

TPS

PRESSURE TRANSDUCER



Main features

- Ranges: from 0...10 bar to 0...1000 bar (0...150psi to 0...15000psi)
- Accuracy: $\pm 0.15\%$ FSO typical
- Protection rating: IP65/IP67
- Wetted parts 17-4PH
- Temperature range $-40...+105^{\circ}\text{C}$

Series TPS transducers are based on the extensimetric measurement principle with strain gauges on metal base. An innovative mechanical structure makes the transducer completely insensitive to tightening during installation. This transducer is suitable for all those applications where in addition to ruggedness and reliability high accuracy is required.

TECHNICAL DATA

Accuracy (1)	$\pm 0.15\%$ FSO typical; $\pm 0.2\%$ FSO max $>200\text{bar}/3000\text{psi}$ $\pm 0.25\%$ FSO typical; $\pm 0.5\%$ FSO max $\leq 200\text{bar}/3000\text{psi}$
Resolution	Infinite
Overpressure (without degrading performance) (2)	See table
Pressure containment (Burst test) (3)	See table
Wetted parts	Fluid compatible with INOX 17-4PH Stainless Steel
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	$> 1000\ \text{K}\Omega$
Insulation resistance	$> 1000\ \text{M}\Omega @ 50\text{Volt}$
Zero offset and span setting	$\pm 0.5\%$ FSO
Output voltage (sensitivity)	10...40bar / 150...500psi 1.5mV/V 50...60bar / 750...1000psi 2mV/V 100...1000bar / 1500...15000psi 3mV/V
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	$-20...+85^{\circ}\text{C}$ ($-4...+185^{\circ}\text{F}$)
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.)
Mounting position effects	Negligible
Humidity	Up to 100% RH non condensing
Weight	130 gr. nominal
Mechanical shock	100 g / 1 msec. according to IEC 68-2-6
Vibrations	20 g max @ 15-2000Hz according to IEC68-2-6
Ingress protection	IP65/IP66/IP67

FSO = Full Scale Output

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

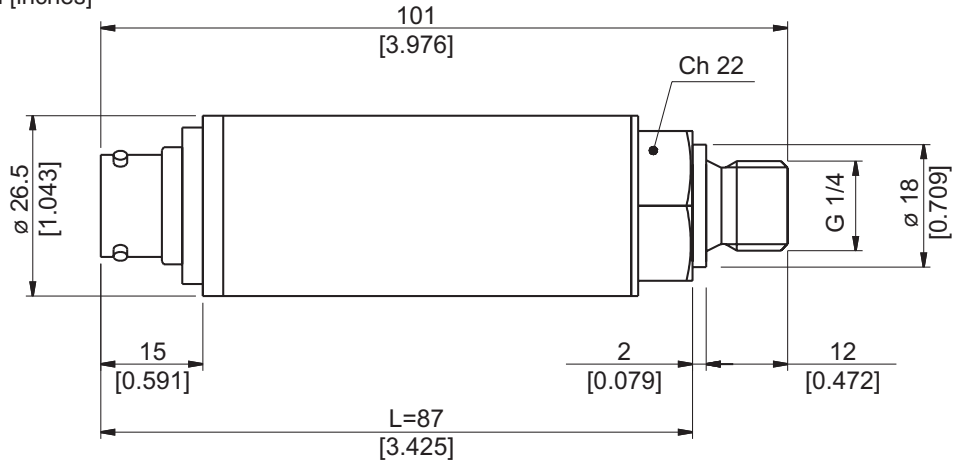
2 tested for more than 1000 strokes with single duration $< 2\text{msec}$.

