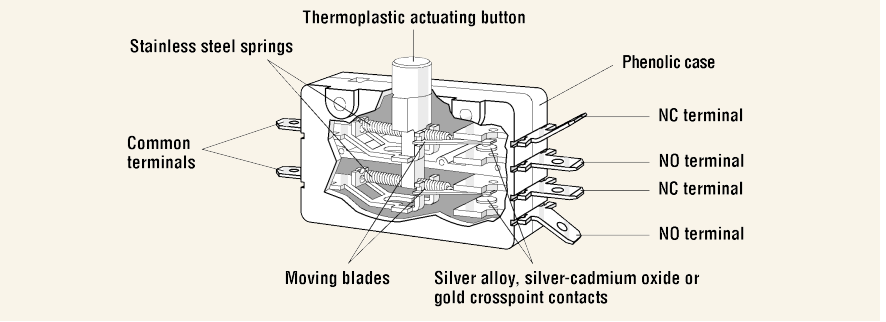
GENERAL PURPOSE — SINGLE & DOUBLE POLE

# E Series

## Features

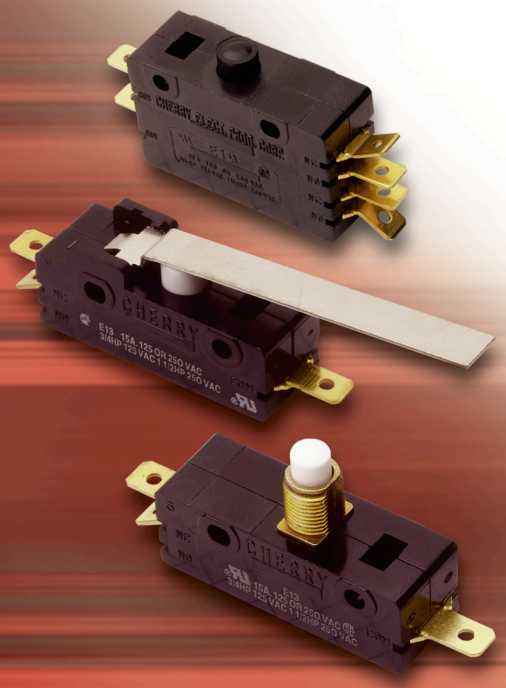
- 5 current ratings
- Choice of actuator styles
- 3 terminal types (optional screw terminals available — consult factory)
- 3 contact arrangements
- Long-life coil spring mechanism
- High-temperature 150°C and 200°C available on select models (consult factory)




## Electrical Ratings

| Switch Series | EN61058 Rating | UL1054 Rating | Electrical Life at Rated Load According to VDE (Min. Operations) | Electrical Life at Rated Load According to UL (Min. Operations) |
|---|---|---|---|---|
| **E13/E19** | N/A | 15A, 125/250VAC; 3/4HP, 125VAC<br>1-1/2HP, 250VAC; 2A, 48 VDC *(E13 Only)*** | N/A | 6,000* |
| **E19A**<br>*(mixed ratings)* | N/A | 15A, 125/250VAC; 3/4HP, 125VAC; 1-1/2HP, 250VAC<br>0.1A, 125VAC | N/A | 6,000 |
| **E14/E25** | N/A | 25A, 125/250VAC; 1HP, 125VAC<br>2HP, 250VAC; 2A, 48VDC *(E14 Only)*** | N/A | 6,000 |
| **E20** | N/A | 20A, 125/250VAC; 1HP, 125VAC<br>2HP, 250VAC | N/A | 6,000 |
| **E28/E29** | N/A | 30.1A, 125/250/277VAC<br>*(UL Approved Only — Resistive Load Only)* | N/A | 6,000 |
| **E30** | N/A | 30.1A, 125/250VAC; 1HP, 125VAC<br>2HP, 250VAC *(UL Only)* | N/A | 6,000 |
| **G13/G20** | N/A | 0.1A, 125VAC<br>0.1A, 30VDC *(G13 Only)* | N/A | 6,000* |

