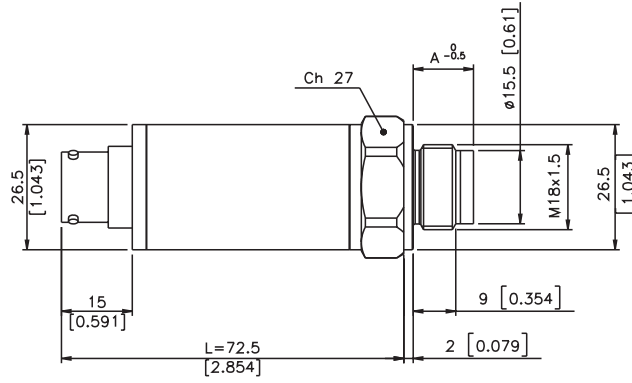
4 temperature outside compensated range may cause zero signal drift

5 ambient and/or electronics part temperature must not exceed 105°C

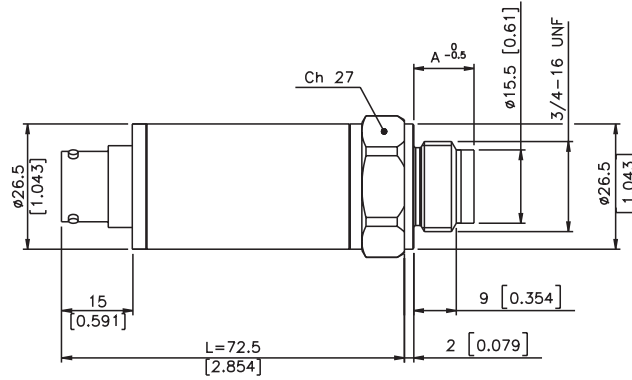
MECHANICAL DIMENSIONS - Process Connections

Dimensions: mm [inches]

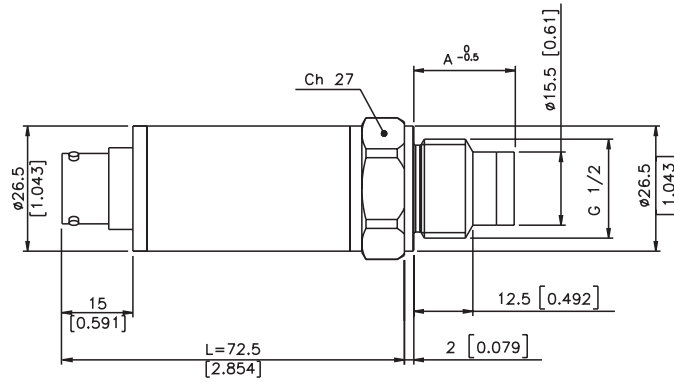
Connection
M18 x 1.5
(code **G**)



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



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



ATTENTION: for installation use a maximum torque force of 40Nm

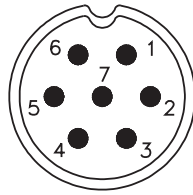
Pressure range		Dimension "A" (mm)			Pressure range		Dimension "A" (mm)			Pressure range		Dimension "A" (mm)		
PSI	BAR	M18x1.5 (G)	3/4" (L)	1/2" (M)	PSI	BAR	M18x1.5 (G)	3/4" (L)	1/2" (M)	PSI	BAR	M18x1.5 (G)	3/4" (L)	1/2" (M)
150	10	13	13	20.5	750	50	13.5	13.5	21	7500	500	14.1	14.1	21.6
250	16				1000	60				10000	600			
300	20				1500	100				15000	700			
	25				2500	160					1000			
	30				3000	200								
500	35					250								
	40		5000	350										
					400									

ELECTRICAL CONNECTION

<p>P - 7 pole connector</p>	<p>V - 6 pole connector</p>	<p>F - 4/6 pole cable</p>
<p>Z - 4 pole connector M12 x 1</p>	<p>E - 4 pole connector solenoid</p>	<p>M - 4 pole connector microsolenoid</p>

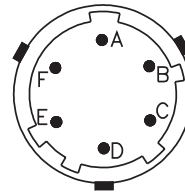
ELECTRICAL CONNECTION - Connectors

P - 7 pole connector



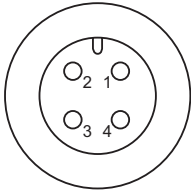
Male connector 09-127-09-07
Protection IP67

V - 6 pole connector



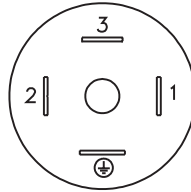
Male connector VPT02A10-6PT2
Protection IP66