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

MEASUR. RANGE (Bar)	10	16	20	25	30	35	40	50	60	100	160	200	250	350	400	500	600	700	1000
Overpressure	30	48	60	75	90	105	120	150	180	300	480	600	750	1050	1200	1500	1800	2000	2000
Burst test	50	80	100	125	150	175	200	250	280	500	800	1000	1250	1750	2000	2500	2500	2500	2500

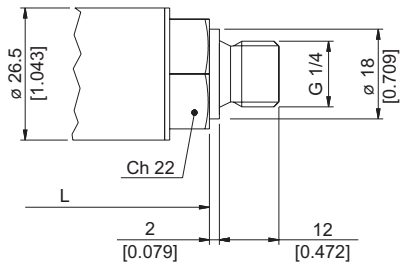
INSTALLATION DRAWINGS

Dimensions: mm [inches]

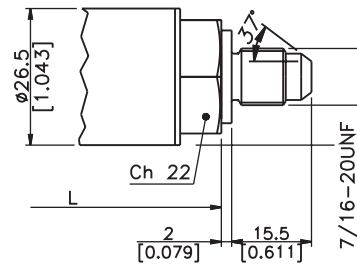


PRESSURE CONNECTION

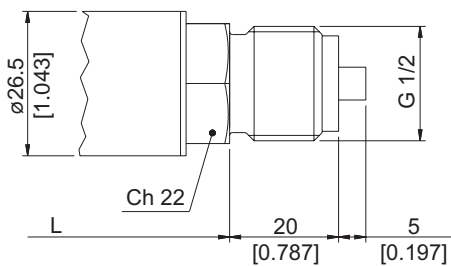
(1) G 1/4 MALE (DIN 3852-A)



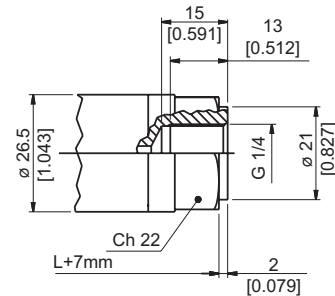
(2) SAE 04 AS4395 - E



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

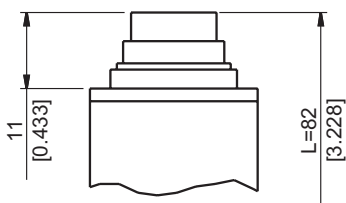


(4) G 1/4 FEMALE

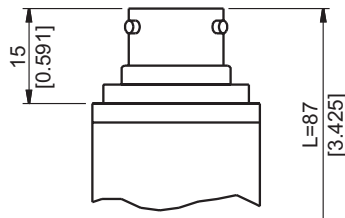


ELECTRICAL CONNECTION

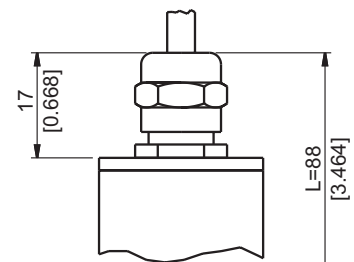
P - 7 pole connector



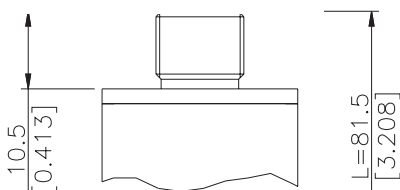
V - 6 pole connector



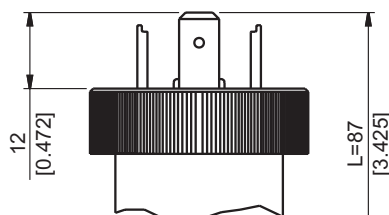
F - 6 pole cable



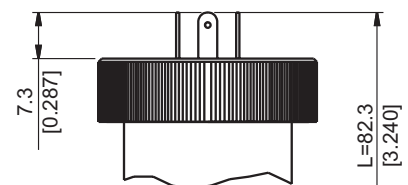
Z - 4 pole connector
M12 x 1



E - 4 pole connector
solenoid

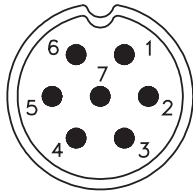


M - 4 pole connector
microsolenoid



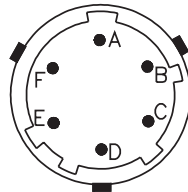
ELECTRICAL CONNECTION - Connectors

P - 7-pole connector



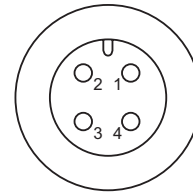
Male connector 09-127-09-07
Protection IP67

