



## FEATURES

- CE Compliance
- Reverse Polarity Protection on Input
- Short Circuit Protection on Output
- $\pm 0.25\%$  Accuracy within compensation temperature
- $\pm 1.0\%$  Total Error Band within compensation temperature
- $\pm 0.25\%$  of Rdg  $\pm 1$  count for display accuracy
- Compact Outline
- $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  Operating Temperature
- IP67 Weatherproof
- Continuous display rotation

## APPLICATIONS

- Food & Beverage systems
- Pharmaceutical & Medical systems
- Pumps and Compressors
- Hydraulic/Pneumatic Systems

## M5800

### Pressure Transducer with Rotatable Display

## SPECIFICATIONS

- Wide Temperature Range
- Compact
- Variety of Pressure Ports and customized Electrical Configurations
- Optional Stainless Steel Snubber
- CE Compliant and Weatherproof
- Gage, Compound
- Continuous pressure display with zero setting

Difficulty reading pressure measurements in awkward spaces throughout your process can compromise your operational efficiency. TE's M5800 digital display transducer offers visualized pressure value readings for demanding, harsh applications. The  $310^{\circ}$  rotatable display enables easy viewing and on-demand adjustment.

Offering precise measurements at a superior value, this sensor can be easily configured based on your specific requirements including pressure range, pressure fitting, analog output, and electrical connection. Its display zero tare feature enables the local user to precisely set the display to zero and offers a more precise pressure measurement and true control of your processes.

## M5800

Pressure Transducer With Rotatable Display

### STANDARD RANGES

| Range (psi) | Range (Bar) | Gage | Compound |
|-------------|-------------|------|----------|
| 0 to 050    | 0 to 3.5    | •    | •        |
| 0 to 100    | 0 to 007    | •    | •        |
|             | 0 to 010    | •    | •        |
| 0 to 200    |             | •    | •        |
| 0 to 300    | 0 to 020    | •    | •        |
| 0 to 500    | 0 to 035    | •    | •        |
| 0 to 01k    | 0 to 070    | •    | •        |
| 0 to 03k    | 0 to 200    | •    | •        |
| 0 to 05k    | 0 to 350    | •    | •        |
| 0 to 07k    | 0 to 500    | •    | •        |
| 0 to 10k    | 0 to 700    | •    | •        |
| 0 to 15k    | 0 to 01k    | •    | •        |

Intermediate pressure ranges available upon request

## PERFORMANCE SPECIFICATIONS

Ambient Temperature: 25°C (unless otherwise specified)

| PARAMETERS                                                          | MIN                                                                    | TYP                             | MAX     | UNITS       | NOTES                        |
|---------------------------------------------------------------------|------------------------------------------------------------------------|---------------------------------|---------|-------------|------------------------------|
| Accuracy<br>(combined non-linearity, hysteresis, and repeatability) | -0.25                                                                  |                                 | 0.25    | %F.S. BFS   |                              |
| Isolation, Body to any Lead                                         | 100                                                                    |                                 |         | MΩ          | @500V <sub>DC</sub>          |
| Dielectric Strength                                                 |                                                                        |                                 | 2       | mA          | @500V <sub>AC</sub> , 1min   |
| Pressure Cycles                                                     | 1.00E+6                                                                |                                 |         | 0~FS Cycles |                              |
| Proof Pressure                                                      | 2X                                                                     |                                 |         | Rated       |                              |
| Burst Pressure                                                      | 5X                                                                     |                                 | 20k psi | Rated       |                              |
| Long Term Stability (1 year)                                        | -0.25                                                                  |                                 | 0.25    | %F.S.       |                              |
| Total Error Band (17-4PH, all range)                                | -1.0                                                                   |                                 | 1.0     | %F.S.       |                              |
| Total Error Band (316L, ≤3k psi)                                    | -1.5                                                                   |                                 | 1.5     | %F.S.       | Over Compensated Temperature |
| Total Error Band (316L, >3k psi)                                    | -2.0                                                                   |                                 | 2.0     | %F.S.       |                              |
| Compensated Temperature (CT)                                        | -20                                                                    |                                 | +85     | °C          |                              |
| Operating Temperature                                               | -40                                                                    |                                 | +85     | °C          |                              |
| Storage Temperature                                                 | -40                                                                    |                                 | +90     | °C          |                              |
| Load Resistance (R <sub>L</sub> )                                   |                                                                        | R <sub>L</sub> > 100k           |         | Ω           | Voltage Output               |
| Load Resistance (R <sub>L</sub> )                                   |                                                                        | < (Supply Voltage -12V) / 0.02A |         | Ω           | Current Output               |
| Current Consumption                                                 |                                                                        |                                 | 30      | mA          | Voltage Output               |
| Rise Time (10% to 90%)                                              | <2ms (Voltage Output); <3ms (Current Output); Without Snubber          |                                 |         |             |                              |
| Wetted Material                                                     | 17-4PH or 316L Stainless Steel Port, 316L Stainless Steel Snubber      |                                 |         |             |                              |
| Gage Pressure Reference Vent                                        | VIA Cable                                                              |                                 |         |             |                              |
| Bandwidth                                                           | DC to 1KHz (Typical)                                                   |                                 |         |             |                              |
| Shock                                                               | 50g, 11msec Half Sine Shock per MIL-STD-202G, Method 213B, Condition A |                                 |         |             |                              |
| Vibration                                                           | ±20g, MIL-STD-810C, Procedure 514.2, Fig 514.2-2, Curve L              |                                 |         |             |                              |

