

# AXIAL FORCE AND TORQUE (SWT) SERIES TRANSDUCERS

## FEATURES

- Measure both Force and Torque
- High Accuracy Both Bridges
- Low Crosstalk
- Low Creep
- 5pt T/C Axial & CW/CCW Torsion Calibration
- Proprietary Modulus Compensated Strain Gages



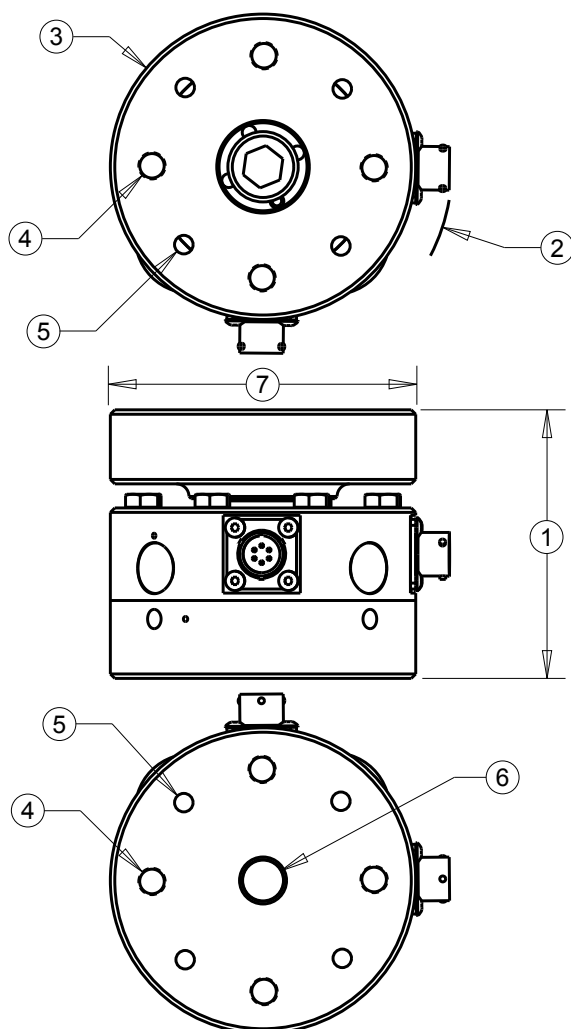
## SPECIFICATIONS

| Model<br><br>Capacity      U.S. lbf / lbf-in |  | SWT10                          |               | SWT10              |               | SWT20              |               | SWT30              |               |
|----------------------------------------------|--|--------------------------------|---------------|--------------------|---------------|--------------------|---------------|--------------------|---------------|
|                                              |  | 300/150, 500/250, 1K/500       |               | 2K/1K, 5K/2K       |               | 10K/3K             |               | 50K/25K            |               |
|                                              |  | Axial Force Bridge             | Torque Bridge | Axial Force Bridge | Torque Bridge | Axial Force Bridge | Torque Bridge | Axial Force Bridge | Torque Bridge |
| PARAMETERS                                   |  |                                |               |                    |               |                    |               |                    |               |
| ACCURACY                                     |  |                                |               |                    |               |                    |               |                    |               |
| Nonlinearity, % Rated Output                 |  | +/-0.040                       | +/-0.070      | +/-0.040           | +/-0.070      | +/-0.040           | +/-0.070      | +/-0.050           | +/-0.070      |
| Hysteresis, % Rated Output                   |  | +/-0.040                       | +/-0.050      | +/-0.045           | +/-0.050      | +/-0.050           | +/-0.050      | +/-0.050           | +/-0.050      |
| Nonrepeatability, % Rated Output             |  | +/-0.020                       | +/-0.050      | +/-0.020           | +/-0.050      | +/-0.020           | +/-0.050      | +/-0.020           | +/-0.050      |
| Creep, % in 20 minutes                       |  | +/-0.025                       | +/-0.025      | +/-0.025           | +/-0.025      | +/-0.025           | +/-0.025      | +/-0.025           | +/-0.025      |
| Zero Balance, % Rated Output                 |  | +/-2.0                         | +/-2.0        | +/-2.0             | +/-2.0        | +/-2.0             | +/-2.0        | +/-2.0             | +/-2.0        |
| TEMPERATURE                                  |  |                                |               |                    |               |                    |               |                    |               |
| Range, Compensated, °F                       |  | +15 to +115                    | +15 to +115   | +15 to +115        | +15 to +115   | +15 to +115        | +15 to +115   | +15 to +115        | +15 to +115   |
| Range, Compensated, °C                       |  | -10 to +45                     | -10 to +45    | -10 to +45         | -10 to +45    | -10 to +45         | -10 to +45    | -10 to +45         | -10 to +45    |
| Range, Operating, °F                         |  | -65 to +200                    | -65 to +200   | -65 to +200        | -65 to +200   | -65 to +200        | -65 to +200   | -65 to +200        | -65 to +200   |
| Range, Operating, °C                         |  | -55 to +90                     | -55 to +90    | -55 to +90         | -55 to +90    | -55 to +90         | -55 to +90    | -55 to +90         | -55 to +90    |
| Effect on Sensitivity, % Rdg/ °F             |  | +/-0.0008                      | +/-0.0008     | +/-0.0008          | +/-0.0008     | +/-0.0008          | +/-0.0008     | +/-0.0008          | +/-0.0008     |
| Effect on Sensitivity, % Rdg/ °C             |  | +/-0.0015                      | +/-0.0015     | +/-0.0015          | +/-0.0015     | +/-0.0015          | +/-0.0015     | +/-0.0015          | +/-0.0015     |
| Effect on Zero, % Rated Output/ °F           |  | +/-0.0015                      | +/-0.0015     | +/-0.0015          | +/-0.0015     | +/-0.0015          | +/-0.0015     | +/-0.0015          | +/-0.0015     |
| Effect on Zero, % Rated Output/ °C           |  | +/-0.0027                      | +/-0.0027     | +/-0.0027          | +/-0.0027     | +/-0.0027          | +/-0.0027     | +/-0.0027          | +/-0.0027     |
