Crash test accelerometer

Features

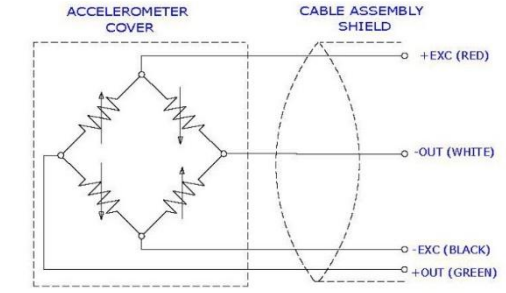
- Water proof
- DC response
- 200 g full scale
- Impact resistance
- 10K g shock survivability
- Light weight
- Critical damping

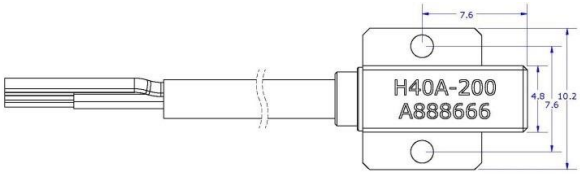
Application

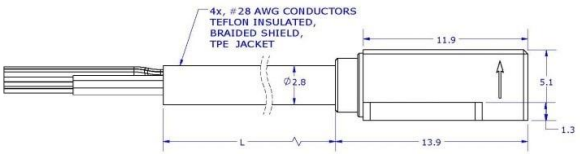
- Motion monitoring
- Crash test
- Shock recorder

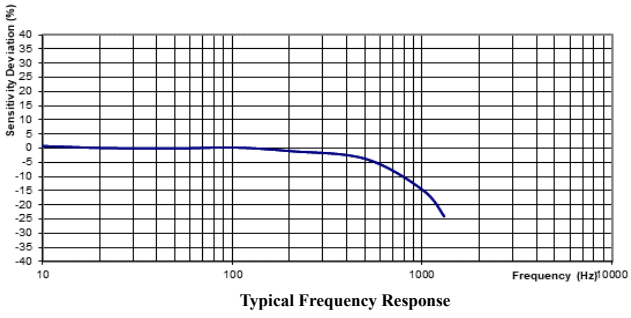
Description

Model **H40** is a high sensitivity accelerometer which measures shock acceleration and low-frequency vibration. **H40** is an accelerometer utilizes a silicon Micro-Electro-Mechanical System (MEMS) sensing element. The sensing element consists of a very small inertial mass, as the mass deflects under acceleration, the sensing element generates an analog output signal proportional to the applied acceleration. This output signal is scaled as a voltage which is proportional to the applied acceleration. The accelerometer is powered by a single regulated supply between 5 to 10 Vdc. Thermal drift has been compensated by internal circuit for the best environment stability. The sensing element and electronics are contained in a miniature housing with an integral cable terminated by pigtails or specified connector. Signal ground is isolated from the test object that benefit from the anodized aluminum housing. The accelerometer can be mounted by adhesive. **H40** is well-suited for a wide variety of R&D applications requiring shock survivability and precision measurements.

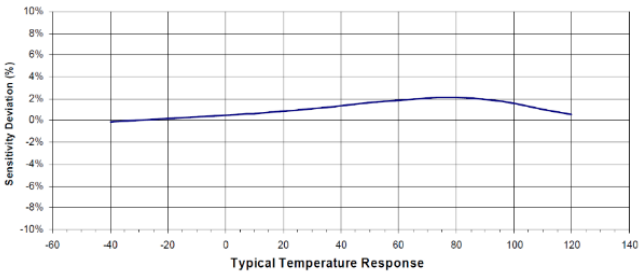








Typical Frequency Response



Typical Temperature Response

H40 Accelerometer

Specification

All values are typical at +24°C (+75°F), 100Hz, and 10Vdc excitation unless otherwise stated.

PARAMETERS	VALUE			UNITS
DASH NO.	-200	-500	-2000	
DYNAMIC RANGE	±200	±500	±2000	g
SENSITIVITY ±10%	6.5	0.4	0.25	mV/g
FREQ RESPONSE ±10%	0-500	0-1000	0-1000	Hz
FREQ RESPONSE ±3dB	0-1300	0-3000	0-5000	Hz
NOISE DENSITY	2.7	2.7	1.4	mg/ √ Hz
RESIDUAL NOISE (PASSBAND)	< 1	< 0.01	< 0.005	mVrms
DAMPING RATIO	>0.7	>0.7	>0.7	
SHOCK LIMIT (any direction)	10,000	10,000	10,000	g

PARAMETERS	VALUE	UNITS
ZERO ACCELERATION OUTPUT	±150	mV
TRANSVERSE SENSITIVITY (OPTION<1)	<3	%
NON-LINEARITY (BFSL)	±1	%FSO
THERMAL ZERO SHIFT, -40 to +85°C, REF 24°C	±1	%FSO
THERMAL SENSITIVITY SHIFT, -40 to +85°C, REF 24°C	±2	%
EXCITATION VOLTAGE	5 to 10	Vdc
EXCITATION CURRENT	<7	mA
OUTPUT IMPEDANCE	32K	Ω
INSULATION RESISTANCE (@100Vdc)	>100	MΩ
TURN ON TIME	<100	mSEC
OPERATING AND STORAGE TEMPERATURE	-40 to +85	°C (°F)
HUMIDITY (HOUSING)	Epoxy Sealed	
HOUSING MATERIAL	Al Alloy Anodized Black	
WEIGHT (CABLE NOT INCLUDED)	1.3	Grams

Accessories

Calibration certificate included.

Part Number	Description	Availability
PJ0048	LEMO FGG-1B-307 connector	Optional
PF0095	Quick dry adhesive epoxy-Loctite® #401	Optional
IN-3062	8 channels data acquisition system	Optional

H40 Accelerometer

Measurement configuration

Sensor	LEMO connector	Data acquisition	Computer
			

Ordering information

H40	-	2K	-	8	C1	-	T
Model	-	Range	-	Cable length	Connector	-	Transverse Sensitivity
H40	-	0.05K=50g 0.1K=100g 0.2K=200g 2K=2000g	-	6=6 meters 8=8 meters 9=9 meters	C*=Connector options Blank=No Connector	-	T=<1% T2=<2% Blank=<3% Z=<25mv

Connector options

C1	C2	C3	C4	
LEMO FGG-1B-307 Dallas Chip: DS2401	**LEMO FGG-1B-307**	**LEMO FGG-1B-307 Dallas Chip: DS2401**	**LEMO FGG-1B-307**	**Blank**
Pin1=N/C Pin2=Dallas pin2 Pin3=+OUT (Green) Pin4=+EXC (Red) Pin5=-EXC (Black) Pin6=-OUT (White) Pin7=N/C Housing=Dallas pin1=Shield	Pin1=N/C Pin2=N/C Pin3=+OUT (Green) Pin4=+EXC (Red) Pin5=-EXC (Black) Pin6=-OUT (White) Pin7=N/C Housing=Shield	Pin1=N/C Pin2=Dallas pin2 Pin3=+OUT (Green) Pin4=+EXC (Red) Pin5=-EXC (Black) Pin6=-OUT (White) Pin7=Housing=Dallas pin1=Shield	Pin1=-OUT (White) Pin2=-EXC (Black) Pin3=+EXC (Red) Pin4=+OUT (Green) Pin5= N/C Pin6=N/C Pin7= N/C Housing=Shield	No connector