For custom configurations, consult factory.

### Notes

1. Compensated Temperature: The temperature range over which the product will produce an output proportional to pressure within the specified performance limits.
2. Operating Temperature: The temperature range over which the product will produce an output proportional to pressure but may not remain within the specified performance limits.
3. Storage Temperature: The temperature range over which the product can be stored safely in occasions without pressure applied or power input and remains rated performance. Beyond this temperature range may cause permanent damage to the product.
4. All configurations are built with supply voltage reverse and output short-circuit protections.
5. For all CE compliance tests, MAX allowed output deviation is ±1.5% F.S.
6. IP rating: IP67

### CE Compliance

EN 55022 Emissions Class A & B

IEC 61000-4-2 Electrostatic Discharge Immunity (4kV contact/8kV air)

IEC 61000-4-3 Radiated, Radio-Frequency Electromagnetic Field Immunity (10V/m, 80M-1GHz)

IEC 61000-4-4 Electrical Fast Transient Immunity (1kV)

IEC 61000-4-5 Surge Immunity (V+ to V-: ±1KV/42Ω; L to Case: ±1KV/42Ω; V- to V<sub>0</sub>: ±1KV/42Ω)

IEC 61000-4-6 Immunity to Conducted Disturbances Induced by Radio Frequency Fields (150K~80MHz, 3V level)

For all CE compliance tests, max allowed output deviation ±1.5 %F.S.

## DISPLAY SPECIFICATION

|                                                |                                                                                                                                                                                                         |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Digits Display                                 | Within range: -XXX to XXXX<br>Overload(>110%FS): OP                                                                                                                                                     |
| Type                                           | 7 Segment Blue LED                                                                                                                                                                                      |
| Polarity                                       | Automatic (-) Display                                                                                                                                                                                   |
| Display Accuracy (excluding transducer output) | +/-0.25% of Rdg +/- 1 Count                                                                                                                                                                             |
| Character Size                                 | 0.24" height                                                                                                                                                                                            |
| Display Rotation Range                         | Continuous 310°                                                                                                                                                                                         |
| Zero Setting                                   | Push down zero button for 5 seconds at ambient pressure.<br>Disabled if output exceeds 3%FS (5% for FS ≤100PSI or 7BAR<br>Safety warning: Display is for reference only since its zero can be adjusted. |

