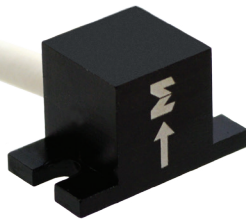


Piezoresistive accelerometer

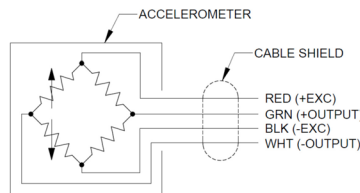
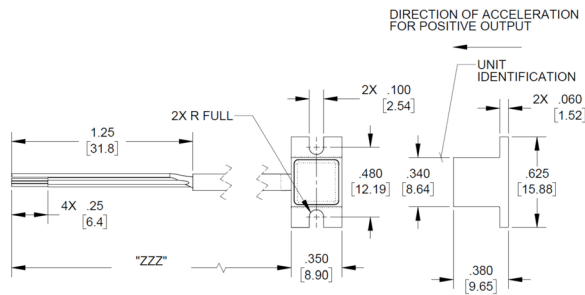
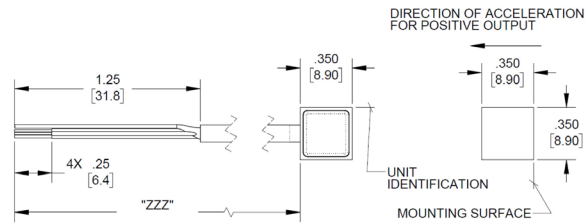
Model 701A - 701F



701A



701F



SCHMATIC

STANDARD TOLERANCE
INCHES [MILLIMETERS]
.XX = ± .02 [X = ± .5]
.XXX = ± .010 [XX = ± .25]

Key features

- DC response - long duration transients
- Mechanical overtravel stops
- Lightly damped
- Small size, rugged
- Crash and shock testing

Model 701A and 701F are small and lightweight piezoresistive accelerometers designed for automotive crash and crush testing. These MEMS accelerometers include mechanical stops and light damping for superior ruggedness in vehicle impact applications. The 701A and 701F feature a full bridge circuit with two active arms and two fixed completion resistors to facilitate shunt calibration. With a frequency response extending down to DC, these accelerometers provide the information needed to measure static acceleration as well as dynamic acceleration.

The Model 701A is designed for adhesive mounting for ultimate flexibility when mounting. The Model 701F is designed for screw mounting with the provided screws.

Recommended electronics for signal conditioning and power supply are the Endevco brand model 126 and 136 and model 436, a general purpose three channel DC conditioner and power supply.

Piezoresistive accelerometer

Model 701A - 701F

Specifications

All specifications are referenced at +75°F (+24°C) and 10 Vdc, unless otherwise noted. Calibration data, traceable to National Institute of Standards and Technology (NIST), is supplied.

Dynamic characteristics

	Units	-1K
Range	g	± 1000
Sensitivity (at 100Hz and 10g)		
Minimum/Nominal/Maximum	mV/V/g	.011/.02/.03
Frequency response (Referenced to 100 Hz)		
± 5% maximum	Hz	0 to 4000
Non-linearity	%	±1
Zero measurand output (max)	mV	±50
Transverse sensitivity	%	3
Thermal zero shift (typ)		
0° to 50°C	%FS0/°C	0.02
32° to 122°F	%FS0/°F	0.01
Thermal sensitivity shift (typ)		
0° to 50°C	%/°C	0.2
32° to 122°F	%/°F	0.1

Electrical characteristics

Excitation	Vdc	2.0, 5.0, 10.0
Resistance		
Input, minimum	ohms	700
Output, maximum	ohms	3000
Fixed resistors	ohms	500 ± 1.0%
Insulation resistance	Mohms	100 min @ 50 Vdc

Physical characteristics

Case material	Anodized aluminum with stycast fill, black
Electrical connections	Integral 4 conductor, # 28 AWG, Teflon insulated leads shielded with white polyurethane jacket
Mounting	
701A	Adhesive
701F	#2-56 socket head cap screws 3.5 in-lbf (0.40 N.m) recommended/4.0 in-lbf (0.45 N.m)
Weight	
701A	0.05 oz (1.4 gm); cable 0.2 oz/ft (19 gm/m), typical
701F	0.06 oz (1.7 gm); cable 0.2 oz/ft (19 gm/m), typical

Environmental

Acceleration limits	
Shock (half-sine pulse duration)	10000 g, 80 µsec or longer
Temperature	
Operating	- 40°C to + 100°C (-40°F to + 212°F)
Storage	Room temperature
Humidity	IP67

Calibration

Frequency response	10 g, 20 to 4,000, ref 100 Hz at 10 V
Sensitivity	10 g, 100 Hz at 2, 5 and 10 V
ZMO	@ 2, 5 and 10 V

Piezoresistive accelerometer

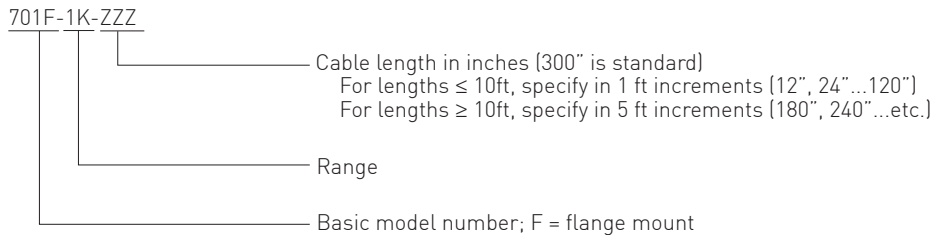
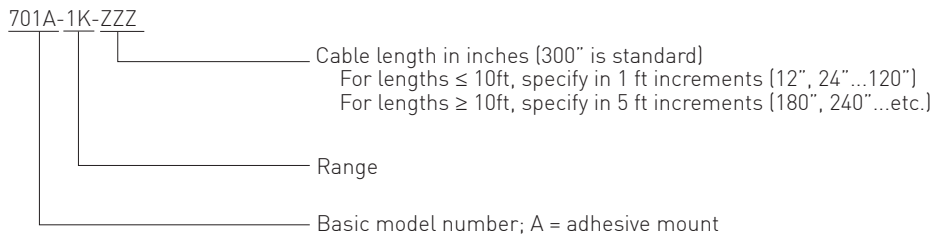
Model 701A - 701F

Accessories

Product	Description	701F
EH136	Screw, socket head, 2-56 x 1/4 alloy steel blk oxide (x2)	Included
EHM178	Allen wrench, 5/64, (x1)	Included

Notes

1. Maintain high levels of precision and accuracy using Endevco's factory calibration services. Call Endevco's inside sales force at 866-ENDEVCO for recommended intervals, pricing and turn-around time for these services as well as for quotations on our standard products.
2. Model number definition:



Contact

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