

### Selector Switch Operators



**2-Position Maintained  
Black Knob Selector  
Switch — Cam 1  
Cat. No. 10250T1311**



**3-Position Maintained Black  
Lever Selector Switch —  
Cam 3  
Cat. No. 10250T3023**



**2-Position Maintained  
Horizontal Mount, Key  
Removal #1 Keyed  
Selector Switch — Cam 1  
Cat. No. 10250T16111**

### Selector Switch Operators with Caps

**Table 47-255. Selector Switch Operators with Caps — UL (NEMA) 3, 3R, 4, 4X, 12, 13**

| Positions              | Operator Action ① | Black Knob Selector Switch — Vertical Mounting ③ |                |               | Black Lever Selector Switch — Vertical Mounting ③ |                |               |
|------------------------|-------------------|--|----------------|---------------|---|----------------|---------------|
|                        |                   | Cam Code ②                                       | Catalog Number | Price U.S. \$ | Cam Code ②  | Catalog Number | Price U.S. \$ |
| 2-Position — 60° Throw |                   | 1  | 10250T1311     | 24.80         | 1   | 10250T3011     | 24.80         |
|                        |                   | 1  | 10250T1371     | 38.50         | 1   | 10250T3071     | 38.50         |
| 3-Position — 60° Throw |                   | 2  | 10250T1322     | 24.80         | 2   | 10250T3022     | 24.80         |
|                        |                   | 3  | 10250T1323     | 24.80         | 3   | 10250T3023     | 24.80         |
|                        |                   | 2  | 10250T1332     | 38.50         | 2   | 10250T3032     | 38.50         |
|                        |                   | 3  | 10250T1333     | 38.50         | 3   | 10250T3033     | 38.50         |
|                        |                   | 2  | 10250T1342     | 38.50         | 2   | 10250T3042     | 38.50         |
|                        |                   | 3  | 10250T1343     | 38.50         | 3   | 10250T3043     | 38.50         |
| 4-Position — 40° Throw |                   | 2  | 10250T1352     | 38.50         | 2   | 10250T3052     | 38.50         |
|                        |                   | 3  | 10250T1353     | 38.50         | 3   | 10250T3053     | 38.50         |
| 4-Position — 40° Throw |                   | 7  | 10250T1367     | 24.80         | 7   | 10250T3067     | 24.80         |

① M = Maintained. S = Spring return in direction of arrow (→).

② For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and table on **Pages 47-145 – 47-146**.

③ Field convertible to Horizontal Mounting or order operator only and separate operator cap.

**Table 47-256. Key Operators with Cam — UL (NEMA) 3, 3R, 4, 4X, 12, 13**

| Positions              | Operator Action ④ | Cam Code ⑤ | Catalog Number    |                     | Optional Key Removal Positions ⑥ | Price U.S. \$ |
|------------------------|-------------------|------------|-------------------|---------------------|----------------------------------|---------------|
|                        |                   |            | Vertical Mounting | Horizontal Mounting |                                  |               |
| 2-Position — 60° Throw |                   | 1          | 10250T1511_       | 10250T1611_         | 1, 2, 3                          | 65.50         |
|                        |                   | 1          | 10250T1571_       | 10250T1581_         | 2                                | 79.00         |
| 3-Position — 60° Throw |                   | 2          | 10250T1522_       | 10250T1622_         | 1 – 7                            | 65.50         |
|                        |                   | 3          | 10250T1523_       | 10250T1623_         |                                  | 65.50         |
|                        |                   | 2          | 10250T1532_       | 10250T1632_         | 1, 4, 5                          | 79.00         |
|                        |                   | 3          | 10250T1533_       | 10250T1633_         |                                  | 79.00         |
|                        |                   | 2          | 10250T1542_       | 10250T1642_         | 4                                | 79.00         |
|                        |                   | 3          | 10250T1543_       | 10250T1643_         |                                  | 79.00         |
| 4-Position — 40° Throw |                   | 2          | 10250T1652_       | 10250T1662_         | 2, 4, 6                          | 79.00         |
|                        |                   | 3          | 10250T1653_       | 10250T1663_         |                                  | 79.00         |
| 4-Position — 40° Throw |                   | 7          | 10250T1677_       | 10250T1687_         | 7                                | 65.50         |

④ M = Maintained. S = Spring return in direction of arrow (→).

⑤ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and table on **Pages 47-145 – 47-146**.

⑥ Choose key removal position required for application from **Table 47-257** on **Page 47-148**. Add key removal Code No. to listed Catalog Number. Example: 10250T15112.