*Indicates 100K life available.
**100K Hi-temp not available



## Specifications

**Electrical**

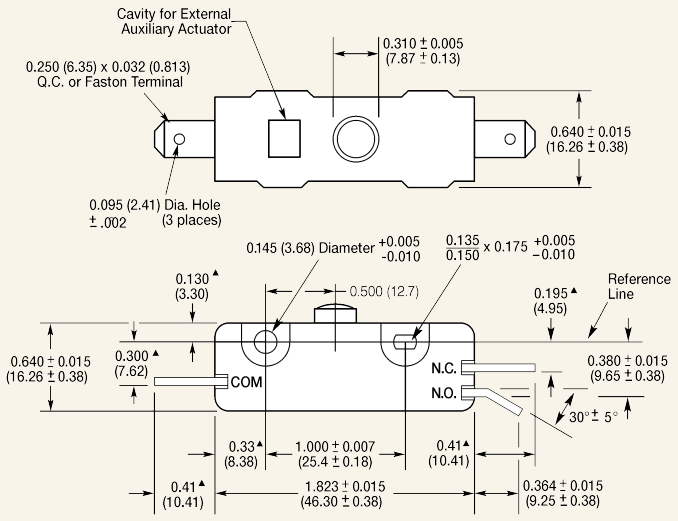
| | |
|---|---|
| Temperature Rating: | 105°C Std. *(150°C and 200°C optional — E13, E14, E19, E20, G13)*<br>85°C Std. *(E28 and E29)*, 85°C Std. *(150°C optional) E25* |
| Flammability Rating: | UL94HB |

**Materials**

| | |
|---|---|
| Case: | General Purpose Phenolic |
| Actuating Button: | Thermoplastic Nylon |
| Common Terminals: | Brass *(E13, E19, E19A, G13, G20)*, Silver-Plated Brass *(E14, E20), Silver-Plated Copper (E28, E29, E30)* |
| NO and NC Terminals: | Brass *(E13, E19, E19A, G13, G20)*<br>Copper *(E14, E20, E28, E29, E30)* |
| Moving Blade: | Brass *(E13, E19, E19A, G13, G20)*<br>Silver-Plated Beryllium Copper *(E14, E20, E28, E29, E30)* |
| Spring: | Stainless Steel |
| Auxiliary Actuators: | Cold-Rolled Steel (Nickel-Plated) |
| Roller: | Sintered Stainless Steel |
| Contacts: | Gold Crosspoint *(G13, G20, E19A)*<br>Silver-Cadmium Oxide *(E13, E14, E19, E19A, E20, E28, E29, E30)*<br>Silver Alloy *(E19A, E29, E30)* |

c US *(T200: E13, G13, E14, E19 and E20)*

## Dimensions — Single Pole inches (mm)




▲ (All tolerance ± .015)

