

FEATURES

- Liquid and gas media compatible with Stainless Steel
- Variety of available pressure ports
- Variety of connector and cable outputs
- IP66 rating for absolute pressure reference

APPLICATIONS

- Motorsports
- Downhole Exploration
- Off-Road Vehicles
- Pipeline pressure

EPRB-2

Miniature Pressure Transducer

SPECIFICATIONS

- Ranges from 0.6 to 700 bar (10 to 10,000 PSI)
- Gauge and absolute pressure references
- Operating temperature up to 150 °C (300 °F)
- Variety of pressure ports
- 0.5 to 4.5V or 4-20mA amplified output

EPRB-2 is an ultra-miniature pressure transducer of 100% stainless steel welded construction. It is designed for severe environments where minimum size and light weight are required.

Multiple interfaces such as pressure ports and electrical outputs, connection thru cables or connectors have been designed to offer a wide range of adaptability to customer's standards.

EPRB-2 models have amplified output, either 5V_{DC} regulated or 8-30V_{DC} or 4-20 mA for use on vehicle, military, test equipment or on a test bench.

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

STANDARD RANGES

| PRESSURE RANGES (FS) | | REFERENCE PRESSURE | | PROOF PRESSURE | BURST PRESSURE |
|----------------------|------|--------------------|--------------|------------------|------------------|
| bar | psi | gage* (type1) | abs. (type3) | (rated pressure) | (rated pressure) |
| 0.6 | 10 | • | • | 3 x FS | 5 x FS |
| 1 | 15 | • | • | 3 x FS | 5 x FS |
| 2 | 30 | • | • | 3 x FS | 5 x FS |
| 3.5 | 50 | • | • | 2 x FS | 3 x FS |
| 6 | 100 | • | • | 2 x FS | 3 x FS |
| 10 | 150 | • | • | 2 x FS | 3 x FS |
| 20 | 300 | • | • | 2 x FS | 3 x FS |
| 35 | 500 | • | • | 2 x FS | 3 x FS |
| 60 | 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 |
| 700 | 10K | • | • | 1.5 x FS | 2 x FS |

* Gage model (type 1) is vented to atmosphere through one hole into sensor housing (sensor to be used into dry and clean environment)

PERFORMANCE SPECIFICATIONS (typical values at temperature 23°C)

| PARAMETERS | VALUES | NOTES |
|--|---|---|
| Signal & Supply Voltage | Code I5 : 4 to 20mA (tolerances ± 0.2 mA) Code U3 : 0.5 to 4.5 V (tolerances ± 50 mV) Code U6 : 0 to 5 V (tolerances ± 50 mV) Code R3 : 0.5 to 4.5 V (tolerances ± 50 mV) | Supply 10 to 30 V _{DC} Supply 8 to 32 V _{DC} Supply 8 to 32 V _{DC} Supply 5 V _{DC} regulated |
| Max Current | < 10 mA | NA for model I5 (4 to 20 mA) |
| Non-Repeatability | $\pm 0.05\%$ FS | |
| Combined Non-Linearity & Hysteresis | $\pm 0.25\%$ FS | |
| Long term stability | Zero Offset = 0.1% FS/year Sensitivity = 0.1% /year | |
| Bandwidth (-3 dB) | 400 Hz | |
| Thermal Zero Shift "TZS" in CTR | $\pm 0.5\%$ FSO /50° C ($\pm 1\%$ FSO/50° C for ranges ≤ 1 bar or 15 psi) | |
| Thermal Sensitivity Shift "TSS" in CTR | $\pm 0.5\%$ /50° C ($\pm 0.75\%$ /50° C for ranges ≤ 1 bar or 15 psi) | |
| Operating Temperature Range (OTR) | - 40° C to 150° C (-40° C to 120° C for model I5 : 4-20 mA) | |
| Compensated Temperature Range (CTR) | 0° C to 100° C | |
| Zero Offset | Code U3/R3 = 0.5V \pm 50mV (0.5V \pm 100mV for ranges ≤ 1 bar or 15 psi) Code I5 = 4 mA \pm 0.2 mA (4 mA \pm 0.4 mA for ranges ≤ 1 bar or 15 psi) Code U6 = \pm 50mV (\pm 100mV for ranges ≤ 1 bar or 15 psi) | |
| Vibration | 2g (10Hz to 60Hz) and 20g (60Hz to 1 KHz) | |
| Shock (1/2 sine) | 50g (11 ms) and 200g (6 ms) | |
| Weight (without cable) | 20 g for model U3 + 25 g per meter of cable | |
| Ingress Protection | IP66 | IP40 for Gage (type 1) |

