

MODEL 820M1 ACCELEROMETER



SPECIFICATIONS

- Piezoelectric Accelerometer
- $\pm 25g$ to $\pm 100g$ Dynamic Ranges
- Wide Bandwidth to 6000Hz
- Circuit Board Mountable

The Model 820M1 is a low cost, board mountable accelerometer designed for embedded condition monitoring and predictive maintenance applications. The piezo-electric accelerometer is available in ranges from $\pm 25g$ to $\pm 100g$ and features a flat frequency response up to $>6kHz$. Featuring stable piezo-ceramic crystals in shear mode, the accelerometer incorporates an amplified $\pm 1.25V$ output with optimum measurement resolution.

FEATURES

- Amplified $\pm 1.25V$ Signal Output
- 2.8 to 5.5Vdc Excitation Voltage
- Hermetically Sealed
- Piezo-Ceramic Shear Design
- -40° to $+125^{\circ}C$ Operating Range

APPLICATIONS

- Machine Health Monitoring
- Preventive Maintenance Installations
- Embedded Vibration Monitoring
- Impact & Shock Monitoring

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PERFORMANCE SPECIFICATIONS

All values are typical at +24°C, 80Hz and 3.3Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

Parameters

DYNAMIC

| | ±25 | ±50 | ±100 | Notes |
|-------------------------------|--------|--------|--------|--------------|
| Range (g) | ±25 | ±50 | ±100 | |
| Sensitivity (mV/g) | 50.0 | 25.0 | 12.5 | ±30% |
| Frequency Response (Hz) | 2-6000 | 2-6000 | 2-6000 | ±1dB |
| Resonant Frequency (Hz) | >30000 | >30000 | >30000 | |
| Non-Linearity (%FSO) | ±1 | ±1 | ±1 | |
| Transverse Sensitivity (%) | <5 | <5 | <5 | |
| Shock Limit (g) | 2000 | 2000 | 2000 | |
| Residual Noise (g RMS) | 0.0026 | 0.0030 | 0.0032 | 2Hz to 10kHz |
| Spectral Noise, 10Hz (µg√Hz) | 160 | 160 | 160 | |
| Spectral Noise, 100Hz (µg√Hz) | 40 | 40 | 40 | |
| Spectral Noise, 1kHz (µg√Hz) | 16 | 16 | 16 | |

ELECTRICAL

| | | | | |
|-------------------------------|------------------------|--|--|---------|
| Excitation Voltage (Vdc) | 2.8 to 5.5 | | | |
| Bias Voltage (Vdc) | Excitation Voltage / 2 | | | |
| Full Scale Output Voltage (V) | ±1.25 | | | |
| Total Supply Current (µA) | 22 | | | |
| Output Impedance (Ω) | <100 | | | |
| Insulation Resistance (MΩ) | >100 | | | @100Vdc |
| Shielding | 100% | | | |
| Warm-up Time (msec) | 30 | | | |

ENVIRONMENTAL

| | |
|----------------------------|------------------------------|
| Temperature Response (%) | -20/+30 from -40°C to +125°C |
| Operating Temperature (°C) | -40 to +125 |
| Storage Temperature (°C) | -40 to +125 |
| Humidity | Hermetically Sealed |

PHYSICAL

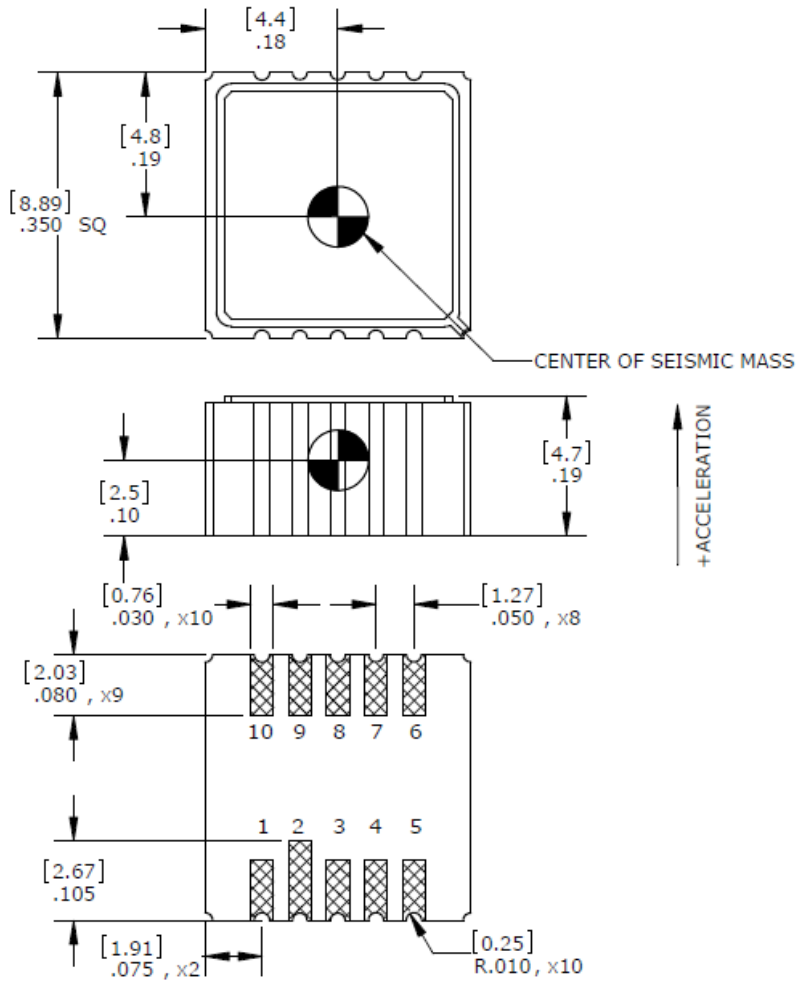
| | |
|-----------------|-------------------------------|
| Sensing Element | PZT (Lead Zirconate Titanate) |
| Case Material | Ceramic Base and Cover |
| Weight (grams) | 1.0 |
| Mounting | Solder Reflow |

Calibration supplied: CS-SENS-0100 NIST Traceable Amplitude Calibration at 80Hz

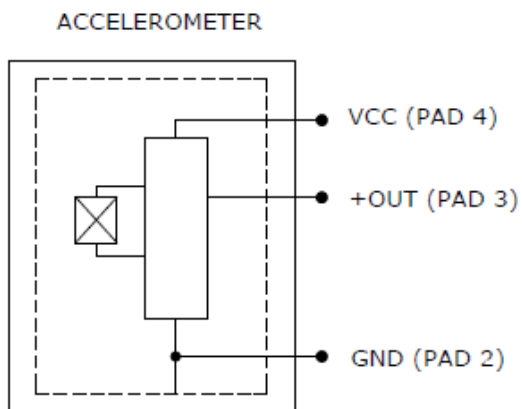
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DIMENSIONS



SCHEMATIC



ORDERING INFORMATION

820M1-GGGG

| _____ Range (0100 is 100g)

| Part Number | Range |
|-------------|-------|
| 820M1-0025 | 25g |
| 820M1-0050 | 50g |
| 820M1-0100 | 100g |

NORTH AMERICA

Tel +1 800 522 6752
Customercare.hmpt@te.com

EUROPE

Tel +31 73 624 6999
Customercare.lcsb@te.com

ASIA

Tel +86 0400 820 6015
customercareshzn@te.com

te.com/sensorsolutions

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