



## MODEL EGCS-D5 SHOCK ACCELEROMETER

### Specifications

- Rugged Piezoresistive Design
- DC Response, Critically Damped
- $\pm 50\text{g}$  to  $\pm 10,000\text{g}$  Dynamic Range
- Rugged Miniature Lightweight Design
- Fluid Damped, Over-Range Stops
- Fits Popular Shock Sensor Mounting Bolt Pattern

### Features

- $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$  Operating Range
- DC to 10kHz Frequency Response
- Full Bridge Design
- Linearity  $<1\%$
- $>10,000\text{g}$  Shock Protection
- 2-15Vdc Excitation
- Inline Amplifier Option

### Applications

- General Purpose T&M Applications
- Metal-to-Metal Impact Testing
- Pile Driving, Construction Equipment
- Weapons Testing
- Static & Dynamic Measurements
- Auto Safety Testing

The TE Connectivity EGCS-D5 shock accelerometer is a rugged critically damped sensor with built-in mechanical over-range stops that are set to protect the unit against shock impacts up to 20,000g loads. The accelerometer is critically fluid damped and features a full bridge output configuration with a 2-15Vdc excitation voltage range. The damped EGCS-D5 sensor is available in ranges from  $\pm 50\text{g}$  to  $\pm 10,000\text{g}$  and features a flat frequency response up to 10kHz (with model 145 inline amplifier installed).

The EGCS-D5 accelerometer has a standard cross-talk accuracy of  $<3\%$  with a ZMO (zero measurand output) of  $\pm 20\text{mV}$ . The sensor includes internal temperature compensation and has an operating temperature range of  $-40^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$ .

The EGCS-D5 vibration sensor is environmentally sealed with IP65 protection. The mounting footprint is designed to match current industry standard mounting footprint to enable trouble free replacement.

A triaxial mounting block, PN AC-D05201, is also offered for multi-axis measurement installations.

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## MODEL EGCS-D5 ACCELEROMETER

### Performance Specifications

All values are typical at +24°C, 80Hz and 15Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