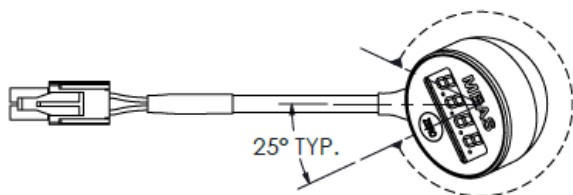
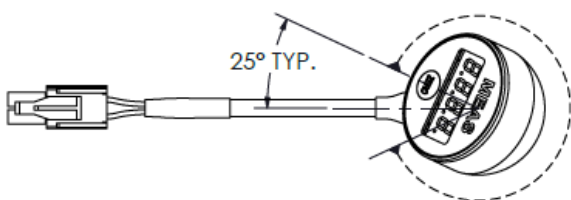
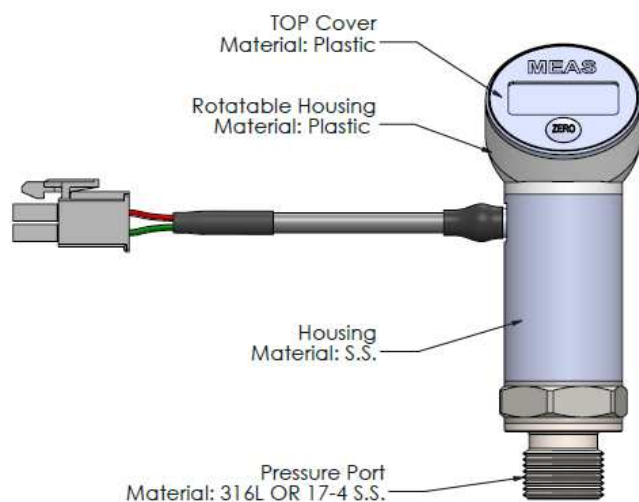
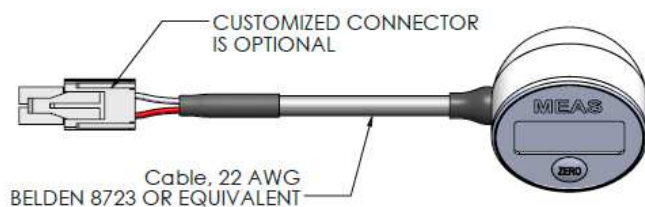
## DISPLAY DIGITAL RESOLUTION

| PRESSURE UNIT | PRESSURE RANGE | DISPLAY DIGIT | DECIMAL PLACE | NEGATIVE PRESSURE | EXAMPLE                   |
|---------------|----------------|---------------|---------------|-------------------|---------------------------|
| PSI           | 050 to 99.9    | 3             | 1             | Shows "-"         | 01.0~99.9, -13.7,         |
|               | 100 to 999     | 3             | NA            | Shows "-"         | 101~999, -013             |
| KPSI          | 01 to 9.999    | 4             | NA            | Shows "-"         | 1000~9999, -013           |
|               | 10 to 15       | 4             | 2             | NA                | 10.00 - 15.00             |
| BAR           | 3.5B to 01K    | 4             | 1             | Shows "-"         | 003.5~700.0, -000.1, 1000 |

