



#### 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 $\Omega$ ( $\pm 1$ )
Load impedance	> 1000 K $\Omega$
Insulation resistance	> 1000 M $\Omega$ @ 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.

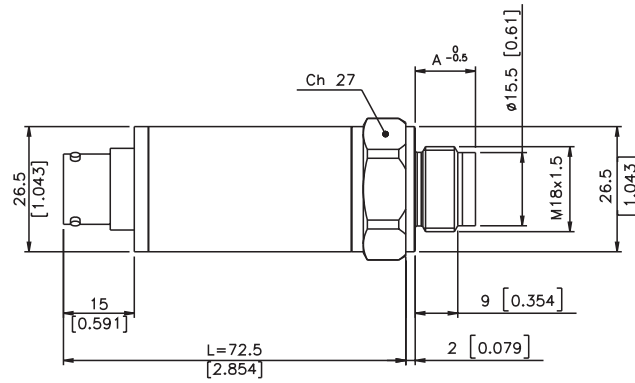
4 temperature outside compensated range may cause zero signal drift

5 ambient and/or electronics part temperature must not exceed  $105^{\circ}\text{C}$

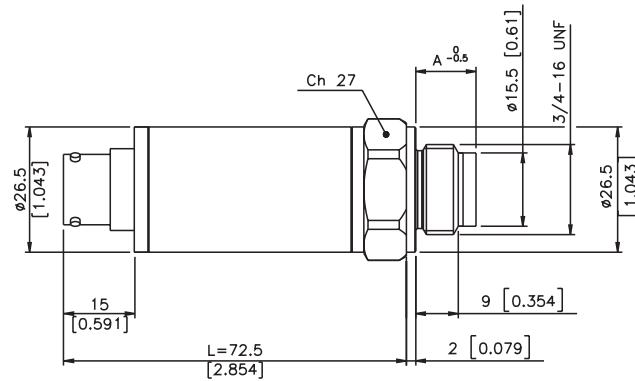
## MECHANICAL DIMENSIONS - Process Connections

Dimensions: mm [inches]

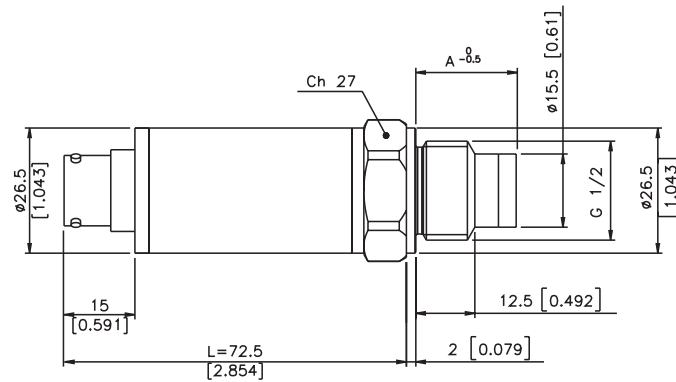
Connection  
M18 x 1.5  
(code **G**)



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



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

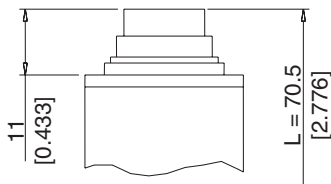


**ATTENTION:** for installation use a maximum torque force of 40Nm

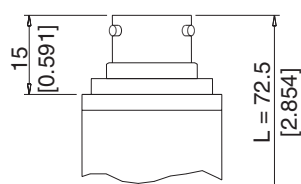
Pressure range		Dimension "A" (mm)			Pressure range		Dimension "A" (mm)			Pressure range		Dimension "A" (mm)		
PSI	BAR	M18x1.5 (G)	3/4" (L)	1/2" (M)	PSI	BAR	M18x1.5 (G)	3/4" (L)	1/2" (M)	PSI	BAR	M18x1.5 (G)	3/4" (L)	1/2" (M)
150	10	13	13	20.5	750	50	13.5	13.5	21	7500	500	14.1	14.1	21.6
250	16				1000	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

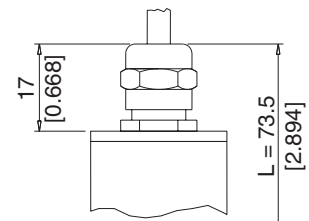
**P - 7 pole connector**



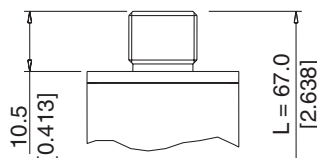
**V - 6 pole connector**



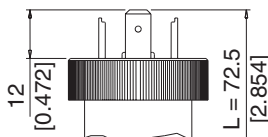
**F - 4/6 pole cable**



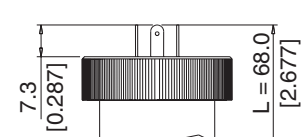
**Z - 4 pole connector  
M12 x 1**



**E - 4 pole connector  
solenoid**

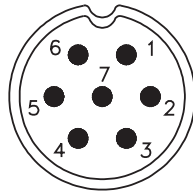


**M - 4 pole connector  
microsolenoid**



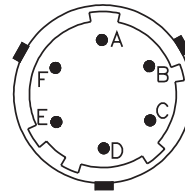
## ELECTRICAL CONNECTION - Connectors

**P - 7 pole connector**



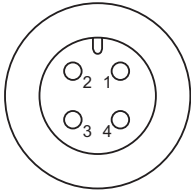
Male connector 09-127-09-07  
Protection IP67

**V - 6 pole connector**



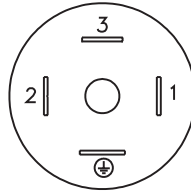
Male connector VPT02A10-6PT2  
Protection IP66

**Z - 4 pole male connector M12 x 1**



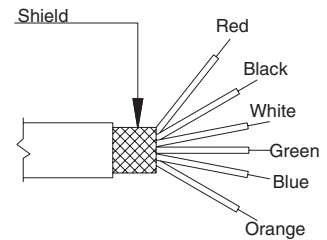
4 pole series 713 male connector  
Protection IP67

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



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

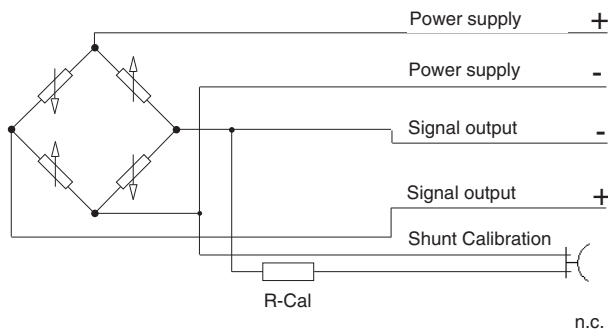
**F - 6 pole cable**



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	
<b>Standard</b>	
M18x1.5	<b>G</b>
1/2" G male	<b>M</b>
<b>On request</b>	
3/4-16 UNF	<b>L</b>

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

(\*) 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	
<b>H</b>	±0.2%FS typical 0...60 - 0...1000 bar (only)
<b>M</b>	±0.5%FS typical 0...10 - 0...50 bar (only)

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

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.

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