



MODEL 4630M12 & 4630M14 TRIAxIAL ACCELEROMETERS

SPECIFICATIONS

- MEMS DC Triaxial Accelerometer
- <2.0% Total Error Band
- Titanium Housing with Rugged Cable
- Ultra-Stable, DC to 2000Hz Response
- Exceptional Thermal Performance
- <2.0% Total Error Band
- <0.1% Linearity Accuracy

FEATURES

- $\pm 2g$ to $\pm 200g$ Dynamic Range
- Three Independent Circuit
- Amplified Output, Signal Conditioned
- Gas Damped MEMS Sensors
- Integral Strain Relief
- 8 to 36Vdc Excitation Voltage
- 6000g Shock Protection

APPLICATIONS

- Flight Testing
- Flutter and Nacelle Vibrations
- Structural Testing
- Test and Instrumentation
- Performance Testing
- Road Load Testing

The 4630M12 and 4630M14 series accelerometers are ultra-stable MEMS DC triaxial vibration sensors available in ranges from ± 2 to $\pm 200g$. These accelerometers feature exceptional accuracy over a full operating temperature range of -55°C to $+125^{\circ}\text{C}$ with a Total Error Band of <2%.

The model 4630M12 and 4630M14 accelerometers incorporate a gas damped variable capacitance MEMS sensing element with integral over-range stops for high-g shock protection and a wide bandwidth from DC to 2000Hz. The accelerometers are packaged in a miniature, welded Titanium housing with a rugged strain relief and cable with integral Polyamide over-braid designed for harsh and demanding measurement applications.

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

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, Differential (mV/g)	1000	400	200	67	40	20	10	±5%
Frequency Response (Hz)	0-250	0-700	0-1000	0-1500	0-1500	0-1500	0-1500	±5%
Frequency Response (Hz)	0-500	0-1000	0-1500	0-2000	0-2000	0-2000	0-2000	±1dB
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)	8 to 36							
Excitation Current (mA)	<7 per channel							
Common Mode Voltage (Vdc)	1.22							
Full Scale Output (differential)	±2 Vpk (FSO=2V)							
Full Scale Output (single-ended)	+0.22 to 2.22 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 (MEMS Sensor and Electronics)	Hermetically Sealed							
Humidity (Housing)	Epoxy Sealed, IP65							
Total Error Band	<2% (RSS of Non-Linearity, Thermal Zero Shift, and Thermal Sensitivity Shift)							

PHYSICAL								
Case Material	Titanium							
Cable	PFA Insulated Conductors, Braided Shield, TPE Jacket, 6-6 Polyamide Outer Braid							
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

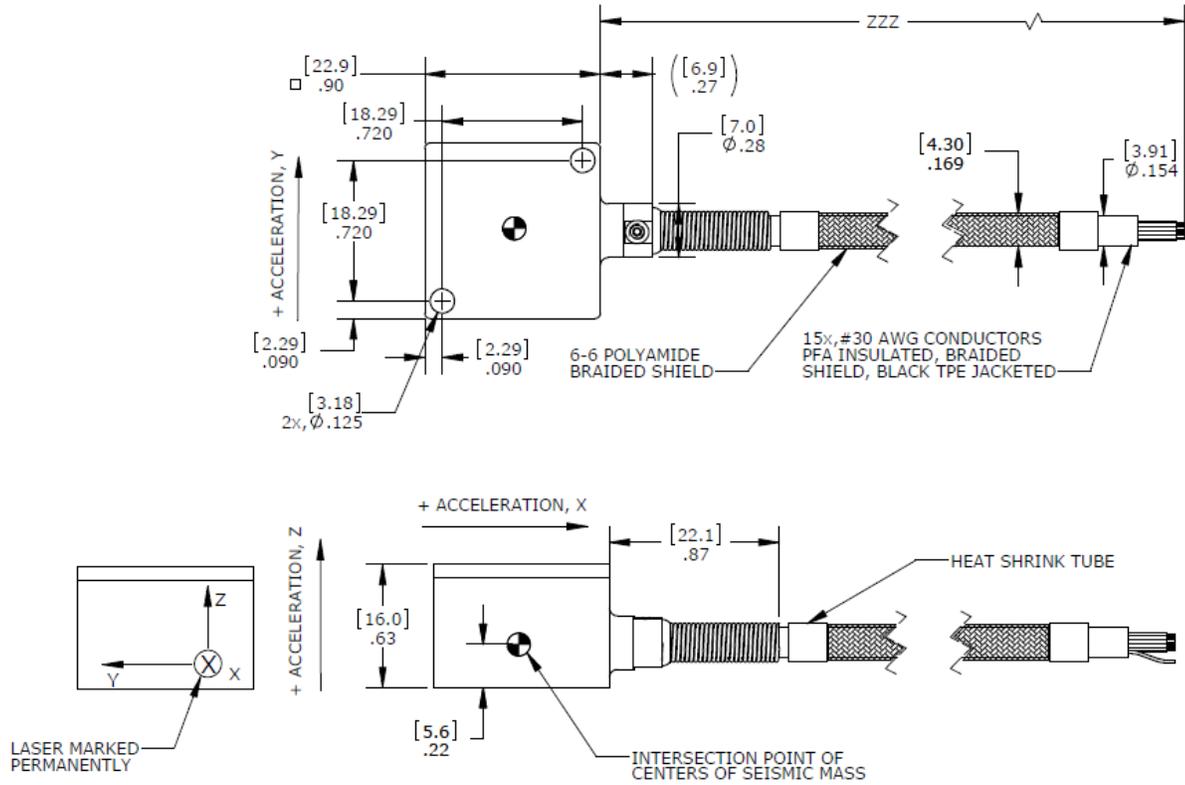
Supplied accessories: AC-D02855 2x #4-40 (1^{1/8} inch length) Socket Head Cap Screw and Washer

