



MODEL 4630 TRIAXIAL ACCELEROMETER

SPECIFICATIONS

- **MEMS DC Triaxial Accelerometer**
- **Ultra-Stable, DC Response**
- **Exceptional Thermal Performance**
- **<2.0% Total Error Band**
- **<0.1% Linearity Accuracy**

The Model 4630 is an ultra-stable MEMS DC triaxial accelerometer with exceptional performance over a full operating temperature range of -55°C to +125°C. The accelerometers are available in ranges from ± 2 to $\pm 200g$ with a wide bandwidth from DC to 2000Hz. The model 4630 accelerometers incorporate gas damped variable capacitance MEMS sensing element with integral over-range stops for high-g shock protection. The accelerometers are designed for 4 to 30Vdc excitation voltage and include a self-test option.

For single axis version, TE Connectivity also offers the model 4602, 4604 and 4610 accelerometers.

FEATURES

- $\pm 2g$ to $\pm 200g$ Dynamic Range
- Three Independent Circuits
- Self-test Enabled
- Amplified Output, Signal Conditioned
- Gas Damped MEMS Sensors
- Integral Strain Relief
- 4 to 30Vdc Excitation Voltage
- 6000g Shock Protection

APPLICATIONS

- Flight Testing
- Flutter and Nacelle Vibrations
- Structural Testing
- Test and Instrumentation
- Performance Testing
- Transportation

PERFORMANCE SPECIFICATIONS

All values are typical at +24°C, 80Hz and 12Vdc excitation unless otherwise stated. TE Connectivity reserves the right to update and change these specifications without notice.

Parameters								Notes
DYNAMIC								
Range (g)	±2	±5	±10	±30	±50	±100	±200	
Sensitivity (mV/g)	1000	400	200	67	40	20	10	
Frequency Response (Hz)	0-700	0-1000	0-1500	0-2000	0-2000	0-2000	0-2000	±5%
Non-Linearity (%FSO)	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	
Transverse Sensitivity (%)	<3	<3	<3	<3	<3	<3	<3	<1 Typical
Damping Ratio	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
Shock Limit (g)	6000	6000	6000	6000	6000	6000	6000	
Residual Noise (µV RMS)	360	380	400	440	480	500	500	Passband
Spectral Noise (µg/√Hz)	14	28	45	137	231	464	920	Passband

ELECTRICAL								
Zero Acceleration Output (mV)	±50							Differential
Excitation Voltage (Vdc)	4 to 30							
Excitation Current (mA)	<5 per channel							
Common Mode Voltage (Vdc)	1.65							
Full Scale Output (differential)	±2 Vpk (FSO=2V)							
Full Scale Output (single-ended)	+0.65 to 2.65 Vpk (FSO=1V)							
Output Resistance (Ω)	<100							
Insulation Resistance (MΩ)	>100							@100Vdc
Turn On Time (msec)	<100							
Ground Isolation	Isolated from Mounting Surface							

ENVIRONMENTAL								
Thermal Zero Shift (%FSO/°C)	±0.004							Typical
Thermal Sensitivity Shift (%/°C)	±0.008							Typical
Operating Temperature (°C)	-55 to 125							
Storage Temperature (°C)	-55 to 125							
Humidity	Epoxy Sealed, IP65 (MEMS sensor and high impedance electronics hermetically sealed)							
Total Error Band	<2% (RSS of Non-Linearity, Thermal Zero Shift, and Thermal Sensitivity Shift)							

PHYSICAL	
Case Material	Anodized Aluminum
Cable	15x #30 AWG Conductors PFA Insulated, Braided Shield, TPE Jacket
Weight (grams)	30 (cable not included)
Mounting	2x #4 or M3 Screws
Mounting Torque	6 lb-in (0.7 N-m)

Calibration supplied: CS-FREQ-0100 NIST Traceable Amplitude Calibration from 20Hz to ±5% Frequency Response Limit