## Actuator Specifications — Single Pole

| Series/ Prefix | Actuator Type | Switch Type | Maximum Operating Force (g) | Maximum Pre-Travel inches (mm) | Operating Point* inches (mm) | Minimum Over-Travel inches (mm) | Max. Movement Differential inches (mm) | Actuation Length** inches (mm) |
|---|---|---|---|---|---|---|---|---|
| E13/G13 | –00E | | 425 | 0.050 (1.27) | 0.285±0.020♦ (7.24±0.51) | 0.100 (2.54) | 0.015 (0.38) | — |
| E14/E29/E30 | –00A | | 850 | 0.100 (2.54) | 0.248±0.026♦ (6.30±0.66) | 0.050 (1.27) | 0.015 (0.38) | — |
| E13/G13 | –00J | | 425 | 0.050 (1.27) | 0.670±0.030 (17.02±0.76) | 0.108 (2.74) | 0.015 (0.38) | — |
| E14/E29/E30 | | | 850 | 0.100 (2.54) | 0.633±0.030 (16.08±0.76) | 0.050 (1.27) | 0.015 (0.38) | — |
| E13/G13 | –00M | | 425 | 0.050 (1.27) | 0.812±0.030 (20.63±0.76) | 0.218 (5.54) | 0.015 (0.38) | — |
| E14/E29/E30 | | | 850 | 0.100 (2.54) | 0.775±0.030 (19.69±0.76) | 0.168 (4.27) | 0.015 (0.38) | — |
| E13/G13 | –00H | | 100 | 0.250 (6.35) | 0.312±0.062 (7.93±1.57) | 0.187 (4.75) | 0.093 (2.36) | 1.500 (38.10) |
| E14/E29/E30† | | | 285 | 0.312 (7.93) | 0.468±0.062 (11.89±1.57) | 0.105 *** (2.67) | 0.050 (1.27) | 0.821 (20.85) |
| E13/G13 | –50H | | 65 | 0.343 (8.71) | 0.281±0.062 (7.14±1.57) | 0.187 (4.75) | 0.140 (3.56) | 1.750 (44.45) |
| E14/E29/E30† | | | 170 | 0.525 (13.34) | 0.437±0.062 (11.10±1.57) | 0.218 (5.54) | 0.080 (2.03) | 1.071 (27.20) |
| E13/G13 | –00K | | 100 | 0.250 (6.35) | 0.718±0.062 (18.24±1.57) | 0.187 (4.75) | 0.093 (2.36) | 1.391 (35.33) |
| E14/E29/E30† | | | 285 | 0.348 (8.84) | 0.860±0.062 (21.84±1.57) | 0.130 (3.30) | 0.045 (1.14) | 0.688 (17.47) |
| E13/G13 | –50K | | 63 | 0.403 (10.24) | 0.687±0.062 (17.45±1.57) | 0.187 (4.75) | 0.093 (2.36) | 1.625 (41.28) |
| E14/E29/E30† | | | 211 | 0.483 (12.27) | 0.828±0.062 (21.03±1.57) | 0.218 (5.54) | 0.073 (1.85) | 0.943 (23.95) |

* Measured above reference line. Refer to dimensional drawing above. **Actuator tolerance ±0.031 inches (0.79mm).
†E14, E29 and E30 actuators are shorter and formed up 11° at the button.
*** E30 minimum over-travel is 0.150 (3.81). ♦ G13 and E30 have operating point tolerances of ± 0.30.

## Ordering Information

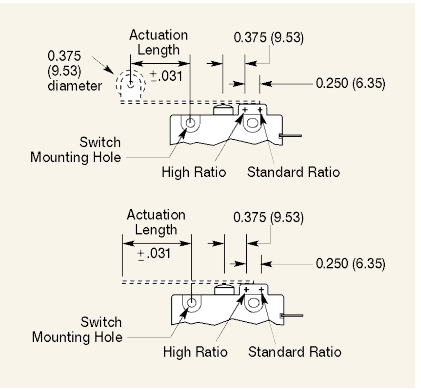
Select the current rating you need. Combine the corresponding Series/Prefix number with the appropriate suffix number for the switch you need.

## Mounting — Single Pole

Recommended mounting screw: #6-32 round head. Recommended torque on screw: 6 inch lbs. max. Recommended maximum torque for ferrule: 20 inch pounds

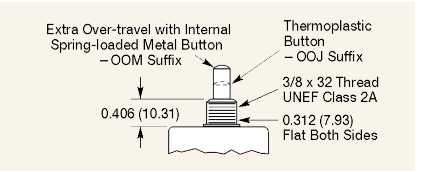
## Actuators — Single Pole

Standard type integral hinged lever and roller actuators are available in choice of two mounting positions. Actuation lengths are dimensioned from centerline of switch mounting hole as shown.