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

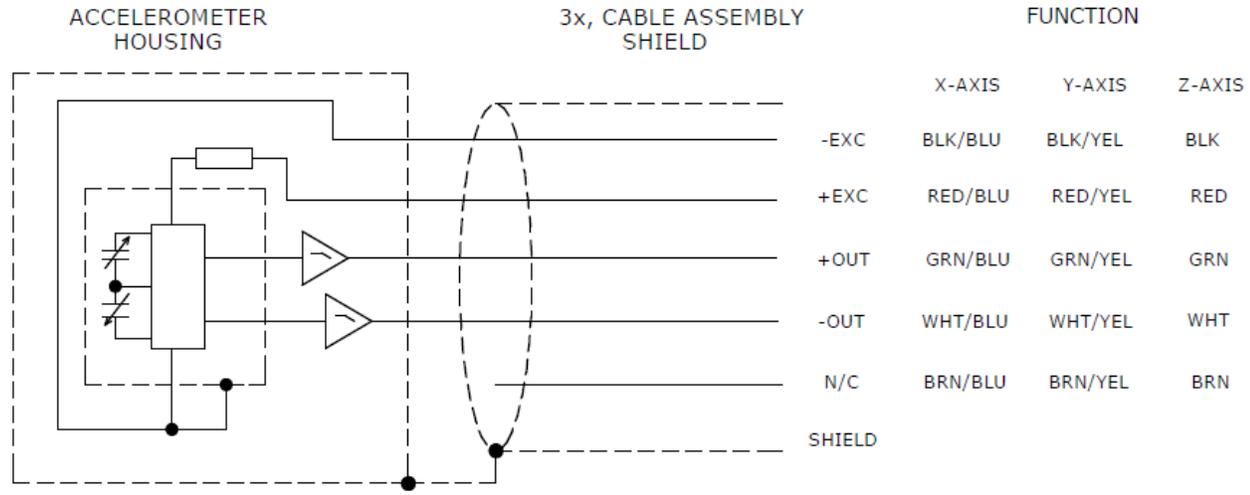
The information in this sheet has been carefully reviewed and is believed to be accurate; however, no responsibility is assumed for inaccuracies. Furthermore, this information does not convey to the purchaser of such devices any license under the patent rights to the manufacturer. TE Connectivity reserves 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 4630M12 & 4630M14 ACCELEROMETERS