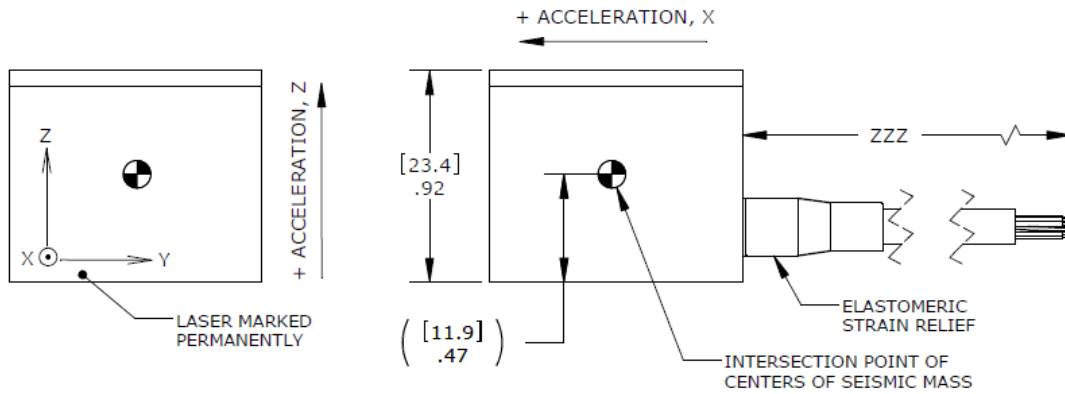
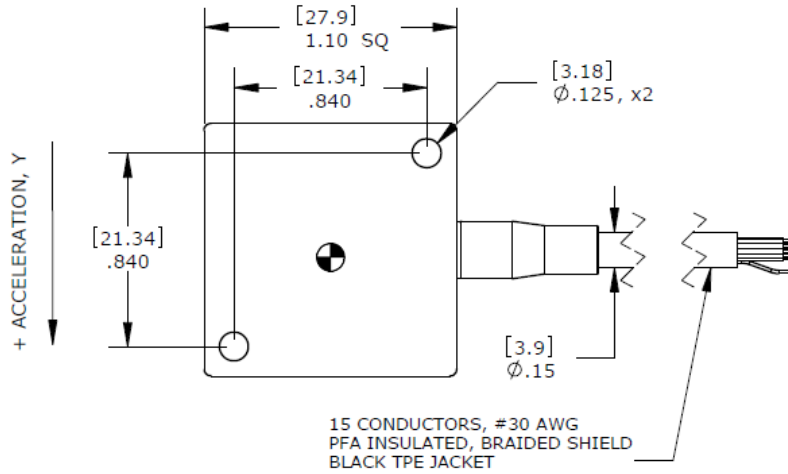
Supplied accessories: AC-D02855 2x #4-40 (1^{1/8} inch length) Socket Head Cap Screw and Washer

Optional accessories: AC-D02744 Adhesive Mounting Adaptor
121 3-Channel Precision Low Noise DC Amplifier

