

July 2005

**Limit Switches  
E49 Compact Metal**

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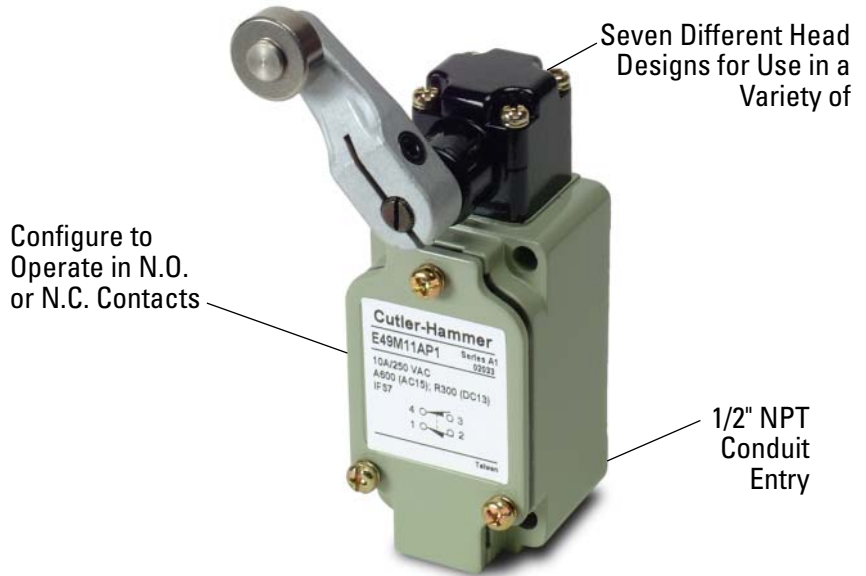
Cutler-Hammer® E49 Compact Metal Switches by Eaton's electrical business are designed with high mechanical strength for robust environments. The rugged aluminum die cast construction provides reliable, oil-tight, waterproof and dustproof sealing for a variety of applications. Snap action 1N.O./1N.C. contacts provide flexibility in design.

**Ratings and Approvals**

- UL Listed
- NEMA A600 (AC-15)
- NEMA R300 (DC-13)
- IP67

For the most current information on this product, visit our web site: [www.EatonElectrical.com](http://www.EatonElectrical.com)








**Compact Size, Metallic Limit Switches Feature 1N.O./1N.C. Contacts for High Reliability in OEM Sensing Applications**



**Product Features**

- Rigid die cast switch housing
- High mechanical strength
- Oil-tight, waterproof and dustproof construction

### Model Selection — E49 Compact Metal Limit Switches

Operating Head Type	Specifications					Catalog Numbers
	Travel to Operate Contacts	Travel to Reset Contacts	Total Travel	Force to Operate Contacts (Maximum)	Minimum Return Force	Assembled Unit (Switch Body and Head)
	1N.O.-1N.C. Contacts					
Roller Lever 	20°	12°	50°	2.99 lb	0.50 lb	<b>E49M11AP1</b>
Top Push 	0.067 in (1.7 mm)	0.04 in (1.0 mm)	—	6.02 lb	2.01 lb	<b>E49M11BP1</b>
Top Push Roller 	0.067 in (1.7 mm)	0.04 in (1.0 mm)	0.25 in (6.5 mm)	6.02 lb	2.01 lb	<b>E49M11CP1</b>
Rod Lever 	20°	12°	50°	0.31 lb	0.06 lb	<b>E49M11DP1</b>
Adjustable Roller Lever 	20°	12°	50°	2.99 lb	0.50 lb	<b>E49M11UP1</b>
Wobble 	1.10 in (28 mm)	N/A	N/A	0.33 lb	N/A	<b>E49M11VP1</b>
Cat Whisker 	1.10 in (28 mm)	N/A	N/A	0.064 lb	N/A	<b>E49M11XM1</b>