#### PARAMETERS

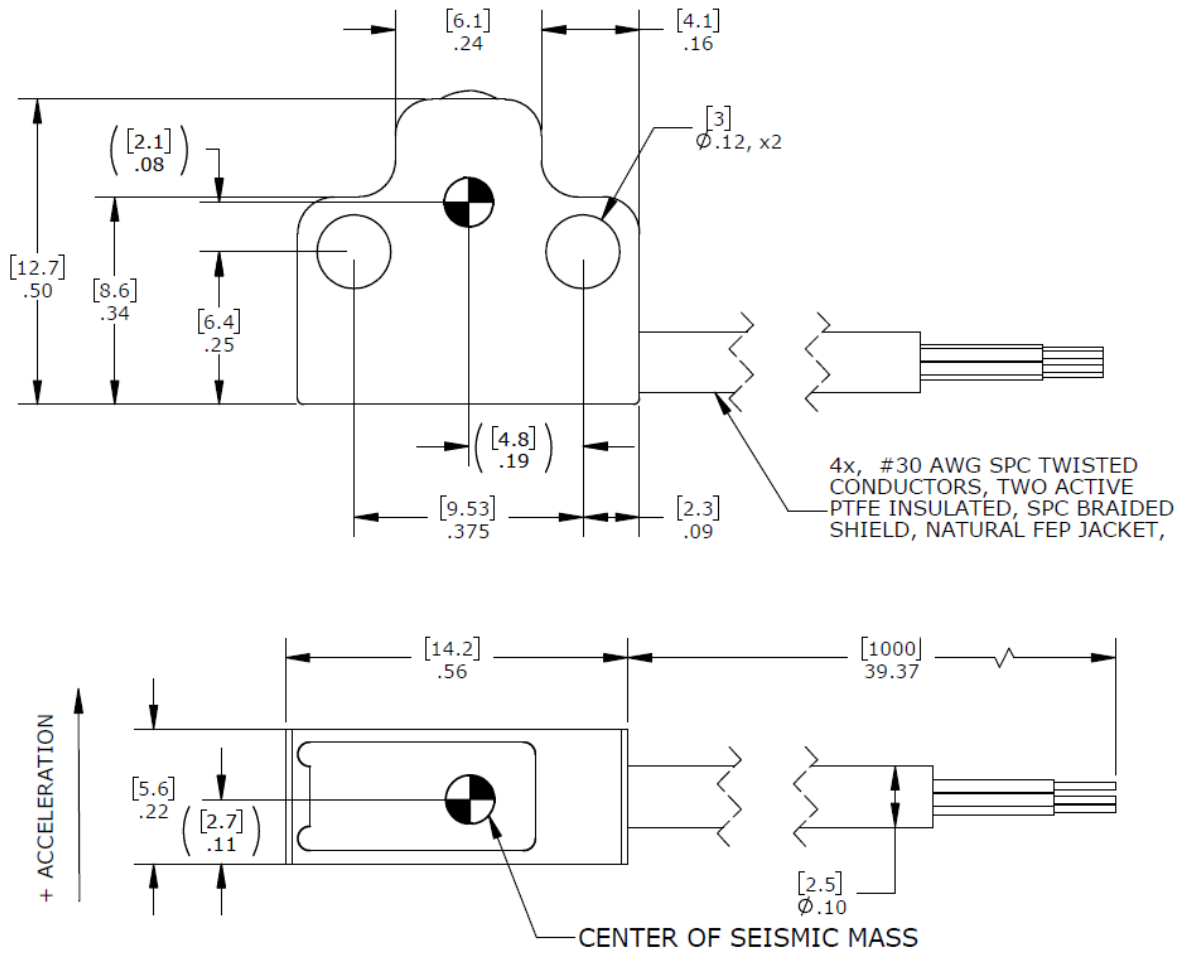
DYNAMIC								
Range (g)	±50	±100	±250	±500	±1000	±2500	±5000	±10000
Sensitivity (mV/g) @15Vdc	4	2	0.8	0.4	0.2	0.08	0.04	0.016
Frequency Response, Hz								
+5% / -10%	0-360	0-540	0-780	0-1050	0-1500	0-2100	0-2400	0-3000
+5% / -20%	0-600	0-900	0-1300	0-1750	0-2500	0-3500	0-4000	0-5000
Min Resonance Freq, Hz	1200	1800	2600	3500	5000	7000	8000	10000
Transverse Sensitivity	<3%	<3%	<3%	<3%	<3%	<3%	<3%	<3%
Non-Linearity	±1%	±1%	±1%	±1%	±1%	±1%	±1%	±1%
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Shock Limit (g)	±5000	±10000	±10000	±10000	±10000	±10000	±10000	±12500
ELECTRICAL								
Zero Measurand Output	<±20 mV, differential							
Excitation Voltage	2 to 15Vdc							
Input Resistance	1000-2500 Ohms							
Output Resistance	700-1300 Ohms							
Insulation Resistance	>100 MΩ @50Vdc							
Ground Isolation	Isolated from mounting surface							
Warm-Up Time	<10 seconds							
ENVIRONMENTAL								
Thermal Zero Shift	±2.0mV / 50°C (±2.0mV / 100°F)							
Thermal Sensitivity Shift	±2.5% / 50°C (±2.5% / 100°F)							
Operating Temperature	-40°C to +120°C							
Compensated Temp	+20°C to +80°C, contact factory for other temperature compensation options							
Humidity	Epoxy Sealed, IP65							
PHYSICAL								
Case Material	Stainless Steel							
Cable	4x #30 AWG Leads, PTFE Insulated, Braided Shield, FEP Jacket							
Weight	<6 grams							
Mounting	Screw Mount, 2x #4-40 or M3							

