

# HIGH CAPACITY FATIGUE RATED (FR) SERIES LOAD CELLS

## FEATURES

- First Choice for Fatigue Testing Applications
- Guaranteed for 100 Million Fully Reversed Cycles
- Low Height
- Guaranteed Maximum Off-Center Load and Moment Error
- Low Creep
- Low Susceptibility to Magnetic Fields
- Barometric Pressure Compensation
- 5pt Tension & Compression Calibration
- Proprietary Modulus Compensated Strain Gages



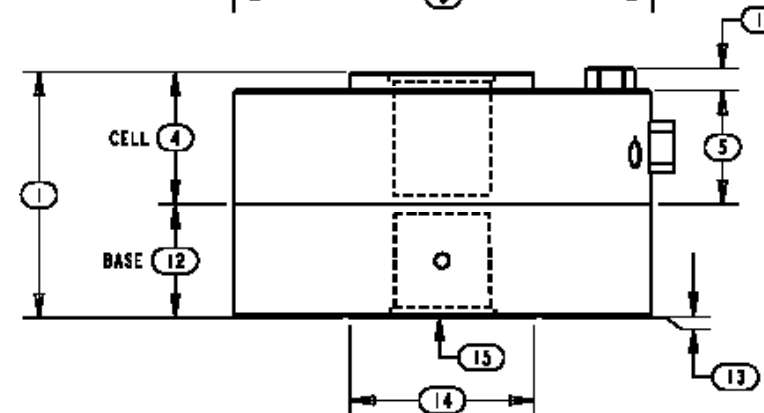
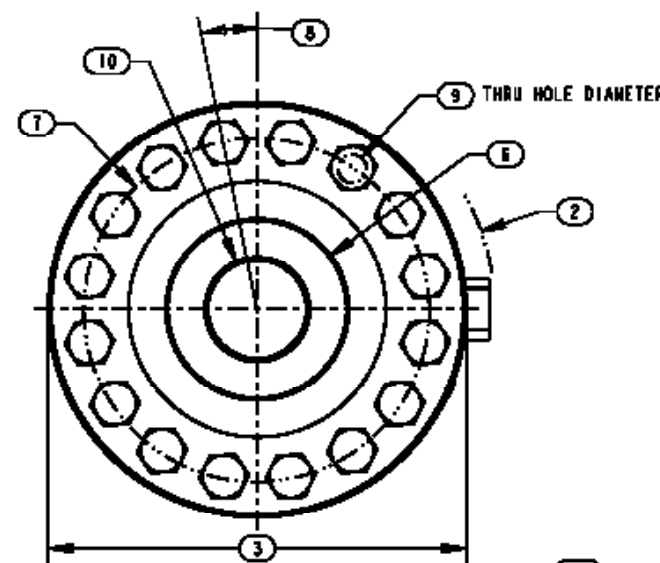
## SPECIFICATIONS

| Model                                 | FR40   | FR42        | FR45        | FR62        | FR80        |
|---------------------------------------|--|-------------|-------------|-------------|-------------|
| Capacity U.S. lbf.                    | 100K   | 135K        | 150K, 200K  | 250K, 300K  | 375K, 500K  |
| Capacity Metric kN                    | 500  | 600         | 700, 900    | 1100, 1350  | 1650, 2250  |
| <b>PARAMETERS</b>                     |  |             |             |             |             |
| <b>ACCURACY</b>                       |  |             |             |             |             |
| Static Error Band, % Rated Output     | +/-0.060                                       | +/-0.070    | +/-0.100    | +/-0.100    | +/-0.150    |
| Nonlinearity, % Rated Output          | +/-0.060                                       | +/-0.080    | +/-0.100    | +/-0.100    | +/-0.150    |
| Hysteresis, % Rated Output            | +/-0.060                                       | +/-0.080    | +/-0.100    | +/-0.100    | +/-0.150    |
| Nonrepeatability, % Rated Output      | +/-0.010                                       | +/-0.020    | +/-0.020    | +/-0.020    | +/-0.020    |
| Creep, % in 20 minutes                | +/-0.025                                       | +/-0.025    | +/-0.025    | +/-0.025    | +/-0.025    |
| Off-Center Load Sensitivity, %/inch   | +/-0.250                                       | +/-0.250    | +/-0.250    | +/-0.250    | +/-0.250    |
| Side Load Sensitivity, %              | +/-0.250                                       | +/-0.250    | +/-0.250    | +/-0.250    | +/-0.250    |
| Zero Balance, % Rated Output          | +/-1.0   | +/-1.0      | +/-1.0      | +/-1.0      | +/-1.0      |
| <b>TEMPERATURE</b>                    |  |             |             |             |             |
| Range, Compensated, °F                | +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  |
| Range, Operating, °F                  | -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  |
| Effect on Sensitivity, % Rdg/ °F      | +/-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   |
| Effect on Zero, % Rated Output/ °F    | +/-0.0008                                      | +/-0.0008   | +/-0.0008   | +/-0.0008   | +/-0.0008   |
| Effect on Zero, % Rated Output/ °C    | +/-0.0015                                      | +/-0.0015   | +/-0.0015   | +/-0.0015   | +/-0.0015   |
| <b>ELECTRICAL</b>                     |  |             |             |             |             |
| Rated Output, mV/V, Nominal           | 2  | 2           | 2           | 2           | 2           |
| Excitation Voltage, VDC Maximum       | 20   | 20          | 20          | 20          | 20          |
| Input Resistance, Ohms                | 350  | 350         | 350         | 350         | 350         |
| Output Resistance, Ohms               | 350  | 350         | 350         | 350         | 350         |
| Insulation Resistance, Megohm         | 5000   | 5000        | 5000        | 5000        | 5000        |
| Bayonet Connector                     | PT02E-10-6P (MS3112E-10-6P) Included Protector |             |             |             |             |
| <b>MECHANICAL</b>                     |  |             |             |             |             |
| Safe Overload Range, % Rated Capacity | +/-300   | +/-300      | +/-300      | +/-300      | +/-300      |
| Weight lb                             | 74   | 84          | 120         | 245         | 450         |
| Weight kg                             | 34   | 38          | 54          | 111         | 204         |
| Weight w/base lb                      | 146  | 156         | 250         | 448         | 1050        |
| Weight w/base kg                      | 66   | 71          | 113         | 203         | 476         |
| Flexure Material                      | Steel  | Steel       | Steel       | Steel       | Steel       |

