



### Main Features

- Ranges: from 0...4 bar to 0...1000 bar (0...60psi to 0...15000psi)
- 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  $-40...+105^{\circ}\text{C}$

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	<b>C/N/Q</b> 18...32Vdc <b>B/M/P/R</b> 12...32Vdc	<b>E</b> 10...30Vdc
Supply sensitivity	$< 0.0015\%$ FS/V	
Insulation resistance	$> 1000\ \text{M}\Omega$ a 50Volt	
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)

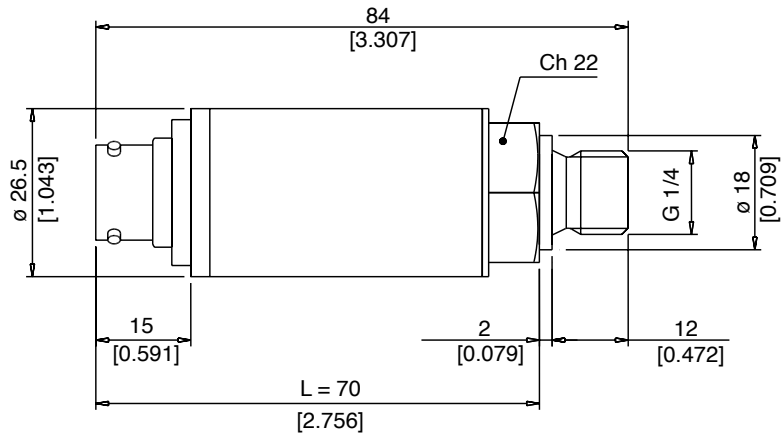
2 tested for more than 1000 strokes with single duration  $< 2\text{msec.}$

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

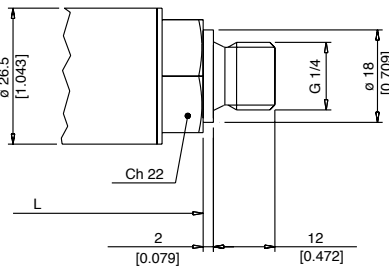
# INSTALLATION DRAWINGS

Dimensions: mm [inches]