Z - 4 pole male connector M12 x 1



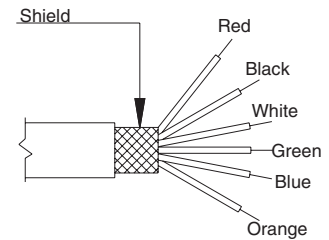
4 pole series 713 male connector
Protection IP67

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



Solenoid DIN 43650A - ISO4400
Protection IP65
Microsolenoid DIN 43650C - ISO4400
Protection IP65

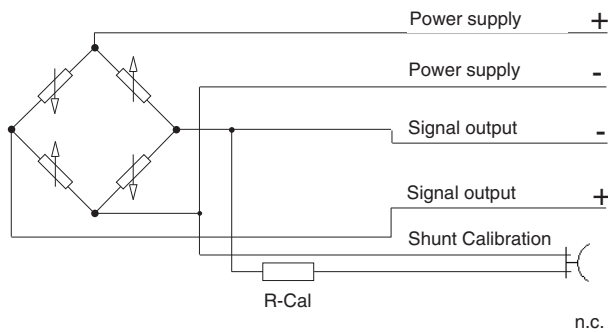
F - 6 pole cable



Shielded cable 6x0.25 - 1m
Protection IP65

ELECTRICAL CONNECTION - connection diagram

mV/V output



Code V	Code P	Code F	Code E/M	Code Z
C	1	White	3	1
D	2	green		2
B	4	Black or Yellow	2	4
A	3	Red	1	3
E - F	5 - 6	Blue / Orange or Violet	Non available	Non available
	7			

Cable shield connected to transducer body

ACCESSORIES ON REQUEST

Connectors

Connection E

3 pole connector + ground DIN43650A ISO4400
Prot. IP65

Connection M

3 pole connector + ground DIN43650C ISO4400
Prot. IP65

Connection Z

4 pole female cable connector M12x1
Prot. IP67

Connection Z

4 pole female cable connector, 90° M12x1
Prot. IP67

CON 006

Connection P

7 pole female cable connector,
Prot. IP67

Connection P

7 pole female cable connector,
Prot. IP40

Connection P

7 pole female cable connector 90°,
Prot. IP40

Connection V

6 pole female cable connector,
Prot. IP66

CON 321

CON 320

CON 322

CON 300

EXTENSION CABLES

6 pole female connector (CON 300) + 2 m (6.5 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 4 m (13 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 6 m (20 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 8 m (25 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 10 m (33 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 15 m (50 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 20 m (66 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 25 m (82 ft) of cable (6x0.25)
6 pole female connector (CON 300) + 30 m (100 ft) of cable (6x0.25)
Other lengths

C02W

C04W

C06W

C08W

C10W

C15W

C20W

C25W

C30W

on request

Cable color code	
Pin	Wire
A	Red
B	Black
C	White
D	Green
E	Blue
F	Orange

ORDERING INFORMATION

Pressure Transducer

TPF

PROCESS CONNECTION	
Standard	
M18x1.5	G
1/2" G male	M
On request	
3/4-16 UNF	L

ELECTRICAL CONNECTION	
Standard	
6 pole connector	V
7 pole connector	P
M12x1 connector (*)	Z
6 pole shielded cable (**)	F
4 pole solenoid connector (*)	E
4 pole microsolenoid connector (*)	M

(*) Calibration signal not available

(**) 1mt cable included as standard. Custom lengths available, at extra cost.

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

ACCURACY	
H	±0.2%FS typical 0...60 - 0...1000 bar (only)
M	±0.5%FS typical 0...10 - 0...50 bar (only)

MEASUREMENT RANGE			
Bar		Psi	
B01D	0...10	P15D	0...150
B16U	0...16	P25D	0...250
B02D	0...20	P03C	0...300
B25U	0...25	P05C	0...500
B03D	0...30	P75D	0...750
B35U	0...35	P01M	0...1000
B04D	0...40	P15C	0...1500
B05D	0...50	P02M	0...2000
B06D	0...60	P25C	0...2500
B01C	0...100	P03M	0...3000
B16D	0...160	P04M	0...4000
B02C	0...200	P05M	0...5000
B25D	0...250	P75C	0...7500
B35D	0...350	P10M	0...10000
B04C	0...400	P15M	0...15000
B05C	0...500		
B06C	0...600		
B07C	0...700		
B01M	0...1000		

CALIBRATION STANDARDS
Instruments manufactured by Gefran are calibrated against precision pressure calibration equipment which is traceable to International Standards

Ex.: TPF - G - P - B01D - M - -

Flush fitting pressure transducer, M18x1.5 process connection, 7 pole electrical connector, 0...10 bar measurement range, ±0.5%FSO typical accuracy.

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