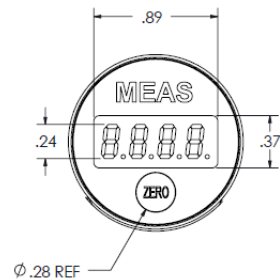
# M5800

Pressure Transducer With Rotatable Display

## DIMENSIONS



DISPLAY ROTATION RANGE IS ABOUT 310°

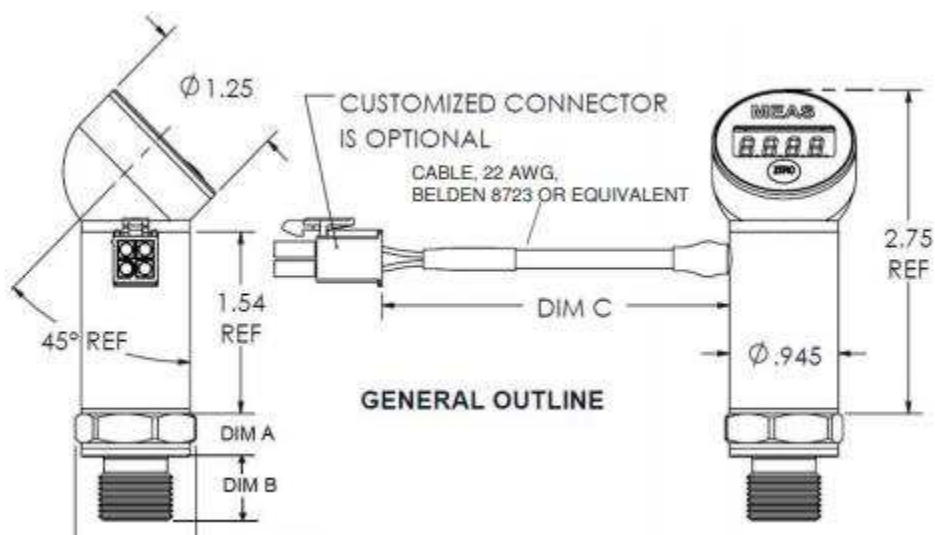


| CODE | DIM C                                                                       |
|------|-----------------------------------------------------------------------------|
| 1    | CABLE 2 FT                                                                  |
| E    | CABLE 3 FT                                                                  |
| 2    | CABLE 4 FT                                                                  |
| 3    | CABLE 10 FT                                                                 |
| M    | CABLE 1 M                                                                   |
| N    | CABLE 2 M                                                                   |
| P    | CABLE 5 M                                                                   |
| R    | CABLE 10 M                                                                  |
| X    | Cable special Length with customized connector (must fit 22 AWG size cable) |

\*Dimensions are in inches unless otherwise specified

## PRESSURE PORTS

| CODE | PORT                                                                              | DIM B         | DIM A REF.    | Recommended Torque (Nm) |
|------|-----------------------------------------------------------------------------------|---------------|---------------|-------------------------|
| 2    | 1/4-19 BSPP                                                                       | 0.547 [13.0]  | 0.366 [9.3]   | 30~35                   |
| 3    | G3/8 JIS B2351                                                                    | 0.615 [15.6]  | 0.366 [9.3]   | 35~40                   |
| 4    | 7/16-20UNF MALE SAE J1926-2<br>STRAIGHT THREAD O-RING<br>BUNA-N 90SH-904          | 0.508 [12.9]  | 0.366 [9.3]   | 18~20                   |
| 5    | 1/4-18 NPT                                                                        | 0.600 [15.24] | 0.366 [9.3]   | 2~3 TFFT                |
| 6    | 1/8-27 NPT                                                                        | 0.390 [9.9]   | 0.366 [9.3]   | 2~3 TFFT                |
| B    | G1/4 JIS B2351                                                                    | 0.472 [11.94] | 0.366 [9.3]   | 30~35                   |
| E    | 1/4-19 BSPT                                                                       | 0.500 [12.7]  | 0.366 [9.3]   | 2~3 TFFT                |
| F    | 1/4-19 BSPP FEMALE<br>(without snubber)                                           | 0.621 [15.77] | 0.366 [9.3]   | 30~35                   |
| P    | 7/16-20UNF FEMALE SAE J513<br>STRAIGHT THREAD WITH<br>INTEGRAL VALVE<br>DEPRESSOR | 0.430 [10.92] | 0.444 [11.28] | 15~16                   |
| N    | 7/16-20UNF FEMALE SAE J513<br>STRAIGHT THREAD                                     | 0.430 [10.92] | 0.444 [11.28] | 15~16                   |
| Q    | M10 x 1.0 mm ISO 6149-2                                                           | 0.449 [11.4]  | 0.366 [9.3]   | 15~16                   |
| S    | M12 x 1.5 mm ISO 6149-2                                                           | 0.531 [13.5]  | 0.366 [9.3]   | 25~30                   |
| U    | G/14 DIN 3852 FORM E<br>GASKET DIN3869-14 NBR                                     | 0.519 [13.2]  | 0.445 [11.3]  | 30~35                   |
| W    | M20 x 1.5 mm ISO 6149-2                                                           | 0.551 [14.0]  | 0.441 [11.2]  | 40~45                   |
| G    | M14 x 1.5 mm ISO 6149-2                                                           | 0.531 [13.5]  | 0.366 [9.3]   | 25~30                   |



