



Main Features

- Ranges: from 0...50 bar to 0...1000 bar (0...750psi to 0...1500psi)
- Accuracy: $\pm 0.1\%$ FSO 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 the extensimetric measurement principle with strain gauges on metal base. 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)	$\pm 0,1\%$ FSO typical; $\pm 0,15\%$ FSO max $\geq 100\text{bar}/1500\text{psi}$ $\pm 0,15\%$ FSO typical; $\pm 0,25\%$ FSO 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 INOX 17-4PH Stainless Steel	
Body materials	Stainless Steel INOX AISI 304 and Nylon 66GF35V0	
Power supply	C/N/Q 18...32Vdc B/M/P/R 12...32Vdc	E 10...30Vdc
Supply sensitivity	$< 0,0015\%$ FSO/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	$< 0,1\%$ FSO/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)	$\pm 0,008\%$ FSO/ $^{\circ}\text{C}$ typical ($\pm 0,015\%$ FSO/ $^{\circ}\text{C}$ max.)	
Response time (10...90%FSO)	$< 1 \text{ msec.}$	
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 68-2-6	
Vibrations	20 g max a 15-2000Hz msec. according to IEC68-2-6	
Ingress protection	IP65/IP66/IP67	
Output short circuit and reverse polarity protection	YES	

FSO = Full Scale Output

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

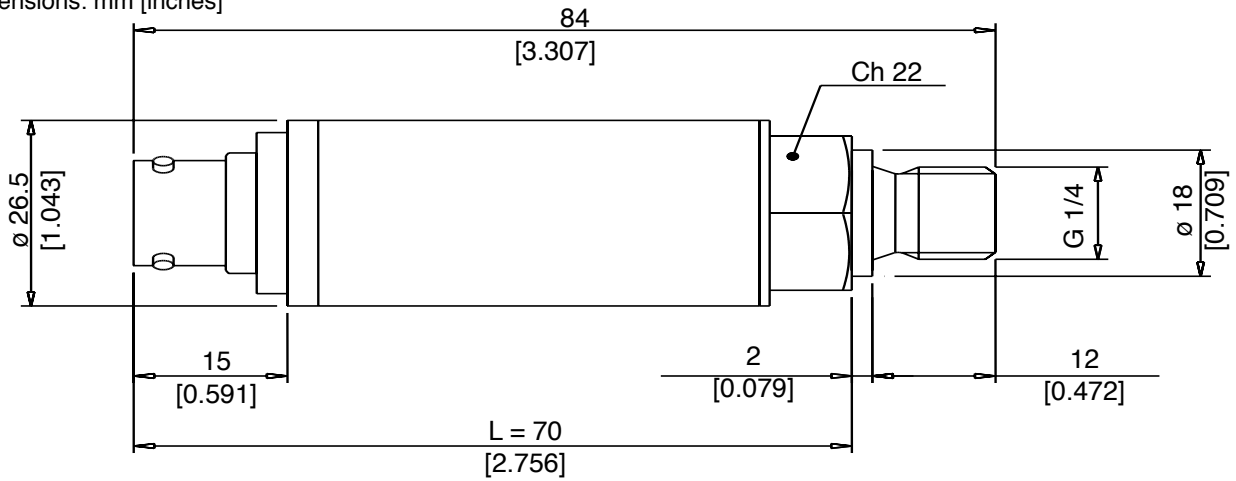
2 tested for more than 1000 strokes with single duration $< 2\text{msec.}$

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

MEASUREMENT RANGE (Bar)	50	100	160	200	250	350	400	500	600	700	1000
Overpressure	150	300	480	600	750	1050	1200	1500	1800	2000	2000
Burst test	250	500	800	1000	1250	1750	2000	2500	2500	2500	2500

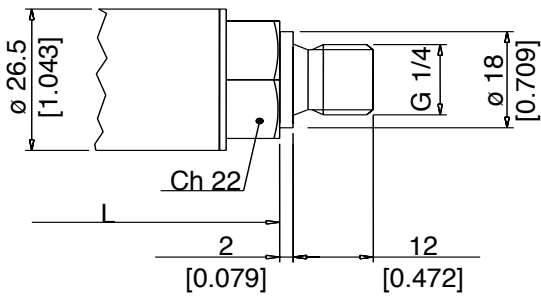
INSTALLATION DRAWINGS

Dimensions: mm [inches]