<sup>1</sup> Output is ratiometric to excitation voltage

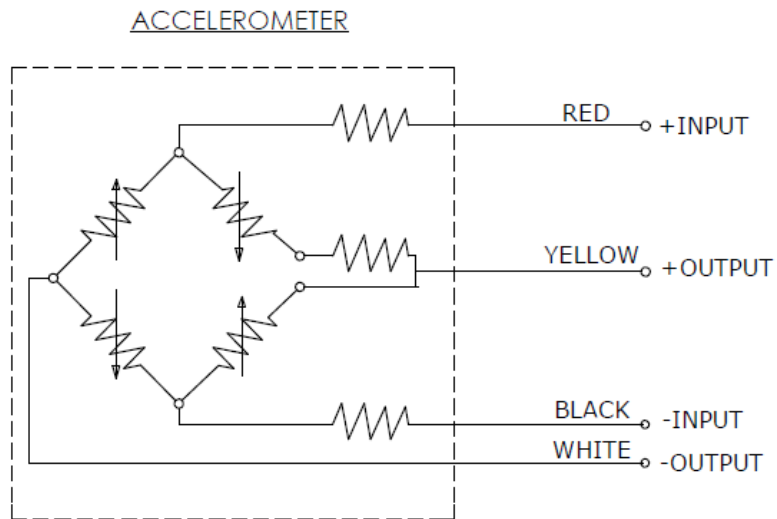
<b>Calibration supplied:</b>	CS-FREQ-0100	NIST Traceable Amplitude Calibration from 20Hz to ±1dB Frequency Limit
<b>Optional accessories:</b>	AC-D05201 145 121	