

# MODEL EGAS ACCELEROMETER

## SPECIFICATIONS

- ◆ Miniature Design, Light Weight
- ◆ DC Response, Critically Damped
- ◆ 10,000 g Over-range Stops
- ◆ Broad Temperature Range

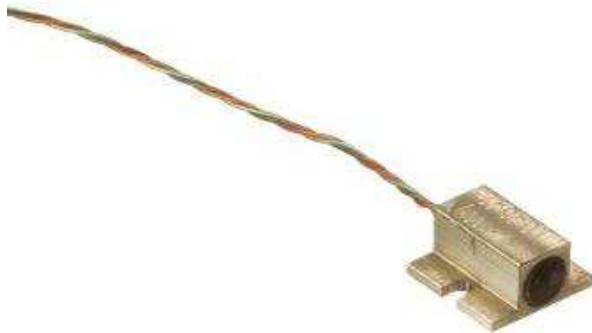
The Model EGAS is a miniature, uniaxial accelerometer featuring ranges from  $\pm 5g$  through  $\pm 2500g$ . This rugged unit weighs less than 1 gram (without leads) and has an over-range limit of 10,000g's. The  $\frac{1}{2}$  active bridge is suitable for shunt calibration. With an operating temperature range of  $-40^{\circ}C$  to  $+120^{\circ}C$ , the EGAS is the unit of choice for measurement professionals in the automotive, military, aerospace and transportation industries. Its combined nonlinearity and hysteresis of  $\pm 1\%$  makes the EGAS well-suited for on-site testing as well as laboratory use.

## FEATURES

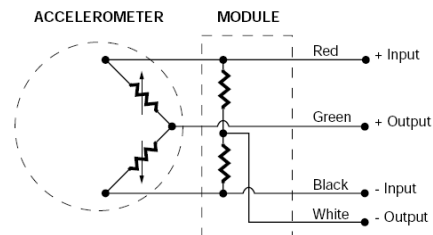
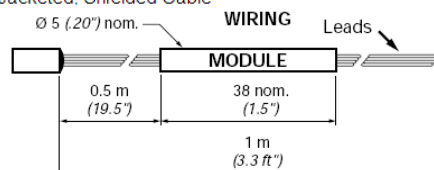
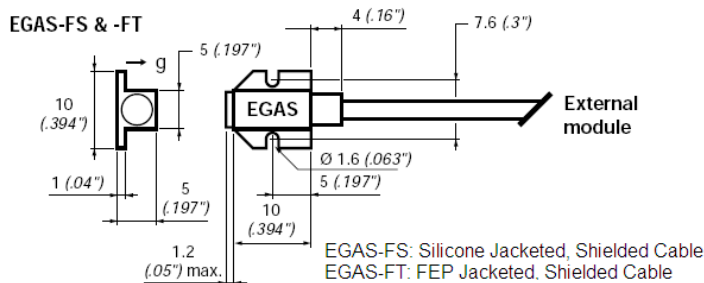
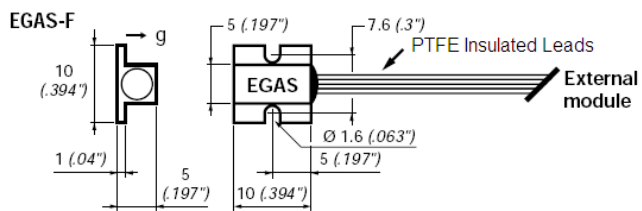
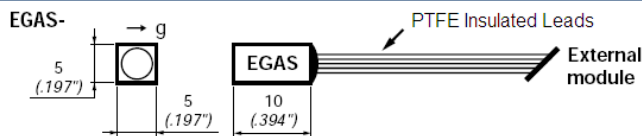
- ◆ 2-15Vdc Excitation Voltage
- ◆ Weighs < 1 gram
- ◆ Static and Dynamic Measurement
- ◆ Frequency Response through 3500 Hz
- ◆ 2% Transverse Sensitivity
- ◆ Damping Ratio 0.7

## APPLICATIONS

- ◆ Sports and Recreation
- ◆ Modeling and Entertainment
- ◆ Biodynamics
- ◆ Automotive Testing
- ◆ Laboratory Usage



## dimensions



**PERFORMANCE SPECIFICATIONS**

All values are typical at +24°C, 100Hz and 15Vdc excitation unless otherwise stated. Measurement Specialties reserves the right to update and change these specifications without notice. Standard product parameters are described in PSC-1004 for Plug & Play DC Accelerometers.