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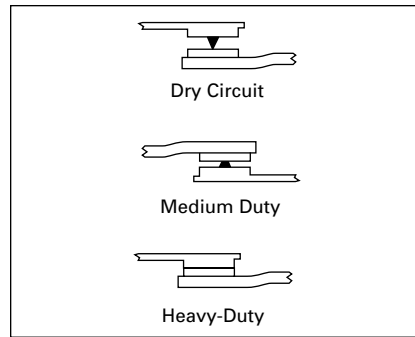
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**Product Description**

The 30.5 mm pushbutton line features a zinc die cast construction with chrome-plated housing and mounting nut. The same durable construction is also available with the corrosive resistant E34 line of pushbuttons. See E34 section on **Pages 47-177 – 47-204**.

**Reliability Nibs**

Cutler-Hammer contact blocks feature enclosed silver contacts with pointed “reliability nibs” for reliable performance from logic level up to 600V. To ensure reliable switching, nibs bite through oxide which can form on silver contacts, eliminating the need for expensive logic level blocks for most applications.



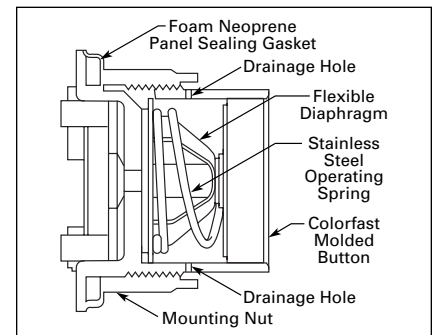
**Figure 47-46. Reliability Nibs**

Reliability nibs improve performance in dry circuit, corrosive, fine dust and other contaminated atmospheres. Under normal environmental conditions, the minimum operational voltage is 5V and the minimum operational current is 1 mA, AC/DC. For operation under a wider range of environmental conditions, logic level contact blocks with inert palladium tipped contacts are recommended.

**Diaphragm Seal with Drainage Holes**

**Liquid Drainage**

Cutler-Hammer pushbutton operators offer front of panel drainage via holes in the operator bushing. Hidden from view by the mounting nut, these holes prevent buildup of liquid inside the operator, which can prevent operation in freezing environments. The holes also provide a route for escaping liquid in high pressure washdowns, effectively relieving pressure from the internal diaphragm seal, ensuring reliable sealing in applications even beyond NEMA 4.



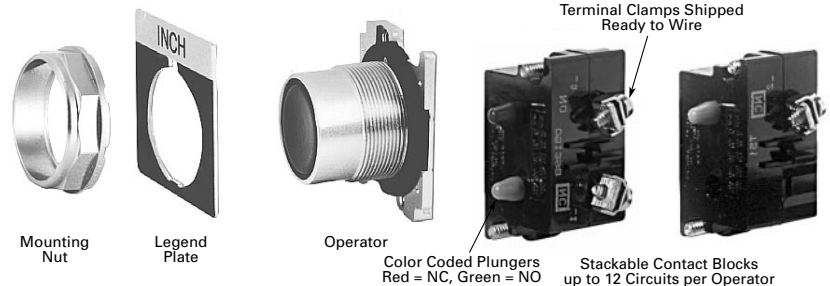
**Figure 47-47. Diaphragm Seal**

**Grounding of 10250T Operators**

10250T line operators have “grounding nibs” — four metal points on the operator casting designed to bite through most paints and other coatings on metal panels to enhance the ground connection when the operator is securely tightened.



**Grounding Nibs**



**10250T Series**

## 10250T Series, Technical Data

### Features

- Heavy-duty zinc die cast construction
- Enclosed silver contacts with reliability nibs
- Diaphragm seals with drainage holes
- Grounding nibs on the operator casing

### Benefits

- Reliability nibs improve contact reliability even under dry circuit and fine dust conditions
- Drainage holes prevent buildup of liquid inside the operator which can prevent operation in freezing environments
- Grounding nibs bit through paint and other coatings to provide secure ground

### Contact Operation

Slow make and break. All normally closed contacts have positive opening operation, i.e., normally closed contacts are forced open in the event of contact weld or spring breakage.