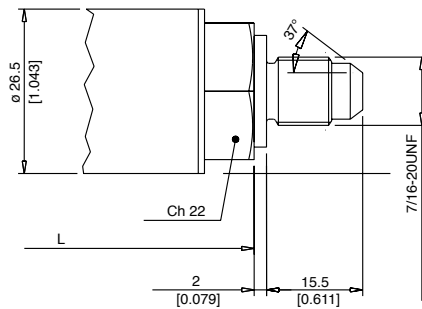


## PRESSURE CONNECTION

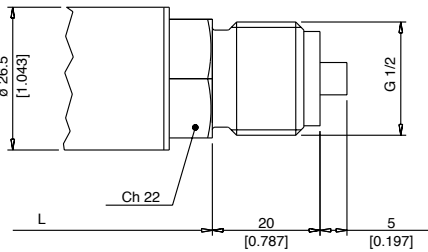
**(1) G 1/4 MALE (DIN 3852-A)**



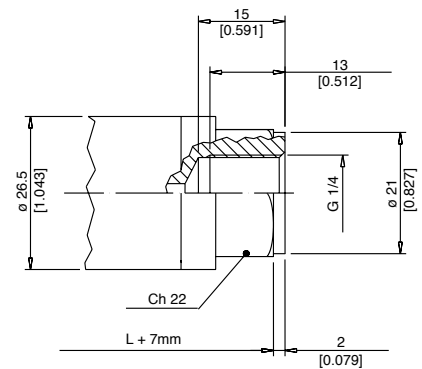
**(2) SAE 04 AS4395 - E**



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

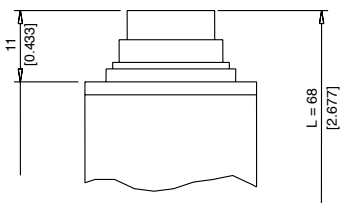


**(4) G 1/4 FEMALE**

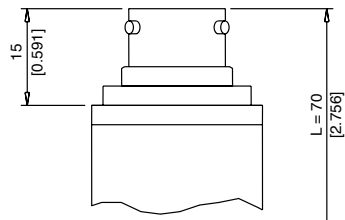


## ELECTRICAL CONNECTION

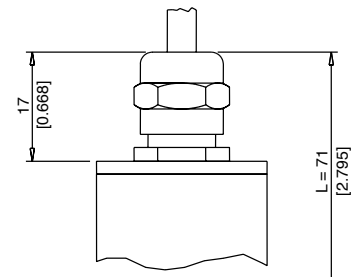
**P - 7 pole connector**



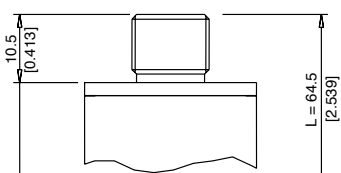
**V - 6 pole connector**



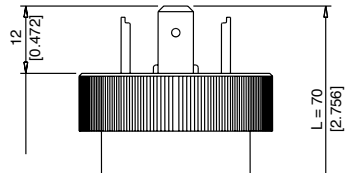
**F - 2/4 pole cable**



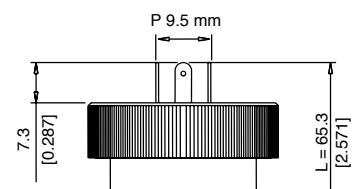
**Z - 4 pole connector  
M12 x 1**



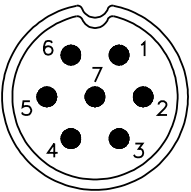
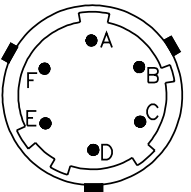
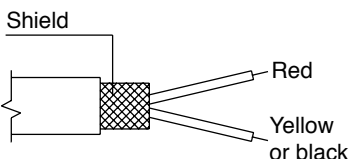
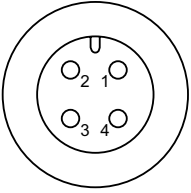
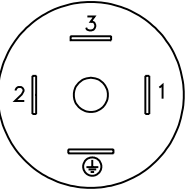
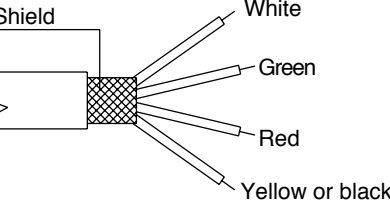
**E - 4 pole connector  
EN 175301-803A**



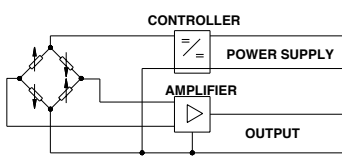
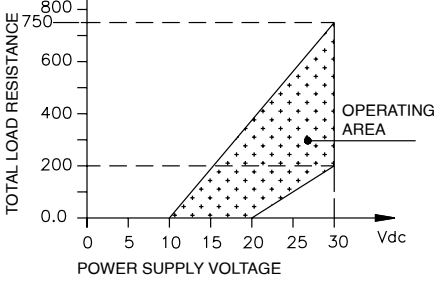
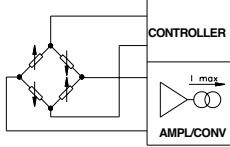
**M - 4 pole connector  
EN 175301-803C**



## ELECTRICAL CONNECTION - Connectors

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

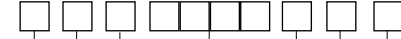
## ELECTRICAL CONNECTION - connection diagrams

<p>VOLTAGE AMPLIFIED OUTPUT - mod. <b>B/C/M/N/P/Q/R</b></p>						<p>LOAD DIAGRAM (Current output)</p>																																																																																																																																																																																																																																																																																																																																																																																																																																							
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## ORDERING INFORMATION

Pressure transmitter

TPSA



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

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

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

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

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
<b>B04U</b>	0..4	<b>P06D</b>	0..60
<b>B05U</b>	0..5	<b>P75U</b>	0..75
<b>B06U</b>	0..6	<b>P01C</b>	0..100
<b>B07U</b>	0..7	<b>P15D</b>	0..150
<b>B01D</b>	0..10	<b>P25D</b>	0..250
<b>B16U</b>	0..16	<b>P03C</b>	0..300
<b>B02D</b>	0..20	<b>P05C</b>	0..500
<b>B25U</b>	0..25	<b>P75D</b>	0..750
<b>B03D</b>	0..30	<b>P15C</b>	0..1500
<b>B04D</b>	0..40	<b>P02M</b>	0..2000
<b>B05D</b>	0..50	<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>P75D</b>	0..750
<b>B25D</b>	0..250	<b>P15C</b>	0..1500
<b>B35D</b>	0..350	<b>P20C</b>	0..2000
<b>B04C</b>	0..400	<b>P25C</b>	0..2500
<b>B05C</b>	0..500	<b>P03M</b>	0..3000
<b>B06C</b>	0..600	<b>P05M</b>	0..5000
<b>B07C</b>	0..700	<b>P75C</b>	0..7500
<b>B01M</b>	0..1000	<b>P10M</b>	0..10000
		<b>P15M</b>	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](http://www.gefran.com)