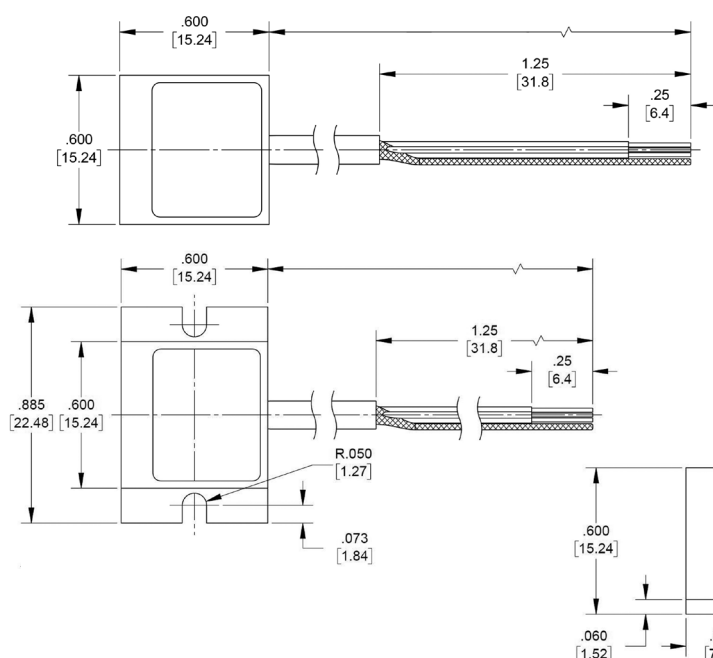


Variable capacitance accelerometer

Model 770A - 770F



Top of sensor may be slightly concave due to settling of potting which does not affect sensor performance.

DIRECTION OF ACCELERATION FOR POSITIVE OUTPUT

MOUNTING SURFACE

Key features

- 2, 10, 30, 50, 100 and 200 g ranges
- Measures motion, low frequencies and tilt
- Frequency response from DC up to 1,500 Hz
- Rugged housing and cable
- U option for 7 to 36 V input
- R option for regulated 5 V input

Description

The ENDEVCO® Model 770A and 770F are low g DC accelerometers that utilize unique variable capacitance microsensors. These accelerometers are designed for measurement of relatively low level accelerations in automotive ride quality, motorsports and high speed rail applications where measurement of whole body motion immediately after the accelerometer is subjected to a shock motion and in the presence of severe vibrational inputs is required.

The 770A and 770F accelerometers are available with a choice of two power options. One option (U) allows for operation from 7V to 36V. The second option (R) allows for operation at a regulated excitation voltage of 5V. These accelerometers feature various full scale g ranges including $\pm 2g$, $\pm 10g$, $\pm 30g$, $\pm 50g$, $\pm 100g$, $\pm 200g$, and provide single-ended output with a 2.5V output bias voltage.

The Model 770A is designed for adhesive mounting for ultimate flexibility when mounting. The Model 770F is designed for screw mounting with the provided screws.

Variable capacitance accelerometer | Model 770A - 770F

All specifications assume +75°F (+24°C) unless otherwise stated. Calibration voltage for -R units is 5Vdc and for -U units is 15Vdc.