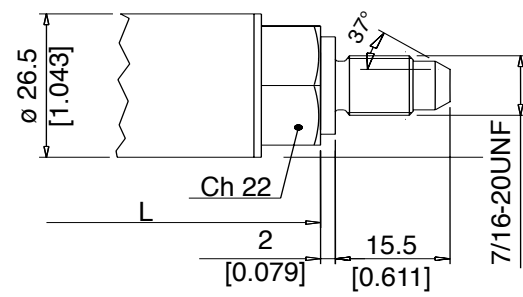


PRESSURE CONNECTION

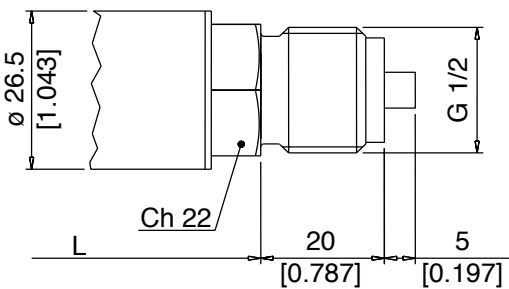
(1) G 1/4 MALE (DIN 3852-A)



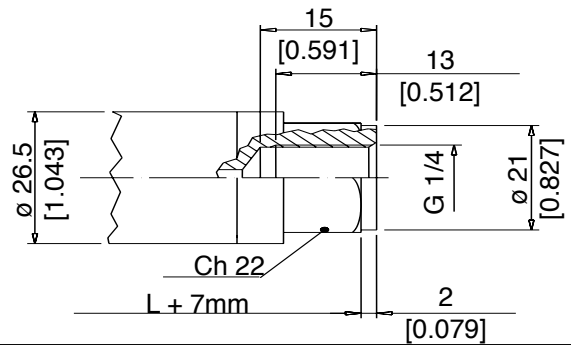
(2) SAE 04 AS4395 - E



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

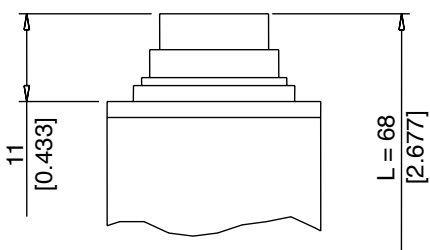


(4) G 1/4 FEMALE

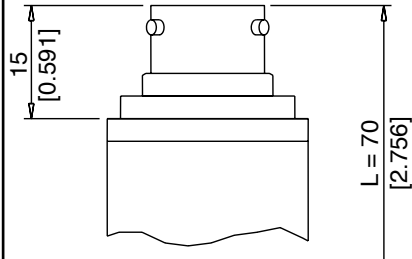


ELECTRICAL CONNECTION

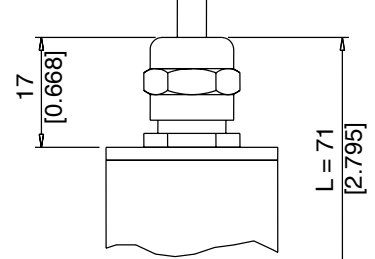
P - 7 pole connector



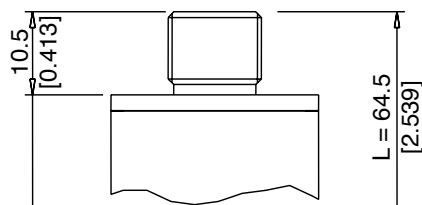
V - 6 pole connector



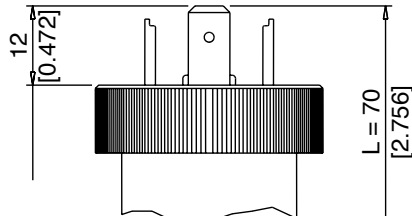
F - 2/4 pole cable



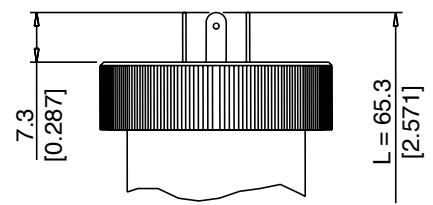
Z - 4 pole connector
M12 x 1



E - 4 pole connector
solenoid

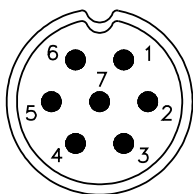


M - 4 pole connector
microsolenoid



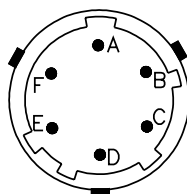
ELECTRICAL CONNECTION - Connectors

P - 7-pole connector



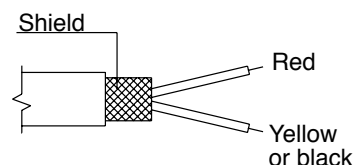
Male connector 09-127-09-07
Protection IP67

V - 6-pole connector



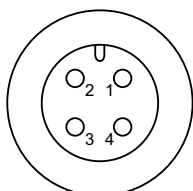
Male connector VPT02A10-6PT2
Protection IP66