**Parameters**

**DYNAMIC**

|                              | ±5    | ±10   | ±25   | ±50   | ±100  | ±250   | ±500  | ±1000 | ±2500 | Notes   |
|------------------------------|-------|-------|-------|-------|-------|--------|-------|-------|-------|---------|
| Range (g)                    |       |       |       |       |       |        |       |       |       |         |
| Sensitivity (mV/g)           | 20    | 10    | 4     | 2     | 1     | 0.4    | 0.2   | 0.1   | 0.04  |         |
| Frequency Response min. (Hz) | 0-80  | 0-120 | 0-240 | 0-350 | 0-500 | 0-750  | 0-    | 0-    | 0-    | ±1/2dB  |
| Frequency Response nom. (Hz) | 0-150 | 0-200 | 0-400 | 0-600 | 0-900 | 0-1300 | 1000  | 1500  | 2000  | ±1/2dB  |
| Natural Frequency (Hz)       | 300   | 400   | 800   | 1200  | 1800  | 2600   | 3500  | 5000  | 7000  |         |
| Non-Linearity (%FSO)         | ±1    | ±1    | ±1    | ±1    | ±1    | ±1     | ±1    | ±1    | ±1    |         |
| Transverse Sensitivity (%)   | <2    | <2    | <2    | <2    | <2    | <2     | <2    | <2    | <2    |         |
| Damping Ratio                | 0.7   | 0.7   | 0.7   | 0.7   | 0.7   | 0.7    | 0.7   | 0.7   | 0.7   | Nominal |
| Shock Limit (g)              | 500   | 1000  | 2000  | 5000  | 10000 | 10000  | 10000 | 10000 | 10000 |         |

**ELECTRICAL**

|                               |   |  |  |  |  |  |  |  |  |              |
|-------------------------------|---|--|--|--|--|--|--|--|--|--------------|
| Zero Acceleration Output (mV) | ±15   |  |  |  |  |  |  |  |  | Differential |
| Excitation Voltage (Vdc)      | 15 (can be used from 2 to 15Vdc but lower excitation voltage will decrease sensitivity accordingly) |  |  |  |  |  |  |  |  |              |
| Input Resistance (Ω)          | 1300  |  |  |  |  |  |  |  |  | Nominal      |
| Output Resistance (Ω)         | 1500  |  |  |  |  |  |  |  |  | Nominal      |
| Insulation Resistance (MΩ)    | >100  |  |  |  |  |  |  |  |  | @50Vdc       |
| Ground Isolation              | Isolated from Mounting Surface  |  |  |  |  |  |  |  |  |              |

**ENVIRONMENTAL**

|                                   |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|--|--|--|--|--|--|--|--|--|--|
| Thermal Zero Shift                | ±1.0mV / 50°C (±1.0mV / 100°F)   |  |  |  |  |  |  |  |  |  |
| Thermal Sensitivity Shift         | ±2.5% / 50°C (±2.5% / 100°F)   |  |  |  |  |  |  |  |  |  |
| Operating Temperature Compensated | -40 to +120°C (-40 to +250°F)  |  |  |  |  |  |  |  |  |  |
| Temperature                       | +20 to +80°C (+70 to +170°F), contact factory for other temperature compensation options |  |  |  |  |  |  |  |  |  |
| Storage Temperature               | -40 to +120°C (-40 to +250°F)  |  |  |  |  |  |  |  |  |  |
| Humidity                          | Epoxy Sealed   |  |  |  |  |  |  |  |  |  |

**PHYSICAL**

|               |  |  |  |  |  |  |  |  |  |  |
|---------------|--|--|--|--|--|--|--|--|--|--|
| Case Material | Stainless Steel  |  |  |  |  |  |  |  |  |  |
| Cable         | 4x #34 AWG Conductors PTFE Insulated, Shielded & Jacketed on -FS & -FT Options |  |  |  |  |  |  |  |  |  |
| Weight        | 1 grams  |  |  |  |  |  |  |  |  |  |
| Mounting      | Screw Mount for EGAS-F, Adhesive Mount for EGAS                                |  |  |  |  |  |  |  |  |  |

**Wiring color code:** +Excitation = Red; -Excitation = Black; +Output = Green; -Output = White

**Calibration supplied:** CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±1/2dB Frequency Response Limit

**Optional accessories:**

|        |  |
|--------|--|
| MTG-F2 | Triaxial Mounting Block for EGAS-FS & -FT  |
| MTG-F3 | Triaxial Mounting Block for EGAS-F         |
| 121    | 3-Channel Precision Low Noise DC Amplifier |
| 140    | Auto-zero Inline Amplifier                 |

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## ORDERING INFO

### EGAS – F – 100 – /Z1/L2M/C

| | | Options, otherwise leave blank  
| | Range (100 is 100g)  
| Housing (-F, -FS, -FT or leave blank)

### Compensated Temp Ranges:

Standard = +20 to +80°C (+70 to +170°F)  
Z1 = -20 to +40°C (0 to +100°F)  
Z2 = 0 to +60°C (+32 to +140°F)  
Z4 = +40 to +90°C (+100 to +200°F)  
Z\* = Non standard, contact factory

### Excitation Voltage:

Standard = 15Vdc  
V\* = Non standard, contact factory  
L00F = Replace "00" with length in feet  
L00M = Replace "00" with length in meter  
C = Microtech type male or equivalent  
R = RJ Telephone Male, for EGAS & -F  
RS = RJ Telephone Male, for -FS & -FT

### Special Cable Length:

### Connector Wired to Cable:

Example: EGAS-F-100-L2M

Model EGAS, F Housing Configuration, 100g Range, 2 Meter Cable Length

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