## "J" & "M" Type Optional Hardware — Single Pole

| | |
|---|---|
| Brass Hex Nut | 0012-0023 |
| Brass Knurled Nut | 0012-0025 |
| Brass Hex Nut *(Nickel-Plated)* | 0012-0028 |
| Brass Knurled Nut *(Nickel-Plated)* | 0012-0026 |
| Star Washer *(Lockwasher)* | 0012-0073 |




## Circuitry — Single Pole

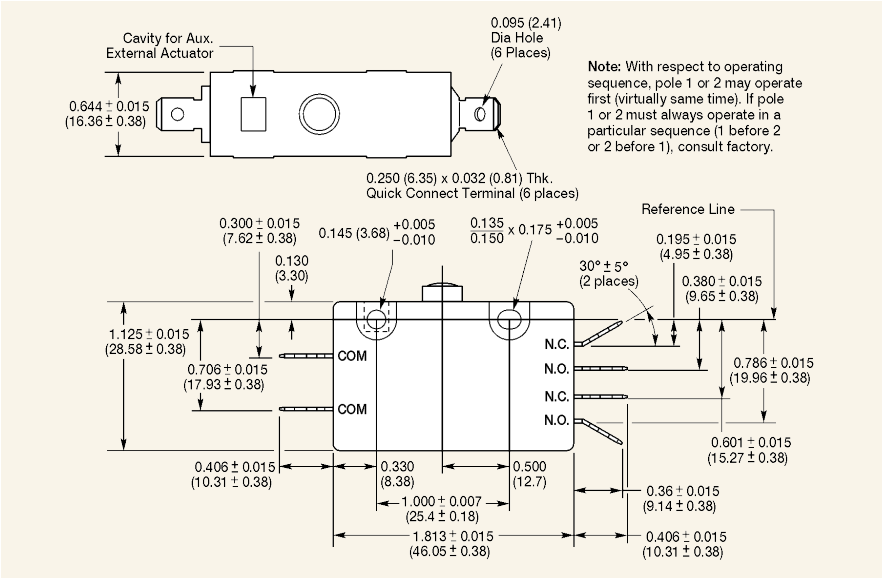
Contact arrangement available in choice of single pole double throw or single pole single throw, either normally open or normally closed. In general, normally open may be specified by changing suffix number from 00 to 01 and normally closed by changing suffix number to 02.

Example: E13-00E is double throw, E13-01E is normally open, and E13-02E is normally closed.

## Terminals — Single Pole

Standard 0.250″ x 0.032″ (6.35mm x 0.81mm) [Optional 0.187″ x 0.032″ (4.75mm x 0.81mm)] QC terminals can be furnished with angle formed up or down. Forms include straight 30°, 45°, 85° up or down. Other forms can be provided.

## Dimensions — Double Pole inches (mm)




## Actuator Specifications — Double Pole

| Series/ Prefix | Actuator Type | Switch Type | Maximum Operating Force (g) | Maximum Pretravel inches (mm) | Operating Point* inches (mm) | Minimum Overtravel inches (mm) | Each Pole Max. Movement Differential inches (mm) | Actuation Length inches (mm) |
|---|---|---|---|---|---|---|---|---|
| E19/G20 | –00A | | 850 | 0.050 (1.27) | 0.285±0.030 (7.24±0.76) | 0.080 (2.03) | 0.015 (0.38) | — |
| E20/E28 | | | 1280 | 0.100 (2.54) | 0.248±0.030 (6.30±0.76) | 0.050 (1.27) | 0.015 (0.38) | — |
| E19/G20 | –-00J | | 850 | 0.050 (1.27) | 0.670±0.030 (17.02±0.76) | 0.080 (2.03) | 0.015 (0.38) | — |
| E20/E28† | | | 1280 | 0.100 (2.54) | 0.630±0.030 (16.00±0.76) | 0.050 (1.27) | 0.015 (0.38) | — |
| E19/G20 | –00M | | 850 | 0.050 (1.27) | 0.812±0.030 (20.62±0.76) | 0.218 (5.54) | 0.015 (.038) | — |
| E20/E28† | | | 1280 | 0.100 (2.54) | 0.774±0.030 (19.66±0.76) | 0.188 (4.78) | 0.015 (0.38) | — |
| E19/G20 | –00H | | 205 | 0.275 (6.99) | 0.312±0.062 (7.92±1.57) | 0.187 (4.75) | 0.093 (2.36) | 1.500 (38.10) |
| E20/E28† | | | 425 | 0.330 (8.38) | 0.468±0.062 (11.89±1.57) | 0.156 (3.96) | 0.050 (1.27) | 0.821 (20.85) |
| E19/G20 | –50H | | 130 | 0.400 (10.16) | 0.281±0.062 (7.14±1.57) | 0.187 (4.75) | 0.140 (3.56) | 1.750 (44.45) |
| E20/E28† | | | 285 | 0.600 (15.24) | 0.437±0.062 (11.10±1.57) | 0.156 (3.96) | 0.080 (2.03) | 1.071 (27.20) |
| E19/G20 | –00K | | 212 | 0.250 (6.35) | 0.718±0.062 (18.24±1.57) | 0.187 (4.75) | 0.093 (2.36) | 1.391 (35.33) |
| E20/E28† | | | 425 | 0.348 (8.84) | 0.860±0.062 (21.84±1.57) | 0.156 (3.96) | 0.045 (1.14) | 0.688 (17.48) |
| E19/G20 | –50K | | 150 | 0.312 (7.92) | 0.687±0.062 (17.45±1.57) | 0.187 (4.75) | 0.140 (3.56) | 1.625 (41.28) |
| E20/E28† | | | 312 | 0.525 (13.34) | 0.828±0.062 (21.03±1.57) | 0.146 (3.71) | 0.075 (1.91) | 0.943 (23.95) |

