High speed train carriage accelerometer

Features

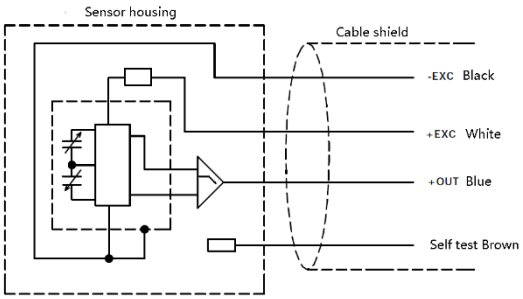
- DC response
- 10 full scale
- Motion, low frequency, tilt
- Shock survivability
- Temperature compensation

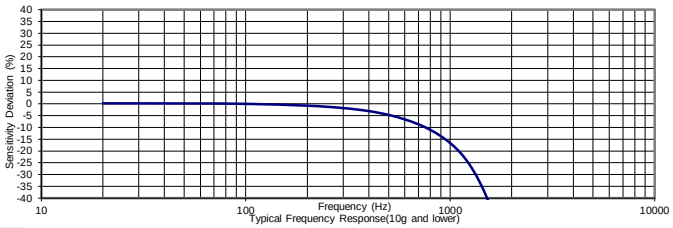
Application

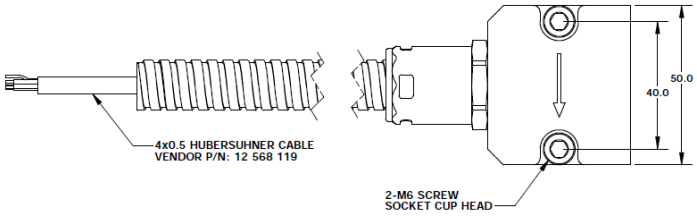
- Vehicle turning acceleration
- High speed train
- Maglev dynamic position
- Suspension monitoring
- Static acceleration
- Transmission test

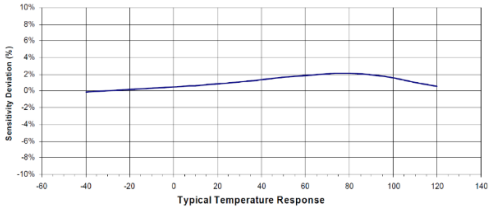
Description

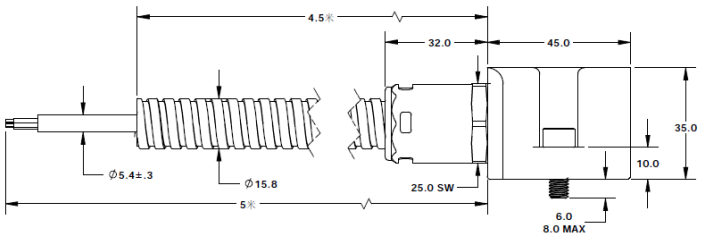
Model 815 is a high-sensitivity, variable capacitance accelerometer which measures static acceleration and low-frequency vibration. 815 is a capacitive accelerometer family utilizes a silicon Micro-Electro-Mechanical System (MEMS) variable capacitance sensing element. The sensing element consists of a very small inertial mass and a flexure element cantilever positioned between two plates. As the mass deflects under acceleration, the capacitance between these plate changes. AC excitation and synchronous amplitude demodulation circuitry contained in the accelerometer's internal signal conditioner provides an analog output signal proportional to the applied acceleration. This output signal is scaled as a current which is proportional to the applied acceleration. The output signal format is 4~20mA loop current. The accelerometer is powered by a single regulated supply between 12 to 30 Vdc. The sensing element and electronics are contained in a tough housing with an integral cable terminated by pigtails or specified connector. Signal ground is isolated from the test object that benefit by the anodized aluminum housing. The accelerometer can be mounted by M6 metric screw or adhesive. 815 is well-suited for a wide variety of high speed train applications requiring precision measurements and reliability package.











Specification

All values are typical at +24°C (+75°F), 12Vdc excitation unless otherwise stated.

Items	Spec.	Unit
Acceleration range	±10	g
Sensitivity ±10%	0.8	mA/g
Bias current ±5%	12	mA
Output range	4 to 20	mA
Frequency response ±5%	0-400	Hz
Residual noise, (Broadband Spectral)	2	μA
Shock limit	1000	g
Transverse sensitivity,	<3	%
Amplitude nonlinearity (BFSL)	±1	%FSO
Thermal bias shift	±2.5	%FSO
Thermal sensitivity shift, -40 to +85°C, REF. 24°C	±3	%
Power requirement	12 to 30	Vdc
Output impedance	<100	Ω
Insulation resistance (@100Vdc)	>100	MΩ
Turn-on time	<100	mSEC
Operation temperature	-45 to +85	°C
Protection	IP67	
Case material	Anodized aluminum	
Weight (W/O cable)	160	Gram
Cable bending(with tube)	25	mm

Accessories

Calibration certificate included.

Part Number	Description	Availability
PM0124	M6x16 socket head cap screws	2pcs included
IN-3062	8 channels data acquisition system	Optional

Measurement configuration

Sensor	Connector	Data acquisition	Computer
			

Ordering information

815	**-**	**10**	**-**	**3**
Model	-	Range	-	Cable length
815	-	2=2g 5=5g 10=10g	-	1=1 meter 3=3 meters