CE compliance

EN55022 Emissions Class A & B

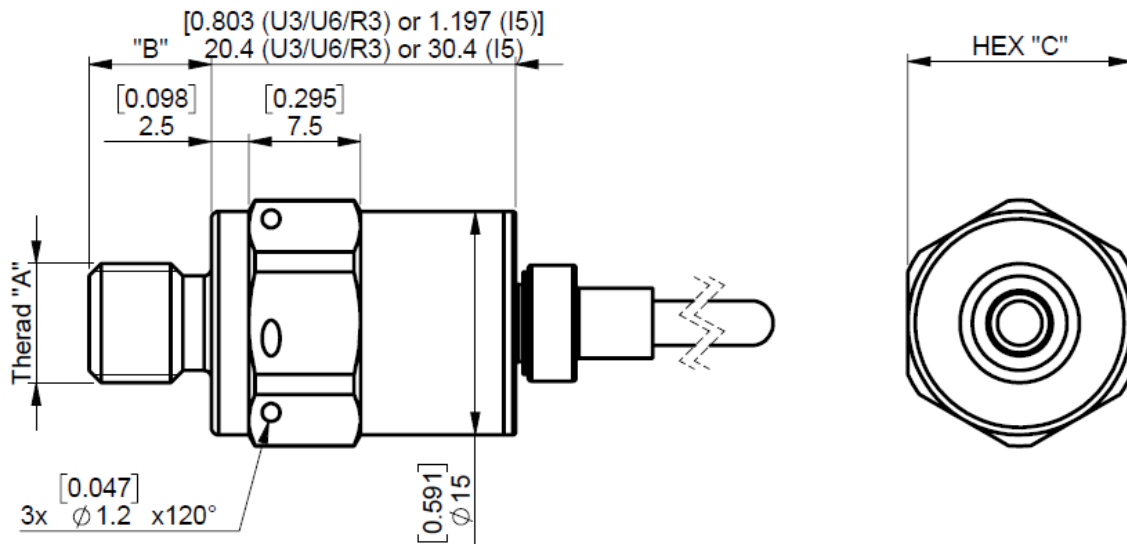
IEC61000-4-2 Electrostatic Discharge Immunity (1kV contact)

IEC61000-4-3 EM Field Immunity (3V/m)

IEC61000-4-4 Electrical Fast Transient Immunity (1kV)

DIMENSIONS

STANDARD EPRB-2 WITH SHIELDED CABLE OUTPUT (standard length = 1m)



| MODEL | THREAD "A" | THREAD LENGTH "B" | HEX. "C" | O-RING SUPPLIED | INSTALLATION TORQUE |
|-------|-----------------|-------------------|---------------|---------------------------------|---------------------|
| N | M5X0.8 | 8.2 (.323") | 15 mm (.590") | Ø3.5x1.5 FKM Fluoroelastomer* | 1 Nm (2 Nm max.) |
| V | 10-32 UNF-2A | 8.2 (.323") | 15 mm (.590") | Ø3.5x1.5 FKM Fluoroelastomer* | 1 Nm (2 Nm max.) |
| S | M8X1 | 8.2 (.323") | 15 mm (.590") | Ø6.07x1.78 FKM Fluoroelastomer* | 2.5 Nm (5 Nm max.) |
| Q | 5/16"-24 UNF-2A | 8.2 (.323") | 15 mm (.590") | Ø6.07x1.78 FKM Fluoroelastomer* | 2.5 Nm (5 Nm max.) |
| P | M10X1 | 8.2 (.323") | 15 mm (.590") | Ø7.65x1.63 FKM Fluoroelastomer* | 3 Nm (6 Nm max.) |
| X | 3/8"-24 UNF-2A | 8.2 (.323") | 15 mm (.590") | Ø7.65x1.63 FKM Fluoroelastomer* | 3 Nm (6 Nm max.) |
| Z | 7/16"-20 UNF-2A | 8.2 (.323") | 18 mm (.71") | Ø8.92x1.83 FKM Fluoroelastomer* | 5 Nm (10 Nm max.) |
| W | G 1/4A (BSP) | 11.7 (.460") | 18 mm (.71") | Not Supplied | 5 Nm (10 Nm max.) |
| Y | 1/4"-18 NPT | 14 (.551") | 18 mm (.71") | Not Supplied | 5 Nm (10 Nm max.) |
| E | AS4395E02 | | | per AS4395 | |
| F | AS4395E04 | | | per AS4395 | |