## WIRING

### CURRENT OUTPUT WIRING

| +SUPPLY | -SUPPLY | GROUND     |
|---------|---------|------------|
| RED     | BLK     | DRAIN WIRE |

### VOLTAGE OUTPUT WIRING

| +SUPPLY | +OUTPUT | COMMON | GROUND     |
|---------|---------|--------|------------|
| RED     | WHT     | BLK    | DRAIN WIRE |

## OUTPUTS

| CODE | OUTPUT SIGNAL | SUPPLY VOLTAGE |
|------|---------------|----------------|
| 4    | 1 TO 5 V      | 8~30 V         |
| 5    | 4 TO 20 mA    | 12~30 V        |
| 6    | 0 TO 5 V      | 8~30 V         |
| 7    | 0 TO 10 V     | 12~30 V        |
| 8    | 1 TO 6 V      | 8~30 V         |
| 9    | 0.5 TO 4.5 V  | 8~30 V         |

## ORDERING INFORMATION

M58 6 1 - 1 0 00 1 2 - 100P G

| Output |               |
|--------|---------------|
| Code   | Output Signal |
| 4      | 1 to 5V       |
| 5      | 4 to 20mA     |
| 6      | 0 to 5V       |
| 7      | 0 to 10V      |
| 8      | 1 to 6V       |
| 9      | 0.5 to 4.5V   |

| Cable Length |            |
|--------------|------------|
| Code         | Dim C      |
| 1            | Cable 2ft  |
| E            | Cable 3ft  |
| 2            | Cable 4ft  |
| 3            | Cable 10ft |
| M            | Cable 1m   |
| N            | Cable 2m   |
| P            | Cable 5m   |
| R            | Cable 10m  |

| Port Material |                        |
|---------------|------------------------|
| Code          | Description            |
| 0             | 17-4PH Stainless Steel |
| 1             | 316L Stainless Steel   |

| Cleaning |                             |
|----------|-----------------------------|
| Code     | Description                 |
| 0        | No Selection                |
| 1        | Oxygen Clean B40.1 Level IV |
| 2        | With Snubber                |

| Label |                |
|-------|----------------|
| Code  | Label Type     |
| 0     | Adhesive Label |
| 1     | Laser Marking  |

| Pressure Reference |             |
|--------------------|-------------|
| Code               | Description |
| G                  | Gauge       |
| C                  | Compound    |

| Pressure Ranges |         |
|-----------------|---------|
| psi STD         | bar STD |
| 050P            | 3.5B    |
| 100P            | 007B    |
| 200P            | 010B    |
| 300P            | 020B    |
| 500P            | 035B    |
| 01KP            | 070B    |
| 03KP            | 200B    |
| 05KP            | 350B    |
| 10KP            | 700B    |
| 15KP            | 01KB    |

Compound Pressure Range is -14.7 to XXXpsig or -1 to XXXbarg, (e.g. 200PC: -14.7 to 200psig, 020BC: -1 to 20barg)

| Pressure Port Type |                                                                        |
|--------------------|------------------------------------------------------------------------|
| Code               | Port                                                                   |
| 2                  | 1/4-19 BSPP                                                            |
| 3                  | G3/8 JIS B2351                                                         |
| 4                  | 7/16-20 UNF Male SAE J1926-2 Straight Thread O-Ring Buna 90SH-904      |
| 5                  | 1/4-18 NPT                                                             |
| 6                  | 1/8-27 NPT                                                             |
| B                  | G1/4 JIS B2351                                                         |
| E                  | 1/4-19 BSPT                                                            |
| F                  | 1/4-19 BSPP Female                                                     |
| P                  | 7/16-20UNF Female SAE J513 Straight Thread w/ Integral Valve Depressor |
| N                  | 7/16-20UNF Female SAE J513 Straight Thread                             |
| Q                  | M10X1.0mm ISO 6149-2                                                   |
| S                  | M12X1.5mm ISO 6149-2                                                   |
| U                  | G1/4 DIN 3852 Form E Gasket DIN3869-14 NBR                             |
| W                  | M20X1.5mm ISO 6149-2                                                   |
| G                  | M14X1.5mm ISO 6149-2                                                   |

For installation instructions and recommended torque, please find the document under "RELATED MATERIALS" at the M5800 product website of te.com

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