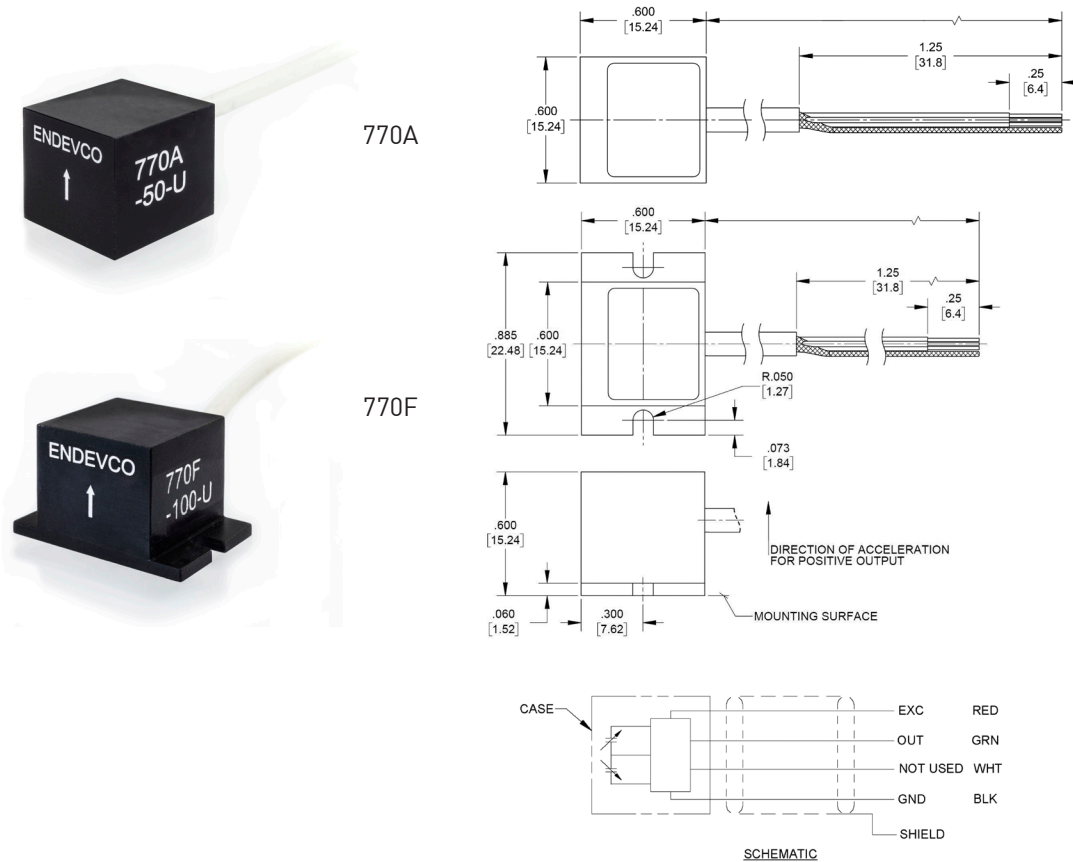


Endevco®

# Variable capacitance accelerometer

## Model 770A - 770F



### 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

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.

## Meggitt Sensing Systems

### Our measurement product competencies:

Piezoelectric accelerometers | Piezoresistive accelerometers | Isotron accelerometers | Variable capacitance accelerometers | Pressure transducers | Acoustic sensors | Electronic instruments | Calibration systems | Shakers | Modal hammers | Cable assemblies

**MEGGITT**  
smart engineering for  
extreme environments



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# Variable capacitance accelerometer

## Model 770A - 770F

### Specifications

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

Dynamic	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	0-900	0-900	0-900	0-1500	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 ±50	2500 ±50	2500 ±50	2500 ±50	2500 ±50	2500 ±50
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
For option "U" supply voltage	7 to 36 Vdc
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
Transverse sensitivity	Measured at 1 g
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



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# Variable capacitance accelerometer

## Model 770A - 770F

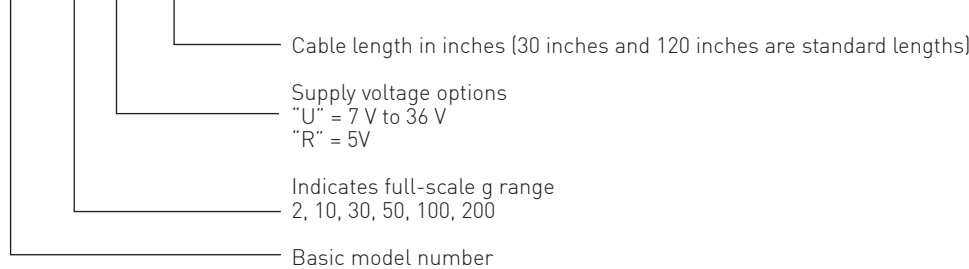
### Accessories

Product	Description	770F
EH136	Screw, socket head, 2-56 x 1/4 alloy steel blk oxide (x2)	Included
EHM178	Hex wrench	Included

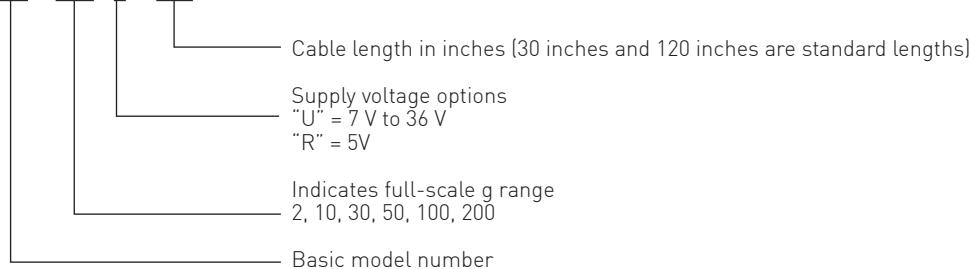
### Notes

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

**770A - XXX - Y - ZZZ**



**770F - XXX - Y - ZZZ**



### Contact

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Continued product improvement necessitates that Meggitt reserve the right to modify these specifications without notice. Meggitt maintains a program of constant surveillance over all products to ensure a high level of reliability. This program includes attention to reliability factors during product design, the support of stringent Quality Control requirements, and compulsory corrective action procedures. These measures, together with conservative specifications have made the name Endevco synonymous with reliability. 121418

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