Triaxial Mounting Block Dedicated Inline Amplifier, see page 4 of datasheet 3-Channel Precision Low Noise DC Amplifier

# MODEL EGCS-D5 ACCELEROMETER

## Dimensions



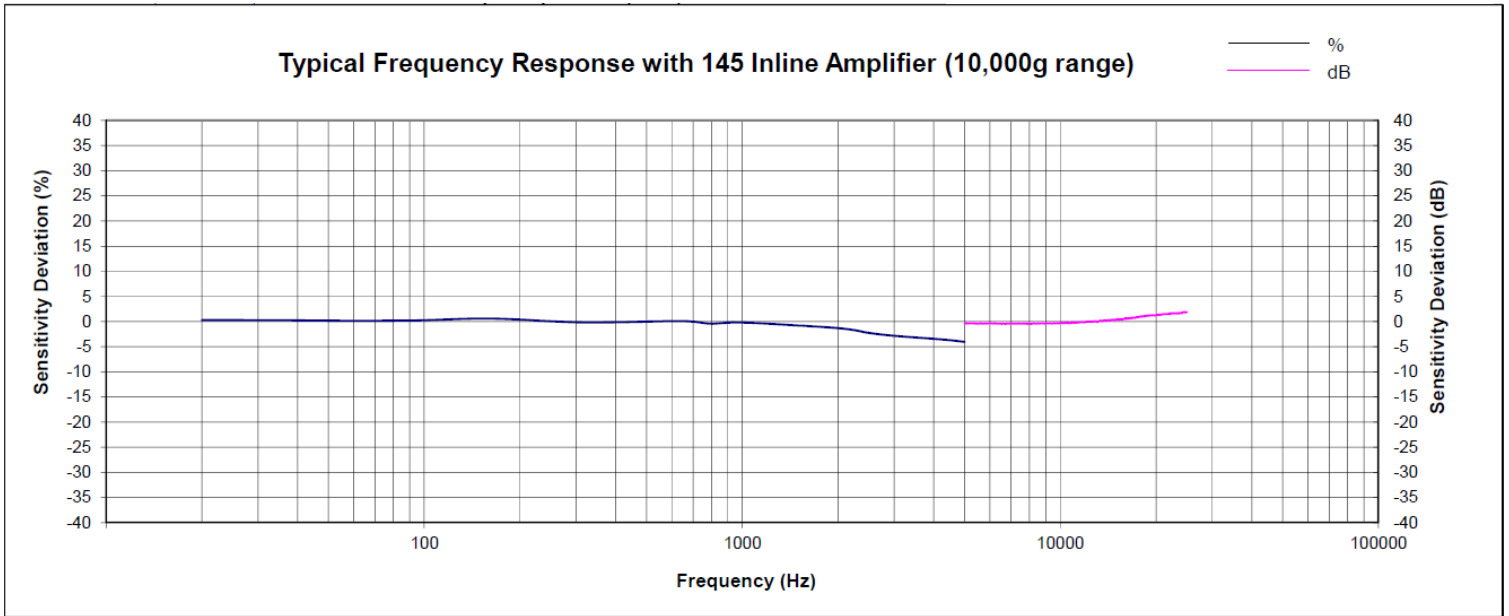
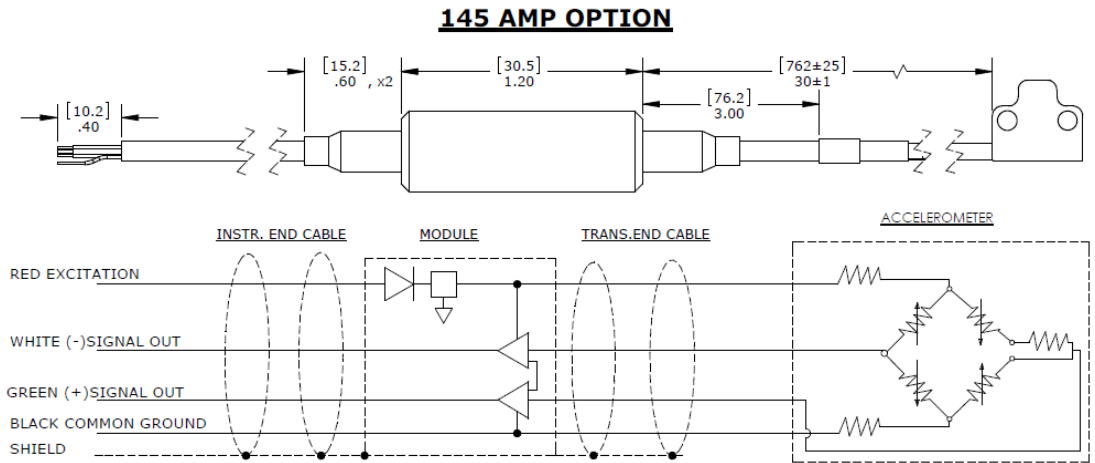
## Schematic