V - 6-pole connector



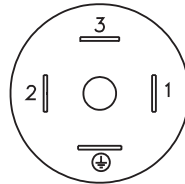
Male connector VPT02A10-6PT2
Protection IP66

Z - 4 pole M12 x 1 male connector



Male connector 4 pole series 713
Protection IP67

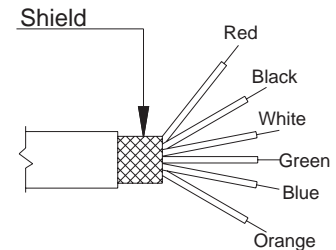
E - 4 pole solenoid connector M - 4 pole microsolenoid connector



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

Protection IP65
Protection IP65

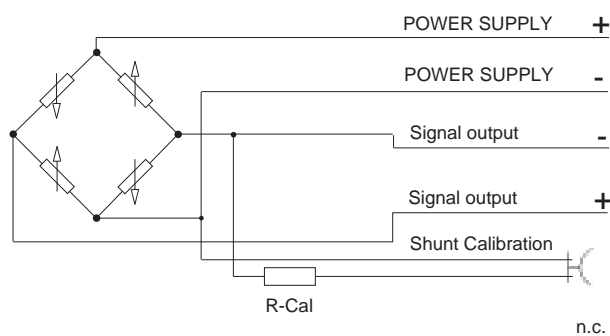
F - 6 pole cable



F - Shielded cable
6 x 0.25 - 1m.

ELECTRICAL CONNECTION - connection diagrams

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	Not available	Not available
	7			

Cable shield connected to
transducer body

ACCESSORIES ON REQUEST

Connectors plugs

Connection V

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

Connection P

7 poles female cable connector Prot. IP40 **CON 320**

7 poles female cable connector 90° Prot. IP40 **CON 322**

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

Connection E

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

Connection M

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

EXTENSION CABLES

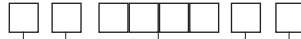
6-pin connector with 8m (25ft) cable	C08W
6-pin connector with 15m (50ft) cable	C15W
6-pin connector with 25m (75ft) cable	C25W
6-pin connector with 30m (100ft) cable	C30W
Other lengths	consult factory

Cable color code	
Conn.	wire
A	Red
B	Black
C	White
D	Green
E	Blue
F	Orange

ORDERING INFORMATION

Pressure transducer

TPS



PRESSURE CONNECTION	
Standard	
G 1/4 gas male	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 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	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.

ACCURACY

T	±0,15% FSO typical >200bar/3000psi ±0,25% FSO typical ≤200bar/3000psi
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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		
B03D	0..30		
B35U	0..35	P05C	0..500
B04D	0..40		
B05D	0..50	P75D	0..750
B06D	0..60	P01M	0..1000
B01C	0..100	P15C	0..1500
B16D	0..160	P02M	0..2000
B02C	0..200	P25C	0..2500
B25D	0..250	P03M	0..3000
B35D	0..350	P04M	0..4000
B04C	0..400	P05M	0..5000
B05C	0..500	P75C	0..7500
B06C	0..600		
B07C	0..700	P10M	0..10000
B01M	0..1000	P15M	0..15000

CALIBRATION STANDARDS

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

Ex.: **TPS - 4 - V - B07C - T**

Pressure transducer TPS with G 1/4 female process connection, 6 pole connector, 0...700 bar measurement range, ± 0.15% FSO accuracy.

cod. TPS - 01/06