* Measured above reference line. Refer to dimensional drawing above. **Actuator tolerance ±.0.031 inches (0.79mm).
†E20 and E28 actuators are shorter and formed up 15° at the button.
Contact factory for E25 specifications.

## Ordering Information

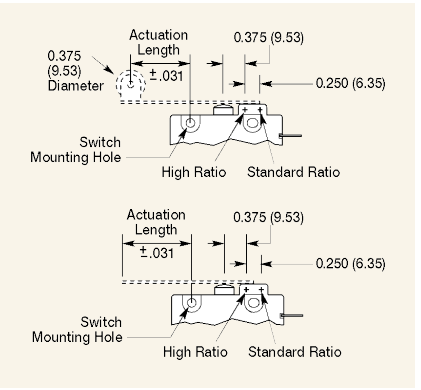
Select the current rating you need. Combine the corresponding Series/Prefix number with the appropriate suffix number for the switch you need. Note: Consult factory for part number when ordering E19A switches.

## Mounting — Double Pole

Recommended mounting screw: #6-32 round head. Recommended torque on screw: 6 inch lbs. max. Recommended maximum torque for ferrule: 20 inch pounds.

## Actuators — Double Pole

Standard type integral hinged lever and roller actuators are available in choice of two mounting positions. Actuation lengths are dimensioned from centerline of switch mounting hole as shown.

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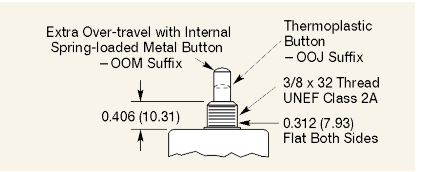
| Brass Hex Nut *(Nickel-Plated)* | 0012-0028 |
| Brass Knurled Nut *(Nickel-Plated)* | 0012-0026 |
| Star Washer *(Lock Washer)* | 0012-0073 |




## Circuitry — Double Pole

Contact arrangement available in choice of single pole double throw or single pole single throw, either normally open or normally closed. In general, normally open may be specified by changing suffix number from 00 to 01 and normally closed by changing suffix number to 02.

Example: E19-00A is double throw, E19-01A is normally open, and E19-02A is normally closed.

## Terminals — Double Pole

Standard 0.250″ x 0.032″ (6.35mm x 0.81mm) [Optional 0.187″ x 0.032″ (4.75mm x 0.81mm)] QC terminals can be furnished with angle formed up or down on common as well as open or closed terminal. Forms include straight 30°, 45°, 85° up or down. Other forms can be provided.