DIMENSIONS, MODEL 4630M12

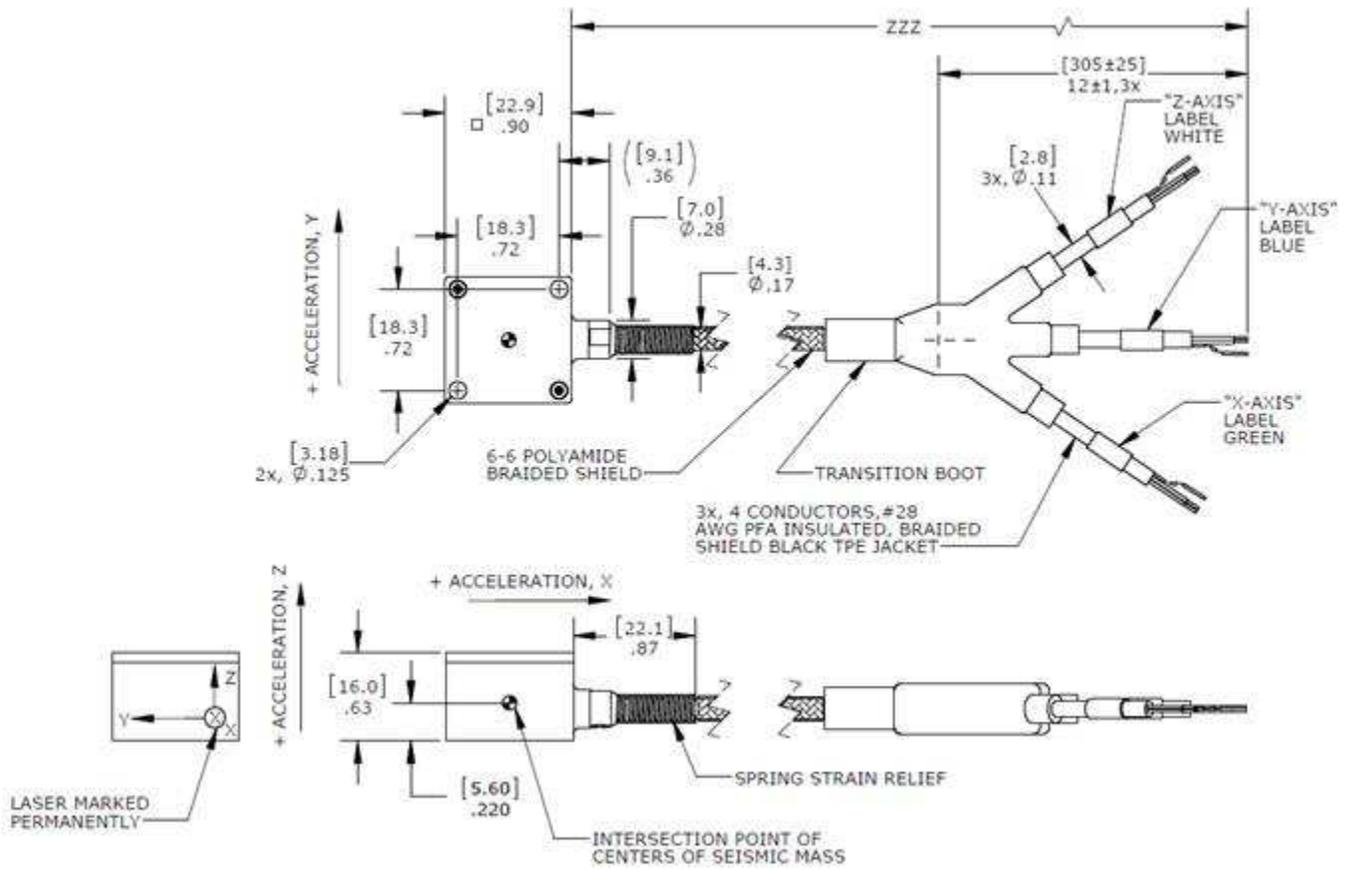


SCHEMATIC, MODEL 4630M12

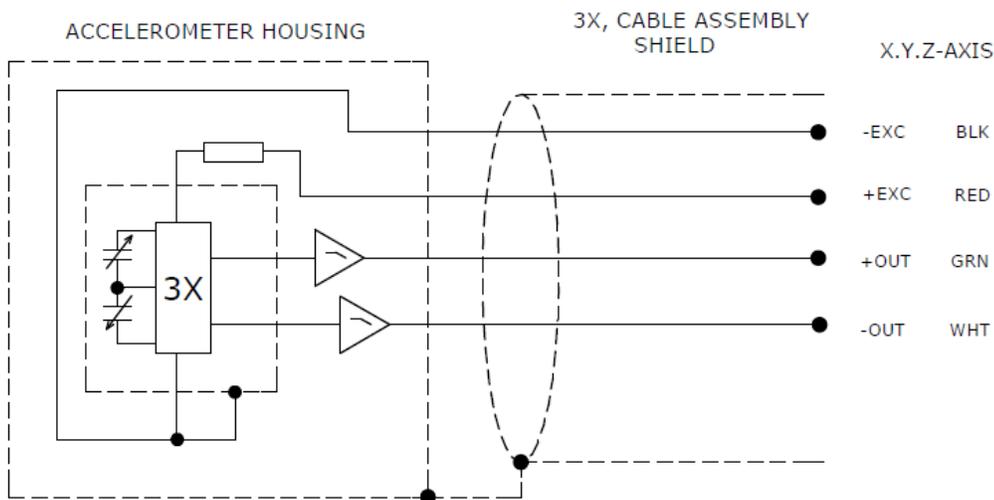


MODEL 4630M12 & 4630M14 ACCELEROMETERS

DIMENSIONS, MODEL 4630M14



SCHEMATIC, MODEL 4630M14



ORDERING INFORMATION

4630M12 (15-conductor cable straight) 4630M14 (tri-boot branching to X/Y/Z axes)	GGG	ZZZ	D	
Range 002 = 2g 005 = 5g 010 = 10g 030 = 30g 050 = 50g 100 = 100g 200 = 200g				
Cable length 120 = 120 inches, 10 feet 240 = 240 inches, 20 feet 360 = 360 inches, 30 feet 480 = 480 inches, 40 feet 600 = 600 inches, 50 feet 197 = 197 inches, 5 meters 394 = 394 inches, 10 meters				

Example; 4630M12-010-120-D
 Model 4630M12 (straight cable), 10g range, 120inch (10ft) cable length

Example; 4630M14-005-197-D
 Model 4630M14 (tri-boot installed), 5g range, 197inch (5m) 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.