| ELECTRICAL                                   |  |                                |               |                    |               |                    |               |                    |               |
| Rated Output, mV/V, Nominal                  |  | 1.0                            | 1.5           | 2.0                | 2.5           | 2.0                | 1.0           | 2.0                | 1.0           |
| Excitation Voltage, VDC Maximum              |  | 20                             | 20            | 20                 | 20            | 20                 | 20            | 20                 | 20            |
| Input Resistance, Ohms                       |  | 350                            | 700           | 350                | 700           | 350                | 700           | 350                | 700           |
| Output Resistance, Ohms                      |  | 350                            | 700           | 350                | 700           | 350                | 700           | 350                | 700           |
| Insulation Resistance, Megohm                |  | 5000                           | 5000          | 5000               | 5000          | 5000               | 5000          | 5000               | 5000          |
| Bayonet Connector                            |  | PT02E-10-6P<br>(MS3112E-10-6P) |               |                    |               |                    |               |                    |               |
| MECHANICAL                                   |  |                                |               |                    |               |                    |               |                    |               |
| Safe Overload Range, % Capacity              |  | +/-150                         | +/-150        | +/-150             | +/-150        | +/-150             | +/-150        | +/-150             | +/-150        |
| Weight lb                                    |  | 4                              | 4             | 11                 | 11            | 32                 | 32            | 76                 | 76            |
| Flexure Material                             |  | Aluminum                       |               |                    |               | Steel              |               |                    |               |

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## DIMENSIONS

| Model      | SWT10                             | SWT10                             | SWT20                             | SWT30                             |
|------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| Capacity   | 300/150, 500/250,<br>1K/500       | 2K/1K, 5K/2K                      | 10K/3K                            | 50K/25K                           |
| Dimensions | inch                              | inch                              | inch                              | inch                              |
| 1.         | 3.63                              | 3.63                              | 4.70                              | 7.10                              |
| 2.         | R 2.5                             | R 2.5                             | R 3.5                             | R 4.5                             |
| 3.         | 4.12 Dia.                         | 4.12 Dia.                         | 6.06 Dia.                         | 8.00 Dia.                         |
| 4.         | 3/8 - 24<br>.66 Deep on 3.00 B.C. | 3/8 - 24<br>.66 Deep on 3.00 B.C. | 3/8 - 24<br>.66 Deep on 3.00 B.C. | 5/8 - 18<br>1.0 Deep on 5.50 B.C. |
| 5.         | 0.25 SF on 3.00 B.C.              | 0.25 SF on 3.00 B.C.              | 0.25 SF on 3.00 B.C.              | 0.50 SF on 5.50 B.C.              |
| 6.         | 5/8 -18<br>.95 Deep               | 5/8 -18<br>.95 Deep               | 5/8 -18<br>1.05 Deep              | 1 3/4 -12<br>1.75 Deep            |
| 7.         | 4.12 Dia.                         | 4.12 Dia.                         | 4.12 Dia.                         | 6.85 Dia.                         |



## OPTIONS

Additional bridges  
Output adjustment to standard  
Compression overload protection  
Integral cable  
Custom connectors  
Connector Protectors  
Alternate Capacities

## ACCESSORIES

Mating connector  
Loading fixtures  
Interconnect cable  
Shunt calibration resistor  
Instrumentation