

EB100

High Accuracy Miniature Pressure Transducer

SPECIFICATIONS

- ♦ Ranges from 20 to 350 bar (300 to 5,000 psi)
- ♦ Unique pressure reference version Absolute
- ♦ Operating temperature up to 125 °C (257 °F)
- ♦ Combined errors of linearity, hysteresis & repeatability $\pm 0.25\%$
- ♦ 0.5 to 4.5V amplified output

The **EB100** pressure transducer is the smallest design proposed by TE Connectivity from the UltraStable line. It sets a new price / performance standard for demanding commercial and heavy industrial applications where high accuracy, small size and low weight are desirable. This series is suitable for measurement of liquid or gas pressure, including difficult media such as contaminated water, steam, and mildly corrosive fluids.

The **EB100** uses TE's UltraStable technology that provides stability over a wide temperature range and performance previously available only in much higher priced sensors. The UltraStable technology employs a silicon-based strain gage, isolated from the media by an oil-filled capsule and a stainless steel diaphragm. The high stability offers excellent repeatability and minimal hysteresis.

The 100% stainless steel media isolation covers all but the most corrosive environments, offering excellent durability. Custom OEM designs are available including various ports and output options.

On request, Instruction documents can be provided to ease the selection and use of our sensors and provide helpful tips.

FEATURES

- ♦ Miniature Design and Light Weight
- ♦ $\pm 1\%$ Total Error Band
- ♦ Available male threads such as :
M5x0.8
10-32 UNF
M8x1
5/16-24 UNF

APPLICATIONS

- ♦ Motor Sport: Oil, Coolant, Fuel, Brake Systems
- ♦ Hydraulic/Pneumatic Systems
- ♦ Automotive Test Stands
- ♦ Military/Aerospace Test Stands

STANDARD RANGES

Ranges (FS)		Pressure Reference	Pressure Overload	Burst Pressure
bar	psi	abs. (type3)	(rated pressure)	(rated pressure)
20	300	♦	2 x FS	3 x FS
35	500	♦	2 x FS	3 x FS
70	1K	♦	2 x FS	3 x FS
100	1.5K	♦	2 x FS	3 x FS
200	3K	♦	2 x FS	3 x FS
350	5K	♦	2 x FS	3 x FS

PERFORMANCE SPECIFICATIONS (typical values at temperature 23±3°C)

PARAMETERS	VALUES	NOTES
Combined Non-Linearity, Hysteresis, and Repeatability	±0.25 %FS	1
Long Term Stability (1 year)	±0.1 %FS	
Total Error Band (TEB over CTR)	±1 %FS	2
Bandwidth (-3 dB)	120 Hz	
Isolation resistance @50V _{DC}	50 MΩ	
Compensated Temperature Range (CTR)	-20 to +125 °C (-4 to +257 F)	
Operating Temperature Range (OTR)	-40 to +125 °C (-40 to +257 F)	
Storage Temperature	-40 to +125 °C (-40 to +257 F)	
Vibration (20 to 200Hz)	20 g	3
Shock (11ms)	50 g	4
Pressure Cycles (Zero to Full Scale)	1 Million	
Weight (without cable)	15 grams +21 grams per meter of cable	
Ingress Protection	IP66	
Media Compatibility	Fluids compatible with 17-4PH, 316 S.S. and FKM Fluoroelastomer	

Notes

1. Best fit straight line for all pressure ranges except for 200 bar (3 kpsi) = +/-0.35% and 350 bar (5 kpsi) = +/-0.5%.
2. TEB includes all accuracy errors, thermal errors, span and zero tolerances.
3. Per MIL-STD-810C, Procedure 514.2, Figure 514.2-2, Curve L.
4. 1/2 sine per MIL-STD 202F Method 213B condition A.

CE compliance

IEC 55022 Emissions Class A & B

IEC 61000-4-2 Electrostatic Discharge Immunity (2kV contact/2kV air)

IEC 61000-4-3 EM Field Immunity (3V/m)

IEC 61000-4-4 Electrical Fast Transient Immunity (0.5kV)

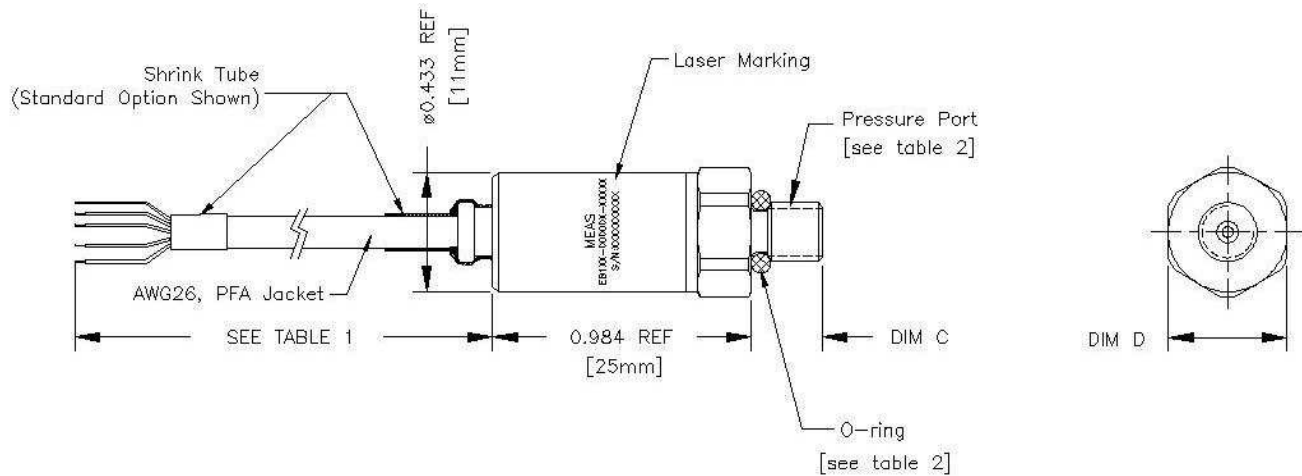
IEC 61000-4-6 Conducted Immunity (3V)