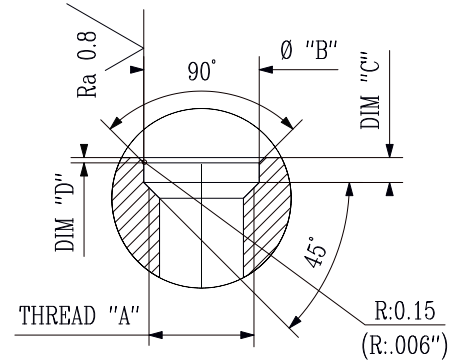
* Temperature -20 to 120°C. Consult factory for other material.

INSTALLATION

RECOMMENDED MOUNTING PORT

| Thread "A" | Dim. "B" | Dim. "C" | Dim. "D" |
|--------------|----------|----------|----------|
| M5X0.8 | 5.6 mm | 1.5 mm | 0.2 mm |
| 10-32 UNF | 0.22" | 0.06" | 0.01" |
| M8x1 | 8.8 mm | 1.9 mm | 0.4 mm |
| 5/16-24 UNF | 0.35" | 0.075" | 0.015" |
| M10x1 | 10.4 mm | 2.0 mm | 0.4 mm |
| 3/8"-24 UNF | 0.41" | 0.077" | 0.015" |
| 7/16"-20 UNF | 0.48" | 0.086" | 0.015" |

Tolerances on dimensions = ± 0.05 mm (0.002")



WIRING AND CONNECTOR OUTPUT OPTIONS

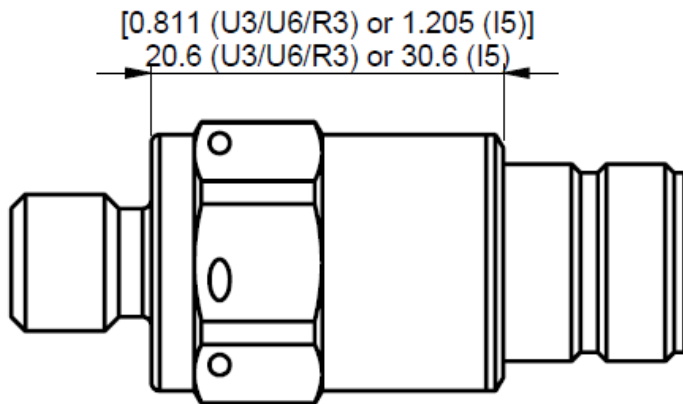
Standard cable output: shielded cable (4 x AWG26)

- ➔ Cable shield not connected to housing for model **U3/U6/R3**
- ➔ Cable shield connected to housing for model **I5**

| Wire color | Models U3/U6/R3 | Model I5 |
|------------|-----------------|---------------------|
| Red | +SUPPLY | +SUPPLY |
| Black | -SUPPLY | -SUPPLY |
| Green | +OUTPUT | reserved to factory |
| White | -OUTPUT | reserved to factory |

Option **CM1**: integral connector Deutsch **DCS 11 T 8-7 PN** (recommended for Mil-Aero applications)

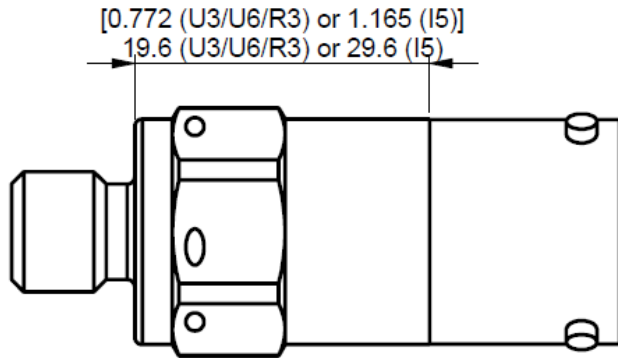
- ➔ Mating connector **DCS 07 D 8-7 SN RD** **not supplied**.



| CM1 | Model U3/U6/R3 | Model I5 |
|-----|-------------------|---------------------|
| 1 | -SUPPLY | -SUPPLY |
| 2 | not used | not used |
| 3 | common with pin 1 | not used |
| 4 | +OUTPUT | reserved to factory |
| 5 | -OUTPUT | reserved to factory |
| 6 | not used | not used |
| 7 | +SUPPLY | +SUPPLY |