### Standards and Certifications

- CE EN60947-5-1
- UL 508 — File No. 131568
- CSA C22.2 No. 14 — File No. LR68551

### Ingress Protection

- Standard Indicating Lights
  - NEMA 1, 2, 3, 3R, 3S, 4, 4X, 12, 13
  - IEC IP65
- All Other Operators
  - NEMA 1, 2, 3, 3R, 4, 4X, 12, 13
  - IEC IP65

### Technical Data

#### Mechanical Ratings

- Frequency of operation
  - All pushbuttons: 6000 operations/hr.
  - Key and lever selector switches: 3000 operations/hr.
  - Auto-latch devices: 1200 operations/hr.
- Life
  - Pushbuttons:  $10 \times 10^6$  operations
  - Contact blocks:  $10 \times 10^6$  operations
  - PresTest units:  $10 \times 10^6$  operations
  - Lever and key selector switches:  $0.25 \times 10^6$  operations
  - Twist to release pushbuttons:  $0.3 \times 10^6$  operations
- Shock resistance
  - Duration:  $20 \text{ mS} \geq 5\text{g}$

#### Climate Conditions

- Operating
  - Maximum  $140^\circ\text{F}$  ( $60^\circ\text{C}$ ) at 95% RH, Temperature  $1^\circ$  to  $150^\circ\text{F}$  ( $-17^\circ$  to  $66^\circ\text{C}$ ) altitude 6562 feet (2000m)
- Storage
  - Maximum  $140^\circ\text{F}$  ( $60^\circ\text{C}$ ) at 95% RH, Temperature  $-40^\circ$  to  $176^\circ\text{F}$  ( $-40^\circ$  to  $80^\circ\text{C}$ )

#### Terminals

- Marking
  - NC-NO on the contact block to meet the NEMA requirements. Dual marking system 1 – 2 for normally closed, 3 – 4 for normally open to meet BS5472 (Cenelec EN50 005)
- Clamps
  - Terminals are saddle clamp type for  $1 \times 22 \text{ AWG}$  ( $0.34 \text{ mm}^2$ ) to  $2 \times 14 \text{ AWG}$  ( $4.0 \text{ mm}^2$ ) conductors
- Torque = 7 lb-in (0.8 Nm)
- Degree of protection against direct electrical contact: IP2X with fingerproof shroud

#### Light Units

- Transformers: will withstand short circuit for 1 hour per IEC 60997-5-1
- Bulbs — average life
  - Transformer type: 20,000 hrs.
  - Resistor/direct voltage type: 2500 hrs. minimum @ rated V
  - LED: 60,000 to 100,000 hrs.

**Note:** For additional technical information, see Pub. **TD.7.4.TE.04**.

#### Electrical Ratings

- Insulation:  $U_i = 660\text{V AC}$  or DC
- Thermal:  $I_{th} = 10\text{A}$
- Short circuit (IEC 60947-5-1): 1000A with a 6A (NIT) fuse (to BS88)
- NEMA, UL rating: A600, P600
  - AC load life duty cycle 1200 operations/hour
    - 10A:  $110\text{V pf } 0.4 - 1 \times 10^6$  operations
    - 5A:  $250\text{V pf } 0.4 - 1 \times 10^6$  operations
    - 2A:  $660\text{V pf } 0.4 - 1 \times 10^6$  operations
- Switching capacity
  - AC15 rated make/break ( $11 \times I_e$  at  $1.1 \times U_e$ )
    - 6A:  $120\text{V pf } 0.3$
    - 4A:  $240\text{V pf } 0.3$
    - 2A:  $660\text{V pf } 0.3$
  - DC13 rated make/break ( $1.1 \times I_e$  at  $1.1 \times U_e$ )
    - 1.0A:  $125\text{V L/R} \geq 0.95$  at 300 mS
    - .55A:  $250\text{V L/R} \geq 0.95$  at 300 mS
    - .1A:  $660\text{V L/R} \geq 0.95$  at 300 mS
    - 10A: 110V pure resistive
- Maximum ratings for logic level and hostile atmosphere application
  - Maximum amperes: 0.5A
  - Maximum volts: 120V AC/DC

**Table 47-204. Contact Block**

| Meet or Exceed NEMA Rating Designations A600, A300 and B300 for AC and P600 for DC |                      |      |      |      |          |     |      |
|--|----------------------|------|------|------|----------|-----|------|
| Description  | Volts AC 50 or 60 Hz |      |      |      | Volts DC |     |      |
|  | 120                  | 240  | 480  | 600  | 24/28    | 125 | 250  |
| Make and Emerg. Interrupting Capacity (Amp)  | 60                   | 30   | 15   | 12   | 5.7      | 1.1 | 0.55 |
| Normal Load Break (Amp)  | 6                    | 3    | 1.5  | 1.2  | 5.7      | 1.1 | 0.55 |
| Thermal Current (Amp)  | 10                   | 10   | 10   | 10   | 5.0      | 5.0 | 5.0  |
| Voltamperes:   |                      |      |      |      |          |     |      |
| Make and Emerg. Interrupting Capacity  | 7200                 | 7200 | 7200 | 7200 | 138      | 138 | 138  |
| Normal Load Break  | 720                  | 720  | 720  | 720  | 138      | 138 | 138  |