# HIGH CAPACITY FATIGUE RATED (FR) SERIES LOAD CELLS

## DIMENSIONS

| Model      | FR40                  | FR40M                | FR42                  | FR42M                | FR45              | FR45M                 | FR62              | FR62M                 | FR80              | FR80M                  |
|------------|-----------------------|----------------------|-----------------------|----------------------|-------------------|-----------------------|-------------------|-----------------------|-------------------|------------------------|
| Capacity   | 100K lbf              | 500 kN               | 135K lbf              | 600 kN               | 150K, 200K lbf    | 700, 900 kN           | 250K, 300K lbf    | 1100, 1350 kN         | 375K, 500K lbf    | 1650, 2250 kN          |
| Dimensions | inch                  | mm                   | inch                  | mm                   | inch              | mm                    | inch              | mm                    | inch              | mm                     |
| 1.         | 6.50                  | 165.1                | 8.00                  | 203.2                | 8.75              | 222.3                 | 10.25             | 235                   | 13.00             | 330.2                  |
| 2.         | R 6.16                | R 156.5              | R 6.16                | R 156.5              | R 6.78            | 172.2                 | R 8.65            | R 219.7               | R 10.89           | R 276.6                |
| 3.         | 11.00                 | 279.4                | 11.00                 | 279.4                | 12.25             | 311.2                 | 16.00             | 406.4                 | 20.50             | 520.7                  |
| 4.         | 3.50                  | 88.9                 | 4.00                  | 101.6                | 4.50              | 114.3                 | 5.25              | 133.3                 | 6.50              | 165.1                  |
| 5.         | 3.00                  | 76.2                 | 3.50                  | 88.9                 | 4.25              | 108.0                 | 4.75              | 120.6                 | 6.25              | 158.7                  |
| 6.         | 4.81                  | 122.2                | 4.81                  | 122.2                | 6.13              | 155.7                 | 7.89              | 200.4                 | 9.86              | 250.4                  |
| 7.         | 9.00                  | 228.6                | 9.00                  | 228.6                | 10.11             | 256.9                 | 13.06             | 331.6                 | 16.50             | 419.1                  |
| 8.         | 11.25°                | 11.25°               | 11.25°                | 11.25°               | 9.0°              | 9.0°                  | 9.0°              | 9.0°                  | 6.4°              | 6.4°                   |
| 9.         | .78<br>16 Places      | 19.8<br>16 Places    | .78<br>16 Places      | 19.8<br>16 Places    | .78<br>20 Places  | 19.8<br>20 Places     | 1.18<br>20 Places | 30.0<br>20 Places     | 1.06<br>28 Places | 26.9<br>28 Places      |
| 10.        | 2 3/4- 8<br>3.2 Deep  | M72 x 2<br>81.3 Deep | 2 3/4- 8<br>3.7 Deep  | M72 x 2<br>94.0 Deep | 3-12<br>4.00 Deep | M76 x 2<br>101.6 Deep | 4- 8<br>4.75 Deep | M100x 3<br>120.7 Deep | 6- 8<br>5.4 Deep  | M150x 3<br>137.1 Deep  |
| 11.        | 0.60                  | 15.2                 | 0.60                  | 15.2                 | 0.60              | 15.2                  | 0.92              | 20.8                  | .77               | 19.5                   |
| 12.        | 3.00                  | 76.2                 | 4.00                  | 101.6                | 4.25              | 108.0                 | 5.00              | 101.6                 | 6.50              | 165.1                  |
| 13.        | 0.03                  | 0.8                  | 0.03                  | 0.8                  | 0.03              | 0.8                   | 0.03              | 0.8                   | 0.03              | 0.8                    |
| 14.        | 4.83                  | 122.7                | 4.83                  | 122.7                | 5.70              | 144.8                 | 7.89              | 200.4                 | 10.00             | 254.0                  |
| 15.        | 2 3/4- 8<br>2.70 Deep | M72 x 2<br>68.6 Deep | 2 3/4- 8<br>3.70 Deep | M72 x 2<br>94.0 Deep | 3-12<br>3.90 Deep | M76 x 2<br>99.1 Deep  | 4- 8<br>4.65 Deep | M100 x 3<br>88.9 Deep | 6- 8<br>5.4 Deep  | M150 x 3<br>137.1 Deep |



## OPTIONS

- Additional bridges
- Output adjustment to standard
- Compression overload protection
- Integral cable
- Custom connectors
- Connector Protectors
- Base

## ACCESSORIES

- Mating connector
- Loading fixtures
- Interconnect cable
- Shunt calibration resistor
- Instrumentation