SUPPLY VOLTAGE			ELECTRICAL CONNECTION OPTIONS (table 1)	
Code	Supply voltage	Signal	Code	Connection
U	8 to 30 V (current < 5 mA)	0.5 – 4.5 V	M	1 metre of shielded cable (PFA)
			P	5 metres of shielded cable (PFA)
			R	10 metres of shielded cable (PFA)
			S	1 metre of shielded cable (PFA) fully covered by shrink tube model Raychem DR25 or equivalent

DIMENSIONS

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PHYSICAL (table 2)

Model	Pressure port	Length "C"	Hex. "D"	O-ring supplied	Installation torque max
N	M5x0.8	6.6 (.26")	11 (.433")	Ø3.5x1.5 FKM Fluoroelastomer	1 Nm (9 In-Pounds)
V	10-32 UNF-2A	6.6 (.26")	11 (.433")	Ø3.5x1.5 FKM Fluoroelastomer	1 Nm (9 In-Pounds)
S	M8x1	7.6 (.30")	11 (.433")	Ø6.07x1.63 FKM Fluoroelastomer	3 Nm (27 In-Pounds)
Q	5/16-24 UNF-2A	7.6 (.30")	11 (.433")	Ø6.07x1.63 FKM Fluoroelastomer	3 Nm (27 In-Pounds)
P	M10x1	8.2 (.32")	13 (.512")	Ø7.65x1.63 FKM Fluoroelastomer	5 Nm (27 In-Pounds)
X	3/8-24 UNF-2A	8.2 (.32")	13 (.512")	Ø7.65x1.63 FKM Fluoroelastomer	5 Nm (27 In-Pounds)

INSTALLATION & CONNECTION

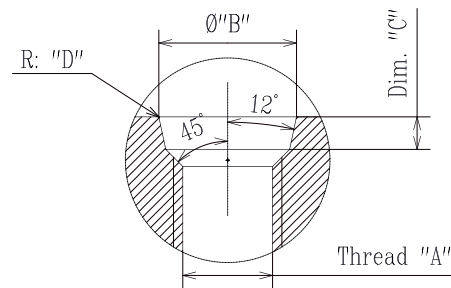
RECOMMENDED PRESSURE FITTING DESIGN⁽¹⁾

Thread "A"	Dim. "B"	Dim. "C"	Dim. "D"
M5x0.8 ⁽²⁾	6.35 mm	1.5 mm	0.2 mm
10-32 UNF ⁽²⁾	0.25"	0.059"	0.008"
M8x1	9.1 mm	1.9 mm	0.3 mm
5/16-24 UNF-2A	0.358"	0.074"	0.012"
M10x1	10.7 mm	1.9 mm	0.3 mm
3/8-24 UNF-2A	0.421"	0.074"	0.012"

1. Tolerances on dimensions = ± 0.05 mm (0.002")

This pressure fitting design is only a recommendation but it stays under customer's responsibility.

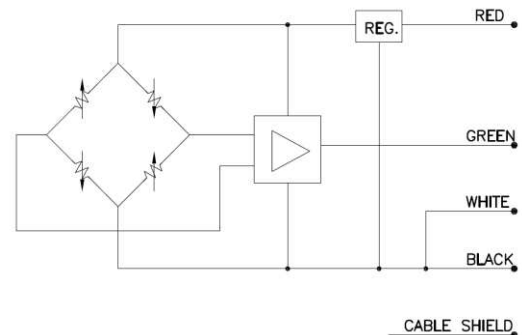
2. For model M5x0.8 or 10-32 UNF used with pressure higher than 200 bar (3k psi) it is recommended to replace O-ring by bonded ring (ref: MSE05417) and to design the pressure fitting without O-ring chamber.



WIRING: SHIELDED CABLE 4 LEADS AWG26

RED	+SUPPLY
GREEN	+OUTPUT
WHITE	-OUTPUT
BLACK	-SUPPLY

The shield is not connected to sensor's body.



ORDERING INFORMATION

EB1 U M – 0000 1 P – 300P A

Output		
Code	Supply Voltage	Output
U	8 – 30V	0.5 – 4.5V

Connection	
Code	Connection
M	1 meter Cable
P	5 meter cable
R	10 meter cable
S¹	1 meter Cable

¹ Fully covered by Shrink tube
Raychem DR25 or equivalent

Calibration Certification	
Code	Calibration Certification
0	No Calibration Certificate
1	With Calibration Certificate

Pressure Range	
psi std	Bar std
300P	020B
500P	035B
01KP	070B
1K5P	100B
03KP	200B
05KP	350B

Pressure Port	
Code	Port
S	M8x1 Ø6.07x1.63 Viton O-ring
Q	5/16-24 UNF Ø6.07x1.63 Viton O-ring
N	M5x0.8 Ø3.5x1.5 Viton O-ring
V	10-32 UNF Male Ø7.06x1.63 Viton O-ring
P	M10x1 Male Ø7.65x1.63 Viton O-ring
X	3/8-24UNF Male Ø7.65x1.63 Viton O-ring

The **psi** range models are only supplied with imperial thread design.
The **bar** range models are only supplied with metric thread design

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