



Main Features

- Ranges: from 0...4 bar to 0...1000 bar (0...60psi to 0...1500psi)
- Accuracy: $\pm 0.1\%$ FS typical
- Complete range of voltage/current outputs
- Stainless Steel construction
- Protection rating: IP65/IP67
- Wetted parts 17-4PH
- Temperature range -40...+105°C

Series TPSA transmitters are based on fluid-free sensing element on stainless steel diaphragm. An innovative mechanical structure makes the sensor completely insensitive to tightening during installation. This transmitter is suitable for all those applications where in addition to ruggedness and reliability high accuracy is required.

TECHNICAL DATA

Output signal	VOLTAGE	CURRENT
Accuracy (1)	$\pm 0.1\%$ FS typical; $\pm 0.15\%$ FS max $\geq 100\text{bar}/1500\text{psi}$ $\pm 0.15\%$ FS typical; $\pm 0.25\%$ FS max $< 100\text{bar}/1500\text{psi}$	
Resolution	Infinite	
Overpressure (without degrading performance) (2)	See table	
Pressure containment (Burst test) (3)	See table	
Pressure media	Fluid compatible with Stainless Steel AISI 430F and 17-4PH	
Body materials	Stainless Steel INOX AISI 304	
Power supply	C/N/Q 18...32Vdc B/M/P/R 12...32Vdc	E 10...30Vdc
Supply sensitivity	$< 0.0015\%$ FS/V	
Insulation resistance	$> 1000\text{ M}\Omega$ a 50Vdc	
Zero output signal	B, C, M, N, P, Q, R	4mA (E)
Full scale output signal	B, C, M, N, P, Q, R	20mA (E)
Max. current absorption	$< 30\text{mA}$	$< 32\text{mA}$
Max allowed load	1mA	See diagram
Long term stability	$< 0.1\%$ FS/per year	
Operating temperature range (process)	$-40...+105^\circ\text{C}$ ($-40...+221^\circ\text{F}$)	
Compensated temperature range	$-10...+85^\circ\text{C}$ ($14...+185^\circ\text{F}$)	
Storage temperature range	$-40...+125^\circ\text{C}$ ($-40...+257^\circ\text{F}$)	
Temperature effects over compensated range (zero-span)	$\pm 0.008\%$ FS/ $^\circ\text{C}$ typical ($\pm 0.015\%$ FS/ $^\circ\text{C}$ max.)	
Response time (10...90%FS)	$< 1\text{ msec.}$	
Start-up time	$< 500\text{ msec.}$	
Mounting position effects	Negligible	
Humidity	Fino a 100%RH non condensing	
Weight	110 gr. nominal	
Mechanical shock	100 g / 1 msec. according to IEC 60068-2-27	
Vibrations	20 g max a 15-2000Hz msec. according to IEC6008-2-6	
Ingress protection	IP65/IP66/IP67	
Output short circuit and reverse polarity protection	YES	

FS = Full Scale

1 BFSL method (Best Fit Straight Line): includes combined effects of Non-Linearity, Hysteresis and Repeatability (acc. to IEC 62828-2)

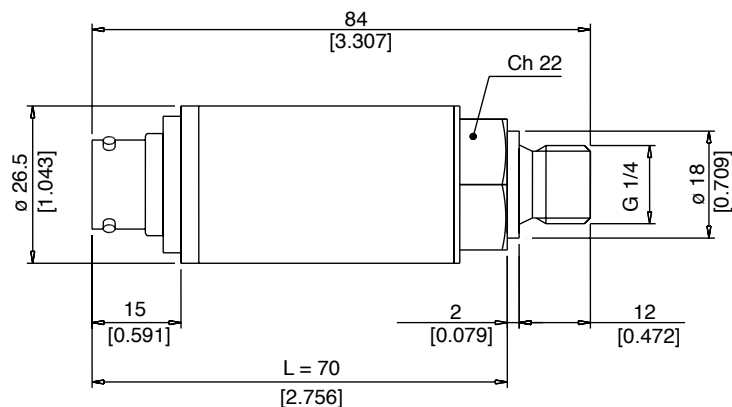
2 tested for more than 1000 strokes with single duration $< 2\text{msec.}$

3 tested for more than 100 strokes with single duration $< 2\text{msec.}$

RANGE (Bar)	4	5	6	7	10	16	20	25	30	40	50	100	160	200	250	350	400	500	600	700	1000
Overpressure	12	15	18	21	30	48	60	75	90	120	150	300	480	600	750	1050	1200	1500	1800	2000	2000
Burst pressure	20	25	30	35	50	80	100	125	150	200	250	500	800	1000	1250	1750	2000	2500	2500	2500	2500

INSTALLATION DRAWINGS

Dimensions: mm [inches]

