

Pressure Transducers



Aero-Space Military Solutions
Submarine Underwater Solutions
Industrial Process Solutions
Satellite Systems Solutions



USART TECHNOLOGIES INDIA PVT LTD

UPT Series

PRESSURE TRANSDUCERS



Main features

- Ranges: from 0... to ...1000 bar (0... to ...15000psi)
- Accuracy: $\pm 0.15\%$ FSO typical
- Protection rating: IP65/IP67
- Wetted parts 17-4PH SS
- Temperature range -55...+125°C

Series UPT 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 >200bar/3000psi $\pm 0.25\%$ FSO typical; $\pm 0.5\%$ FSO max \leq 200bar/3000psi
Resolution	Infinite
Overpressure (without degrading performance)	See table
Pressure containment (Burst test)	See table
Wetted parts	Fluid compatible with INOX 17-4PH Stainless Steel
Body materials	304 L Stainless Steel
Power supply	10 (15V max) Vdc
Common mode voltage	Typical 5V @ 10V supply
Output impedance	350 Ω (± 1)
Load impedance	375 Ω
Insulation resistance	> 100 M Ω @ 50Volt
Zero offset and span setting	$\pm 0.25\%$ FSO
Output voltage (FSO)	10...40bar / 150...500psi 20 / 30mV/V 50...60bar / 750...1000psi 20 / 30mV/V 100...1000bar / 1500...15000psi 20 / 30mV/V
Long term stability	< 0.1% FSO per year
Operating temperature range (process)	-55...+125°C
Temperature effects over compensated range (zero-span)	$\pm 0.01\%$ FSO/°C typical ($\pm 0.02\%$ FSO/°C max.)
Mounting position effects	Negligible
Humidity	Up to 95% RH non condensing
Weight	63.5 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

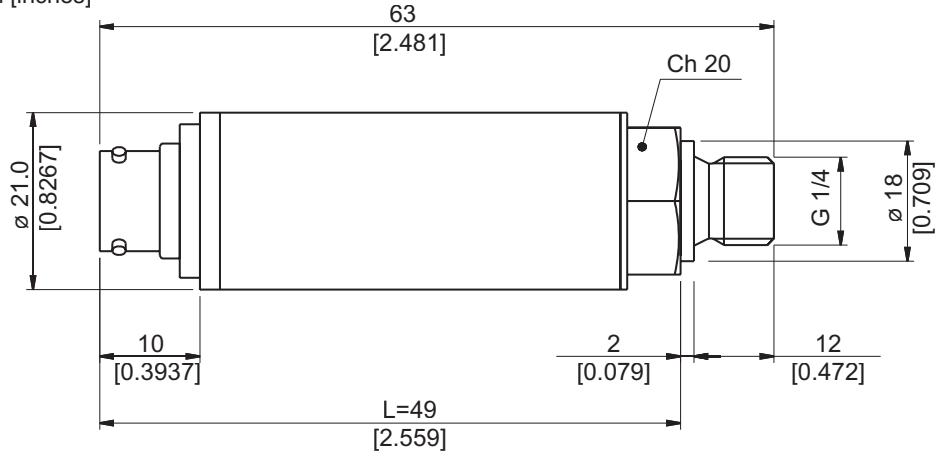
FSO = Full Scale Output

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

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

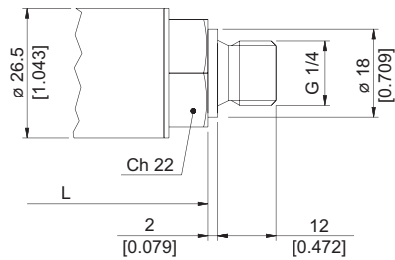
INSTALLATION DRAWINGS

Dimensions: mm [inches]

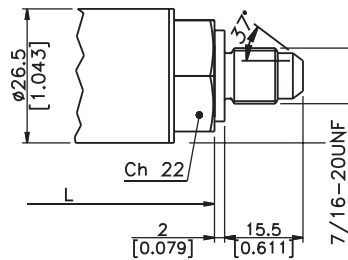


PRESSURE CONNECTION

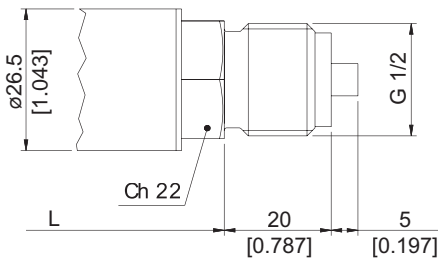
(1) G 1/4 MALE (DIN 3852-A)