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LIMIT SWITCHES

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**Specifications**

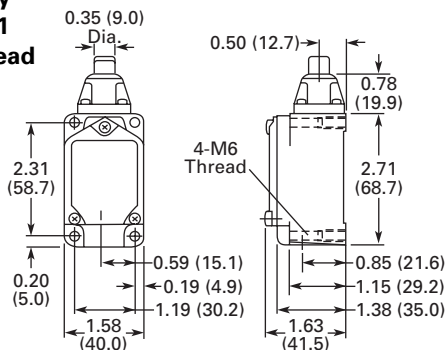
Operating Speed	1 mm to 2 m/sec
Operating Frequency	Mechanically: 120 operations/min.; Electronically: 30 operations/min.
Contact Resistance	15 mΩ max. (initial)
Insulation Resistance	100 MΩ min. (at 500V DC)
Dielectric Strength	1,000V AC, 50/60 Hz for 1 minute between non-continuous terminals; 2,200V AC, 50/60 Hz for 1 minute between each terminal and non-current carrying metal part and between each terminal and ground
Temperature Rise	50 degrees max.
Vibration	Malfunction durability: approx. 1,000 m/sec <sup>2</sup> (approx. 100 Gs); Malfunction durability: approx. 300/sec <sup>2</sup> (30 Gs)
Ambient Temperature	Operating: -50 to 80°C
Humidity	95% RH max.
Service Life	Mechanically: 15,000,000 operations/minute; Electronically: 500,000 operations/minute

**Ratings — Isolated Contacts, No Polarity Restriction**

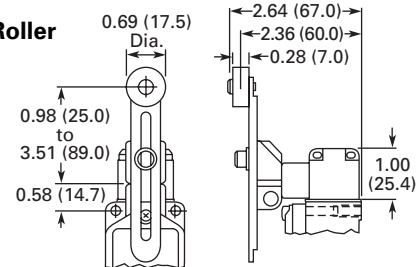
NEMA A600 (AC-15) 50 or 60 Hz						NEMA R300 (DC-13)	
Rated Voltage	Current		Voltamperes		Rated Voltage	Current	
	Continuous	Make	Break	Make			Break
24V AC	10A	60A	6.0A	7200 VA	720 VA	24V DC	1.5A
120V AC	10A	60A	6.0A	7200 VA	720 VA	120V DC	0.22A
240V AC	10A	30A	3.0A	7200 VA	720 VA	240V DC	0.11A
480V AC	10A	15A	1.5A	7200 VA	720 VA		
600V AC	10A	12A	1.2A	7200 VA	720 VA		

**Approximate Dimensions in Inches (mm)**

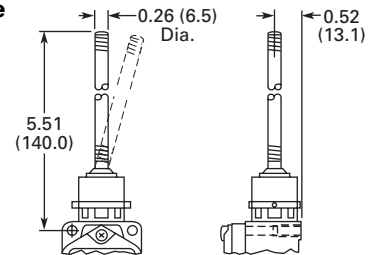
**Switch Body with E49BP1 Top Push Head**



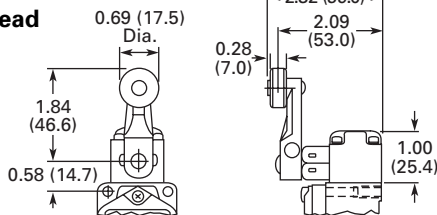
**E49UP1 Adjustable Roller Lever Head**



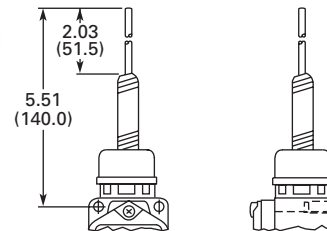
**E49VP1 Wobble Head**



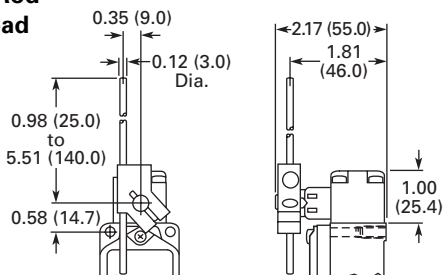
**E49AP1 Roller Lever Head**



**E49XM1 Cat Whisker Head**



**E49DP1 Rod Lever Head**



**E49CP1 Top Push Roller Head**