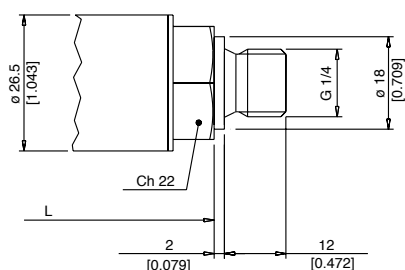


Recommended tightening torque: 30 Nm

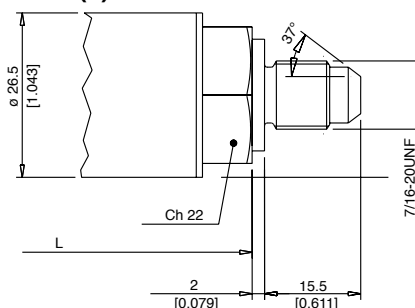
Maximum tightening torque: 40 Nm

PRESSURE CONNECTION

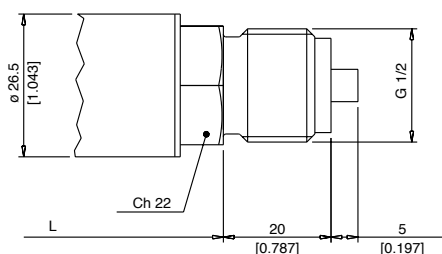
(1) G 1/4 MALE (DIN 3852-A)



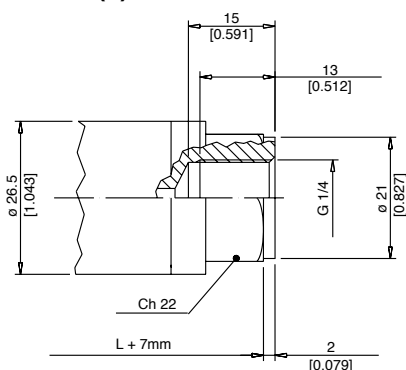
(2) SAE 04 AS4395 - E



(3) G 1/2 A (DIN 16288)

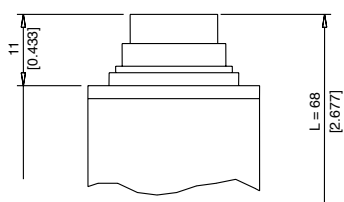


(4) G 1/4 FEMALE

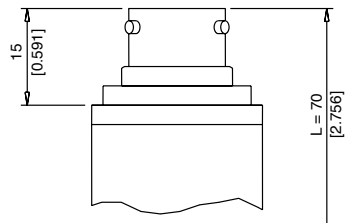


ELECTRICAL CONNECTION

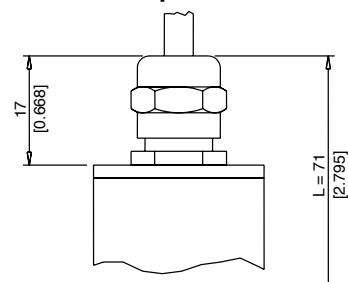
P - 7 pole connector



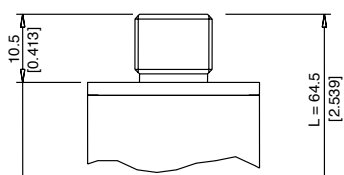
V - 6 pole connector



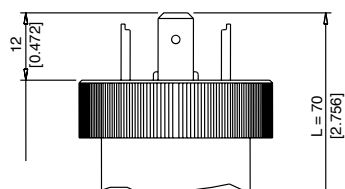
F - 2/4 pole cable



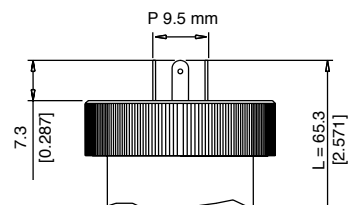
Z - 4 pole connector
M12 x 1



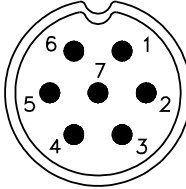
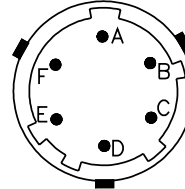
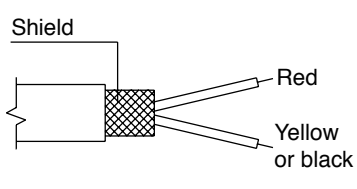
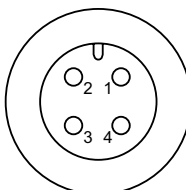
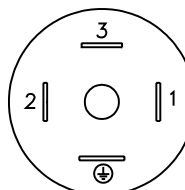
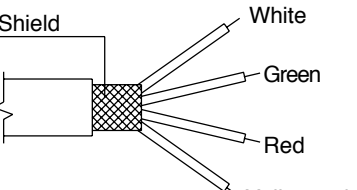
E - 4 pole connector
EN 175301-803A



M - 4 pole connector
EN 175301-803C



ELECTRICAL CONNECTION - Connectors

P - 7-pole connector M16x0.75  Protection IP67	V - 6-pole bayonet connector  Protection IP66	F - 2 pole cable  Shielded cable 2x0.25 - 2m. (output E) Protection IP65
Z - M12x1 connector  4 pole male connector Protection IP67	E - EN 175301-803A M - EN 175301-803C  4 pin Type A Protection IP65 4 pin Type C Protection IP65	F - 4 pole cable  Shielded cable 4x0.25 - 2m Protection IP65

ELECTRICAL CONNECTION - connection diagrams

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

	cod. V	cod. P	cod. F	cod. E/M	cod. Z
+	C	1	White	3	3
-	D	2	Green	2	2
+	A	3	Red	1	1
-	B	4	Black or Yellow	2	2
⊥	Case	Case	Shield	⊕	N.C.