F - 2 pole cable



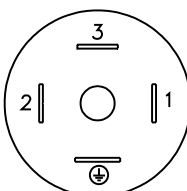
Shielded cable 2x0.25 - 2m. (output E)
Protection IP65

Z - 4 pole male connector M12 x 1



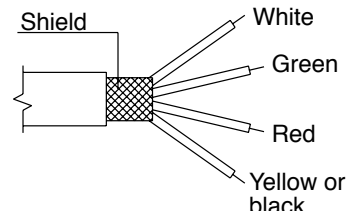
4 pole series 713 male connector
Protection IP67

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



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

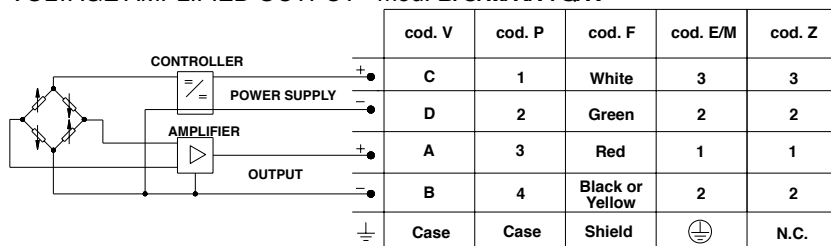
F - 4 pole cable



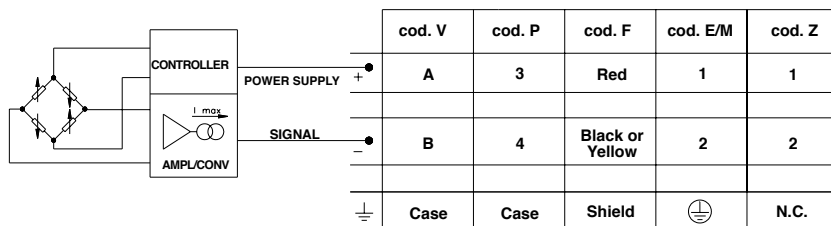
Shielded cable 4x0.25 - 2m
Protection IP65

ELECTRICAL CONNECTION - connection diagrams

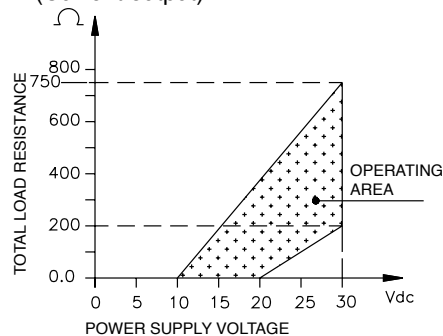
VOLTAGE AMPLIFIED OUTPUT - mod. B/C/M/N/P/Q/R



CURRENT AMPLIFIED OUTPUT - mod. E



LOAD DIAGRAM (Current output)



ACCESSORIES ON REQUEST

Connectors Plugs

Connection E

3 poles connector + ground DIN43650A ISO4400 **CON 006**
Prot. IP65

Connection Z

4 poles connector **CON 293**
Prot. IP67

Connection M

3 poles connector + ground DIN43650C ISO4400 **CON 008**
Prot. IP65

Connection P

7 poles female cable connector Prot. IP67 **CON 321**

Connection V

6 poles female cable connector Prot. IP66 **CON 300**

EXTENSION CABLES

6-pin connector with 8m (25ft) cable **C08WLS**

6-pin connector with 15m (50ft) cable **C15WLS**

6-pin connector with 30m (100ft) cable **C30WLS**

Other lengths **consult factory**

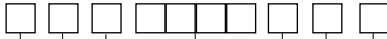
Cable color code

Connector	Wire
A	Red
B	Yellow/Black
C	White
D	Green
E	Blue
F	Orange

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	
4-pole connector solenoid	E
Shielded cable	F
4-pole connector M12 x 1	Z
4-pole connector microsolenoid	M
7 pole connector	P
6 pole 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% FSO typical
≥100bar/1500psi
±0,15% FSO typical
<100bar/1500psi

MEASUREMENT RANGE

	bar		psi
B05D	0..50	P75D	0..750
B01C	0..100	P15C	0..1500
B16D	0..160	P20C	0..2000
B02C	0..200	P25C	0..2500
B25D	0..250	P03M	0..3000
B35D	0..350	P05M	0..5000
B04C	0..400	P75C	0..7500
B05C	0..500	P10M	0..10000
B06C	0..600	P15M	0..15000
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: 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% FSO 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

GEFRAN spa
via Sebina, 74
25050 PROVAGLIO D'ISEO (BS) - ITALIA
tel. 0309888.1 - fax. 0309839063
Internet: <http://www.gefran.com>

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