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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 47-166 – 47-189**.

Reliability Nibs

Eaton’s 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.

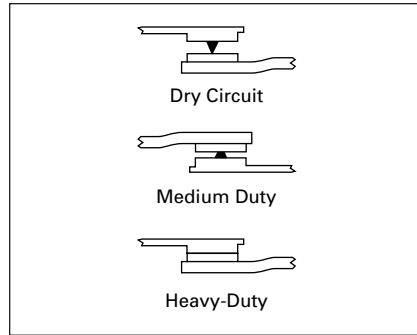
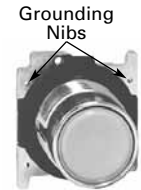


Figure 47-90. Reliability Nibs

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.

Grounding Nibs

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

Diaphragm Seal with Drainage Holes

Liquid Drainage

Eaton’s 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 wash-downs, effectively relieving pressure from the internal diaphragm seal, ensuring reliable sealing in applications even beyond NEMA 4.

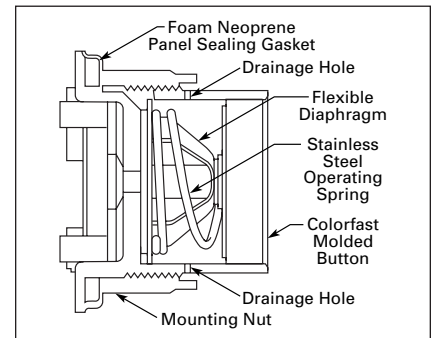
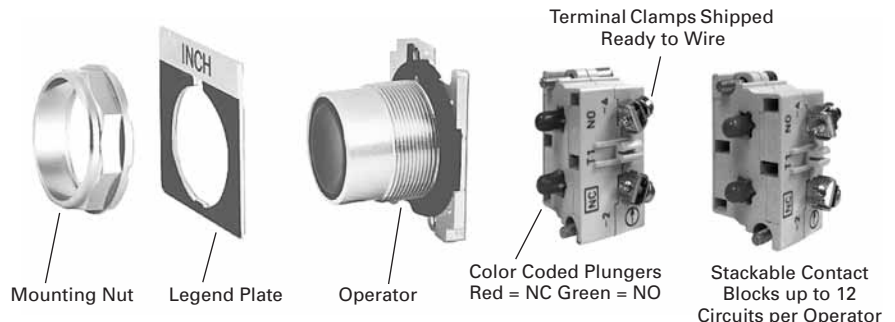


Figure 47-91. Diaphragm Seal



10250T Series, Technical Data and Specifications

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

When mounted in similarly rated enclosure —

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

Technical Data and Specifications

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 x 10⁶ operations
- Contact blocks: 10 x 10⁶ operations
- PresTest units: 10 x 10⁶ operations
- Lever and key selector switches: 0.25 x 10⁶ operations
- Twist to release pushbuttons: 0.3 x 10⁶ operations
- Shock resistance
 - Duration: 20 mS ≥ 5g

Climate Conditions

- Operating Temperature: 1° to 150°F (-17° to 66°C)
- Storage Temperature: -40° to 176°F (-40° to 80°C)
- Altitude: 6,562 ft. (2,000m)
- Humidity: Max. 95% RH @ 60°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 x 22 AWG (0.34 mm²) to 2 x 14 AWG (2.5 mm²) 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.

Electrical Ratings

- Insulation: U_i = 660V AC or DC
- Thermal: I_{th} = 10A

Short Circuit Coordination to IEC/EN 60947-5-1

- Rated conditional short circuit current: 1 kA
- Fuse type: GE Power Controls TIA 10, Red Spot Type gG, 10A, 660V AC, 460V DC, BS88-2, IEC 60269-2-1



Fuse







- UL rating: A600, P600
 - AC load life duty cycle 1200 operations/hour
 - 10A: 110V pf 0.4 – 1 x 10⁶ operations
 - 5A: 250V pf 0.4 – 1 x 10⁶ operations
 - 2A: 660V pf 0.4 – 1 x 10⁶ operations
- Switching capacity
 - AC15 rated make/break (11 x I_e at 1.1 x U_e)
 - 6A: 120V pf 0.3
 - 4A: 240V pf 0.3
 - 2A: 660V pf 0.3
 - DC13 rated make/break (1.1 x I_e at 1.1 x U_e)
 - 1.0A: 125V L/R ≥ 0.95 at 300 mS
 - .55A: 250V L/R ≥ 0.95 at 300 mS
 - .1A: 660V L/R ≥ 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 47-171. 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

Pushbuttons

**Table 47-174. Momentary Pushbutton Operators, Non-illuminated —
UL (NEMA) Type 3, 3R, 4, 4X, 12, 13**

	Color	Catalog Number	Price U.S. \$
Flush Button ①			
	Black	10250T101	
	Red	10250T102	
	Green	10250T103	
	Yellow	10250T104	
	Gray	10250T105	
	White	10250T106	
	Blue	10250T108	
	Orange	10250T109	
	Extended Button		
	Black	10250T111	
	Red	10250T112	
	Green	10250T113	
	Yellow	10250T120	
	White	10250T116	
	Blue	10250T118	
	Orange	10250T119	
	Half Shrouded Button		
		Vertical	Horizontal
	Black	10250T501	10250T511
	Red	10250T502	10250T512
	Green	10250T503	10250T513
	Yellow	10250T504	10250T514
	Gray	10250T505	10250T515
	White	10250T506	10250T516
	Blue	10250T508	10250T518
	Orange	10250T509	10250T519
	Mushroom Button		
	Black	10250T121	
	Red	10250T122	
	Green	10250T123	
	Yellow	10250T124	
	Blue	10250T129	
	Jumbo Mushroom Button ②		
	Black	10250T171	
	Red	10250T172	
	Red (EMERG. STOP)	10250T17213	
	Green	10250T173	
	Yellow	10250T174	
Low Operating Force — Jumbo Mushroom ②③			
	Black	10250ED1164-2	
	Red	10250ED1164-3	
	Green	10250ED1164-4	
	Yellow	10250ED1164-5	
	Clear	10250ED1164	

Note: To order complete assembled unit using one composite Catalog Number, add Contact Block and Legend Plate Suffix to the end of Operator Catalog Number.
Example: 10250T101-1TS33



Operator
10250T101

+



Contact Block
10250T1

+



Legend Plate
10250TS33

① To order operator with factory assembled Extended Retaining Nut, 10250TA12, for thick panel applications, add Suffix Letter **E** to listed Catalog Number. Example: 10250T101E

② Anodized aluminum head is not suitable for use in ultraviolet light applications.

③ Operating Force — Standard = 2.4 lb; Low Force = 1.6 lb.