LOAD DIAGRAM (Current output)

CURRENT AMPLIFIED OUTPUT - mod. E

	cod. V	cod. P	cod. F	cod. E/M	cod. Z
+	A	3	Red	1	1
-	B	4	Black or Yellow	2	2
⊥	Case	Case	Shield	⊕	N.C.

ACCESSORIES ON REQUEST

Connectors Plugs		
Connection E EN 175301-803 4 pole Type A (P 18 mm) Prot. IP65	CON 006	Connection M EN 175301-803 4 pole Type C (P 9.5 mm) Prot. IP65 Connection P 7 poles female cable connector Prot. IP67 CON 321
Connection Z 4 poles connector Prot. IP67	CON 293	Connection V 6 poles female cable connector Prot. IP66 CON 300

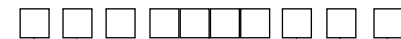
EXTENSION CABLES

6-pin connector with 8m (25ft) cable	C08WLS	<table><tr><th colspan="2">Cable color code</th></tr><tr><th>Connector</th><th>Wire</th></tr><tr><td>A</td><td>Red</td></tr><tr><td>B</td><td>Yellow/Black</td></tr><tr><td>C</td><td>White</td></tr><tr><td>D</td><td>Green</td></tr><tr><td>E</td><td>Blue</td></tr><tr><td>F</td><td>Orange</td></tr></table>	Cable color code		Connector	Wire	A	Red	B	Yellow/Black	C	White	D	Green	E	Blue	F	Orange
Cable color code																		
Connector	Wire																	
A	Red																	
B	Yellow/Black																	
C	White																	
D	Green																	
E	Blue																	
F	Orange																	
6-pin connector with 15m (50ft) cable	C15WLS																	
6-pin connector with 30m (100ft) cable	C30WLS																	
Other lengths	consult factory																	

ORDERING INFORMATION

Pressure transmitter

TPSA



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

PRESSURE CONNECTION	
Standard	
G 1/4 gas male (DIN 3852-A)	1
On request	
7/16-20 UNF-2A male (SAE 4 for AS4395-E)	2
G 1/2A (DIN 16288)	3
G 1/4 gas female	4
1/8-27 NPT female	5
1/4 - 18 NPT female	6
1/4 - 18 NPT male	7
M14 x 1.5 male	8
1/8 - 27 NPT male	9
G 1/4 gas male (DIN 3852-E)	E
M12 x 1.5 male	R
7/16-20 UNF-2A male (SAE 4 for J1926-2) (*)	K
7/16-20 UNF-2A female (SAE 4)	F

(*) Max. working pressure: 630 bar (9137 psi)

ELECTRICAL CONNECTION	
EN 175301-803 type A (P 18 mm)	E
Shielded cable	F
4-pole connector M12 x 1	Z
EN 175301-803 type C (P 9.5 mm)	M
7 pole connector M16x0.75	P
6 pole bayonet connector	V

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

RESPONSE TIME

V Fast (< 1 msec)

ACCURACY

T ± 0.1% FS typical
≥100bar/1500psi
±0.15% FS typical
<100bar/1500psi

MEASUREMENT RANGE

	bar		psi
B04U	0..4	P06D	0..60
B05U	0..5	P75U	0..75
B06U	0..6	P01C	0..100
B07U	0..7	P15D	0..150
B01D	0..10	P25D	0..250
B16U	0..16	P03C	0..300
B02D	0..20	P05C	0..500
B25U	0..25	P75D	0..750
B03D	0..30	P15C	0..1500
B04D	0..40	P02M	0..2000
B05D	0..50	P25C	0..2500
B01C	0..100	P03M	0..3000
B16D	0..160	P04M	0..4000
B02C	0..200	P75D	0..750
B25D	0..250	P15C	0..1500
B35D	0..350	P20C	0..2000
B04C	0..400	P25C	0..2500
B05C	0..500	P03M	0..3000
B06C	0..600	P05M	0..5000
B07C	0..700	P75C	0..7500
B01M	0..1000	P10M	0..10000
		P15M	0..15000

CALIBRATION STANDARDS

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

Ex: TPSA - N - 1 - P - B35D - T - V

Pressure transmitter TPSA with 0...10Vdc output signal, G 1/4 male pressure connection, 7 pole connector, 0...350 bar measurement range, ± 0.1% FS accuracy, 1msec response time.

Sensors are manufactured in compliance with:

- EMC 2014/30/EU compatibility directive
- RoHS 2011/65/EU directive

Electrical installation requirements and Conformity certificate are available on our web site: www.gefran.com

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

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