# MODEL EGCS-D5 ACCELEROMETER

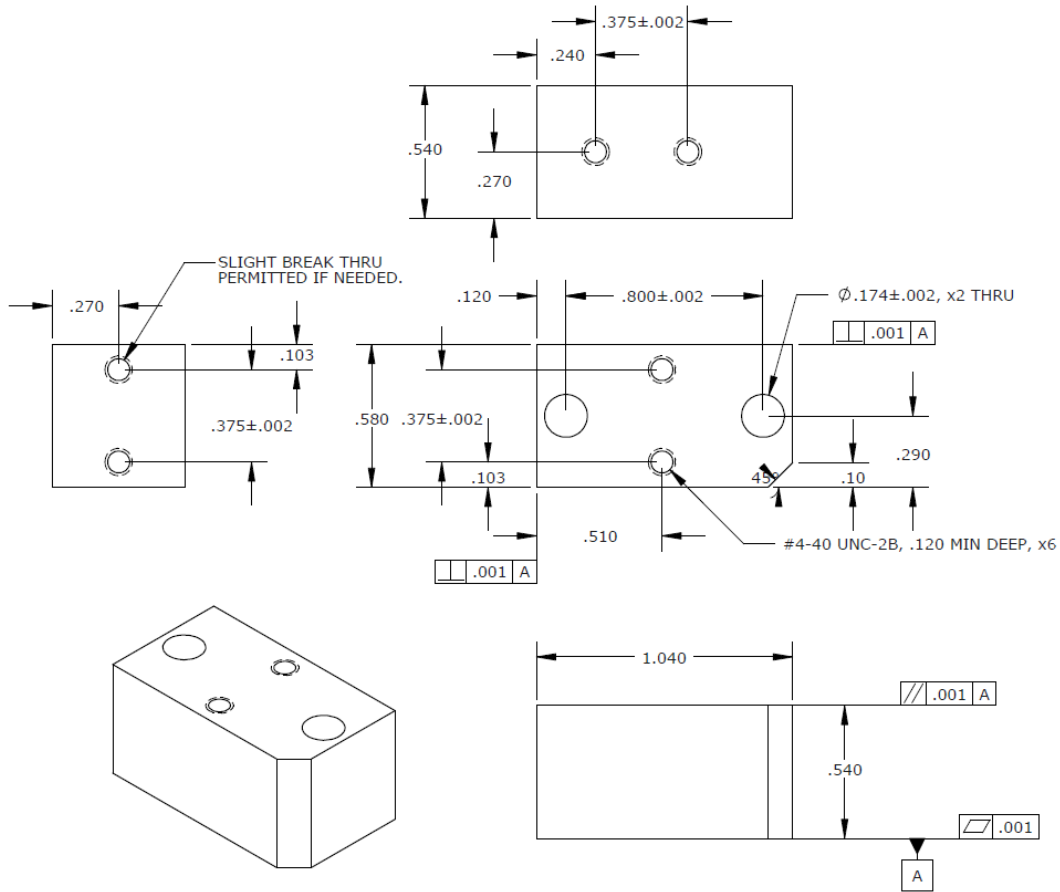
## Model 145 Inline Amplifier

Units with model 145 Inline Amplifier can be powered with 8-20Vdc. The sensors are supplied with regulated 5Vdc from the amplifier. The output is differential with a 2.5Vdc common mode. The amplifier has a 30x gain and a 20kHz low-pass filter and is intended for high-g ranges.

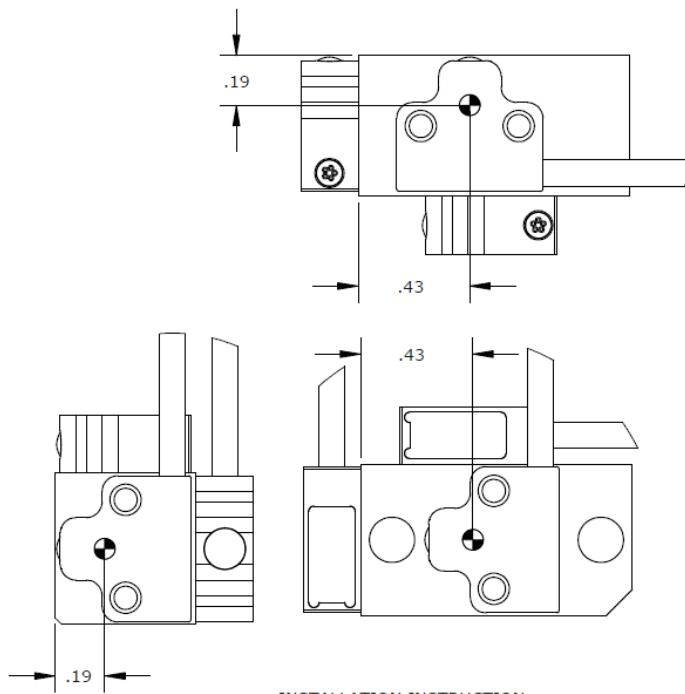


# MODEL EGCS-D5 ACCELEROMETER

## Triaxial Mounting Block



## Mounting Guide



INSTALLATION INSTRUCTION

# MODEL EGCS-D5 ACCELEROMETER

## Ordering Information

EGCS-D5	GGGG	-/VX	/LZZ	/145
<b>Range</b> 50 = 50g 100 = 100g 250 = 250g 500 = 500g 1000 = 1000g 2500 = 2500g 5000 = 5000g 10000 = 10,000g				
<b>Excitation Voltage</b> Leave blank for standard 15Vdc V5 = 5Vdc excitation V10 = 10Vdc excitation				
<b>Cable length</b> Leave blank for standard 1 meter cable length L2M = 2 meters L5M = 5 meters L10M = 10 meters				
<b>Amplifier Option</b> Blank = No inline amplifier included 145 = Inline amplifier module installed				

Example; EGCS-D5-10000-/V10  
Model EGCS-D5, 10,000g range, calibrated at 10Vdc excitation, standard 1 meter cable length

Example; EGCS-D5-5000-/L5M/145  
Model EGCS-D5, 5000g range, 5 meters cable length, inline amplifier module installed

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