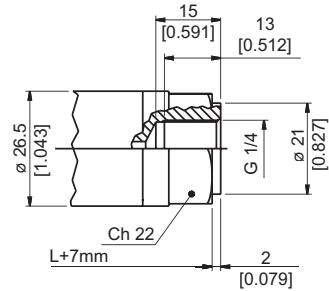
(2) SAE 04 AS4395 - E



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

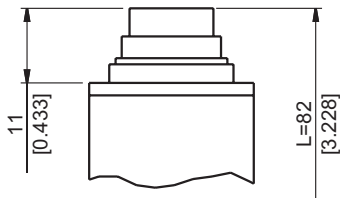


(4) G 1/4 FEMALE

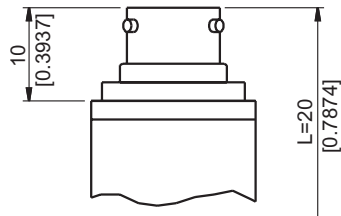


ELECTRICAL CONNECTION

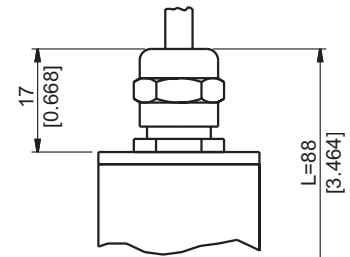
P - 7 pole connector



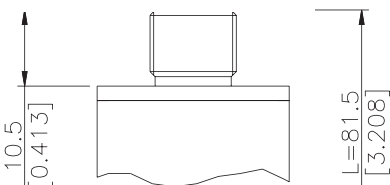
V - 6 pole connector



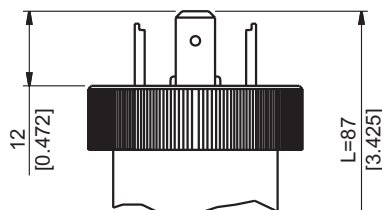
F - 6 pole cable



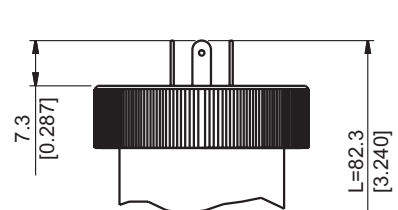
**Z - 4 pole connector
M12 x 1**



**E - 4 pole connector
solenoid**

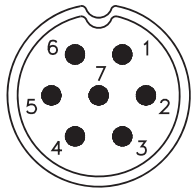


**M - 4 pole connector
microsolenoid**



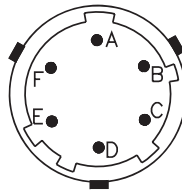
ELECTRICAL CONNECTION - Connectors

P - 7-pole connector



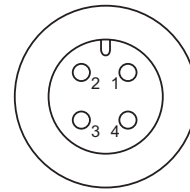
Male connector 09-RSM5150-3-9PN

V - 6-pole connector



Male connector FDBA53H 10-6PNK-A5819

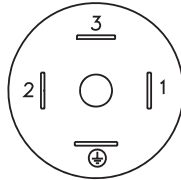
Z - 4 pole M12 x 1 male connector



Male connector 4 pole series 713

E - 4 pole solenoid connector

M - 4 pole microsolenoid connector



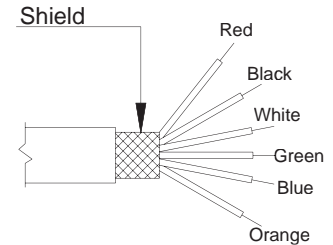
Solenoid DIN 43650A - ISO4400

Microsolenoid DIN 43650C - ISO4400

Protection IP65

Protection IP65

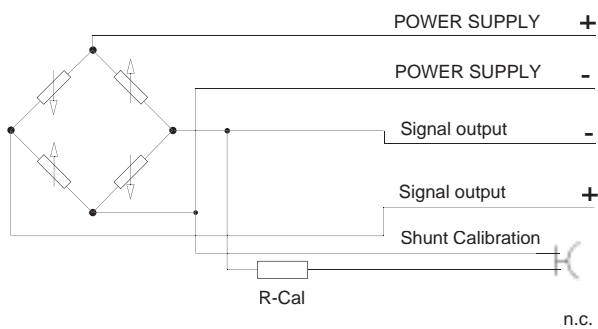
F - 6 pole cable



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 USART

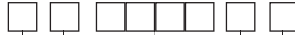
Cable color code

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

ORDERING INFORMATION

Pressure transducer

UPT



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.: **UPT - 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.



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