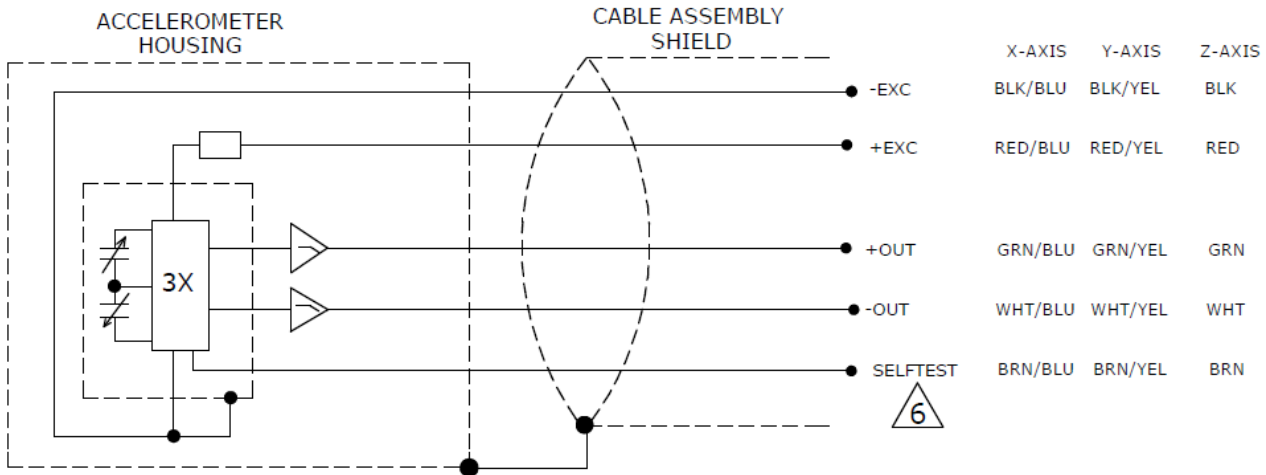
The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. TE Connectivity reserves the right to make changes without further notice to any product herein. TE Connectivity makes no warranty, representation or guarantee regarding the suitability of its product for any particular purpose, nor does TE Connectivity assume any liability arising out of the application or use of any product or circuit and specifically disclaims any and all liability, including without limitation consequential or incidental damages. Typical parameters can and do vary in different applications. All operating parameters must be validated for each customer application by customer's technical experts. TE Connectivity does not convey any license under its patent rights nor the rights of others.

MODEL 4630 ACCELEROMETER

DIMENSIONS



SCHEMATIC



⚠ BIT: CONNECT TO CIRCUIT GROUND TO PERFORM SELFTEST WHICH PRODUCES A 24Hz, 1g PEAK-TO-PEAK AMPLITUDE, SQUARE WAVE OUTPUT SIGNAL BY MECHANICALLY ACTUATING SENSOR ELEMENT. THE SELF-TEST OUTPUT SIGNAL IS IN ADDITION TO ANY INERTIAL ACCELERATION ACTING ON THE DEVICE DURING SELF-TEST. A ZERO-G ORIENTATION PROVIDES A $\pm 0.5g$ SELF-TEST OUTPUT SWING AROUND ZERO-G BIAS. AN AC VOLTMETER DISPLAYS A 0.5g-rms EQUIVALENT OUTPUT SHIFT. A SINGLE-ENDED HOOKUP REDUCES THE SELF-TEST OUTPUT BY HALF.

ORDERING INFORMATION

4630	GGG	ZZZ	D
Range			
002=2g			
005=5g			
010=10g			
030=30g			
050=50g			
100=100g			
200=200g			
Cable length			
060=60 inches			
120=120 inches			
180=180 inches			
240=240 inches			
300=300 inches			
360=360 inches			
480=480 inches			
600=600 inches			
197=197 inches, 5 meters			
394-394 inches, 10 meters			

Example; 4630-010-120-D
Model 4630, 10g range, 120inch cable length

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity Company
Tel: 800-522-6752
customercare.hmpt@te.com

EUROPE

MEAS France SAS
a TE Connectivity Company
Tel: +31 73 624 6999
customercare.lcsb@te.com

ASIA

Measurement Specialties (China), Ltd.,
a TE Connectivity Company
Tel: 0400-820-6015
customercare.shzn@te.com

TE.com/sensorsolutions

MEAS France SAS and Measurement Specialties (China), Inc., are TE Connectivity companies.

TE Connectivity, TE, TE connectivity (logo) are trademarks. All other logos, products and/or company names referred to herein might be trademarks of their respective owners.

The information given herein, including drawings, illustrations and schematics which are intended for illustration purposes only, is believed to be reliable. However, TE Connectivity makes no warranties as to its accuracy or completeness and disclaims any liability in connection with its use. TE Connectivity's obligations shall only be as set forth in TE Connectivity's Standard Terms and Conditions of Sale for this product and in no case will TE Connectivity be liable for any incidental, indirect or consequential damages arising out of the sale, resale, use or misuse of the product. Users of TE Connectivity products should make their own evaluation to determine the suitability of each such product for the specific application.

© 2017 TE Connectivity Ltd. All Rights Reserved.