Option **CM2**: integral connector **MIL-C 26482 MS3113H10-6P** (limited to operating temperature 125°C)

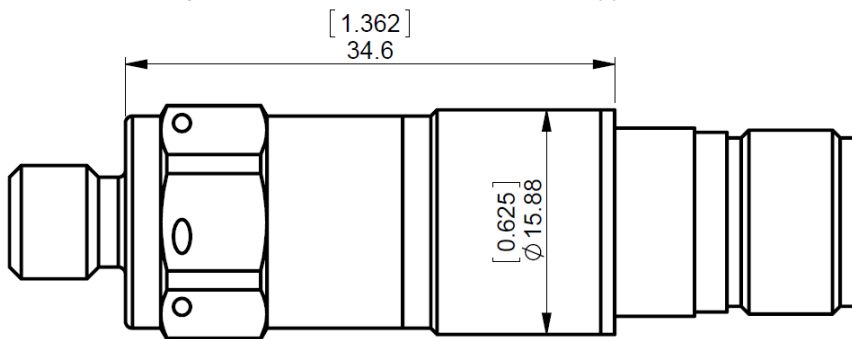
→ Mating connector **MS3116J10-6S** **not supplied**. To order mating connector with wired shielded cable 4 leads AWG26, use the reference ECS-CM2-/LxxM by replacing xx by length in meter (1m, 3m, 5m or 10m available).



| CM2 | Model U3/U6/R3 | Model I5 |
|-----|----------------|---------------------|
| A | +SUPPLY | +SUPPLY |
| B | +OUTPUT | reserved to factory |
| C | -OUTPUT | reserved to factory |
| D | -SUPPLY | -SUPPLY |
| E | not used | not used |
| F | not used | not used |

Option **CM3**: integral connector **805-006-03Z18-4CA**

→ Mating connector **805-001-16M8-4SA** **not supplied**.



| CM3 | Model U3/U6/R3 | Model I5 |
|-----|----------------|---------------------|
| 1 | +SUPPLY | +SUPPLY |
| 2 | +OUTPUT | reserved to factory |
| 3 | -OUTPUT | reserved to factory |
| 4 | -SUPPLY | -SUPPLY |

OPTIONS

| OPTIONS | CODES | DESCRIPTIONS |
|--|-------------------------|--|
| Compensated Temperature Ranges | Z1 Z35 | -20° C to 40° C +20° C to 120° C (TZS = ±4% FSO/100°C for FS ≤ 1 bar or 15 psi) |
| Special Cable Length (standard = 1 m) | L00M | Replace "00" with total length in meters (L3M ; L5M ; L10M...) |
| Integral connector | CMx | See drawings on pages 4 & 5 |
| Acceptance Test Report | ATR | A complete Acceptance Test Report provided with transducer |

ORDERING INFORMATION

EPRB-2 – X U6 3 – 500P – /Z1/CM2

| Pressure Port | |
|---------------|-----------------|
| N | M5x0.8 |
| V | 10-32 UNF |
| S | M8x1 |
| Q | 5/16-24 UNF |
| P | M10x1 |
| X | 3/8-24 UNF |
| W | G1/4A |
| Y | 1/4-18 NPT |
| Z | 7/16"-20 UNF-2A |
| E | AS4395E02 |
| F | AS4395E04 |

| Output Signal | | |
|---------------|-------------------------|-------------------------|
| Code | Output | Supply Voltage |
| I5 | 4 – 20 mA | 10 – 30 V _{DC} |
| U3 | 0.5 – 4.5 V | 8 – 32 V _{DC} |
| U6 | 0 – 5 V | 8 – 32V _{DC} |
| R3 | 0.5 – 4.5 V ratiometric | 5 V _{DC} reg. |

| Pressure Reference | |
|--------------------|----------|
| 1 | Gage |
| 3 | Absolute |

| Options |
|---------|
| /Z1 |
| /Z35 |
| L00M |
| /CM1 |
| /CM2 |
| /CM3 |
| /ATR |

| Pressure Range | |
|----------------|-------|
| 0.6B | 10P |
| 1B | 15P |
| 2B | 30P |
| 3.5B | 50P |
| 6B | 100P |
| 10B | 150P |
| 20B | 300P |
| 35B | 500P |
| 60B | 1KP |
| 100B | 1.5KP |
| 200B | 3KP |
| 350B | 5KP |
| 700B | 10KP |

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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