Specifications							
Dynamic characteristics	Units	±2	±10	±30	±50	±100	±200
Sensitivity	mV/g	1000 ±50	200 ±10	66 ±4	40 ±2	20 ±1.0	10 ±1.0
Frequency response	Hz						
(±5% max, ref 100 Hz)		0-200	0-800	0-800	0-800	0-1250	0-1500
(±10% typical, ref 100 Hz)		0-350	0-1800	0-2400	0-2400	0-4000	0-4000
(±3dB typical, ref 100 Hz)		0-600	0-2600	0-3000	0-3000	0-5000	0-5000
Zero measurand output	mV	2500 ±75	2500 ±75	2500 ±75	2500 ±75	2500 ±75	2500 ±75
Transverse sensitivity	%	3.0	3.0	3.0	3.0	3.0	3.0
Thermal zero shift (max)	%FSO	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0
-40°C to +100°C (-40°F to +212°F)							
Thermal sens shift (max)	%	±2.0	±2.0	±2.0	±2.0	±2.0	±2.0
-40°C to +100°C (-40°F to +212°F)							
Combined non-linearity and hysteresis	%FSO	±0.5	±0.5	±0.5	±0.5	±0.5	±0.5
Natural frequency	Hz	1300	2700	5500	5500	9800	9800
Threshold (resolution) [1]	equiv. g's.	.0002	.001	.003	.005	.01	.02
Warm-up time (to within 1% of final output value)	30 ms						
Electrical							
Excitation voltage							
For option "R" supply voltage		5 Vdc (Regulated 5V supply required; Maximum 7V without damage)					
For option "U" supply voltage		7 to 36 Vdc (Maximum 45V without damage)					
Current drain		8 mA max					
Output impedance		100 Ohms max					
Load		10k Ohms resistance minimum					
		50 pF capacitance maximum					
Residual noise		100 µVrms typ, 500 µVrms max; 0.5 to 100 Hz					
		500 µVrms typ, 1.0 mVrms max; 0.5 Hz to 10 kHz					
Insulation resistance		100 meg Ohms minimum at 50 Vdc					
Physical							
Weight		6 grams (without cable) plus cable at 19 grams/meter					
Case material		Anodized aluminum alloy					
Cable type		Integral 4 conductor, # 28 AWG Teflon insulated leads, shielded with white polyurethane jacket					
Mounting/torque		Adhesive mount (770A); Two #2-56 Screws (770F)					
Environmental							
Shock limit		10000 g (0.15 mS haversine pulse)					
Operating temperature		-40°C to +100°C (-40°F to +212°F)					
Storage temperature		-40°C to +100°C (-40°F to +212°F)					
Humidity		IP67					
Calibration data							
Sensitivity		Measured at 1 g and 100 Hz for the -2					
		Measured at 10 g and 100 Hz for the -10, -30, -50, -100 and -200					
Frequency response		Measured at 1 g, 20 to 1000 Hz for the -2					
		Measured at 10 g, 20 to 10000 Hz for the -10, -30, -50,-100 and -200					
Zero measurand output		Measured at room temperature					

Variable capacitance accelerometer | Model 770A - 770F

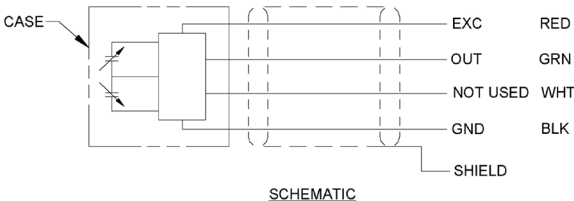
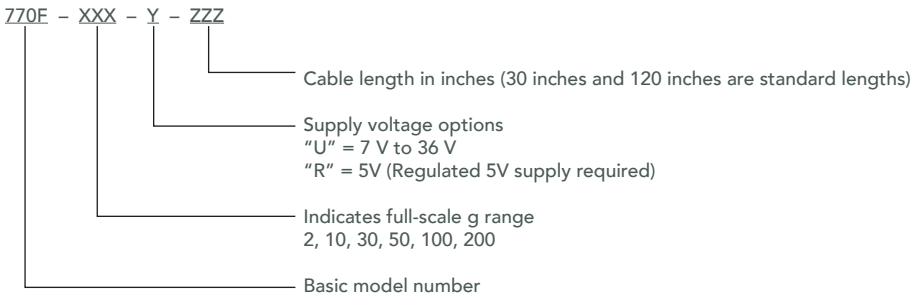
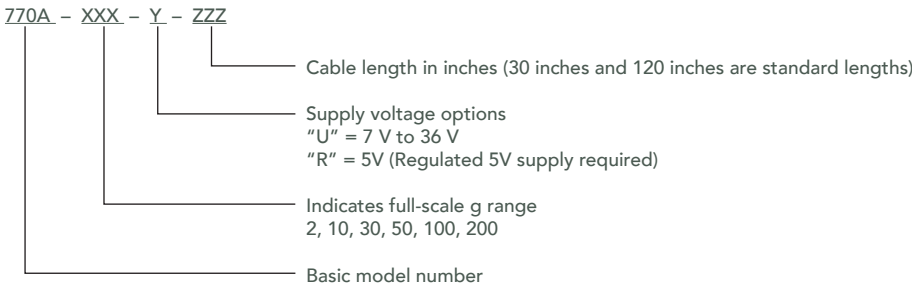
Accessories		
Options	Description	770
EH136	Screw, socket head, 2-56 x ¼ alloy steel blk oxide (x2)	Included
EHM178	Hex wrench	Included
7971	Triaxial mounting block	Optional

Ordering information:

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.

Notes

1. Threshold = 2x max. residual noise; .5 to 100Hz/sensitivity
2. Model number definition:



3425 Walden Avenue, Depew, NY 14043 USA

endevco.com | sales@endevco.com | 866 363 3826

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