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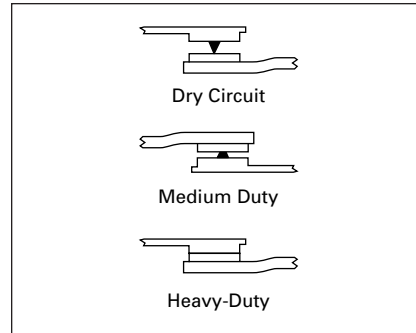
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**Product Description**

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 47-166 – 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.

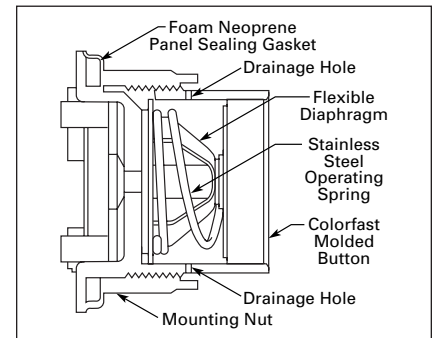


**Grounding Nibs**

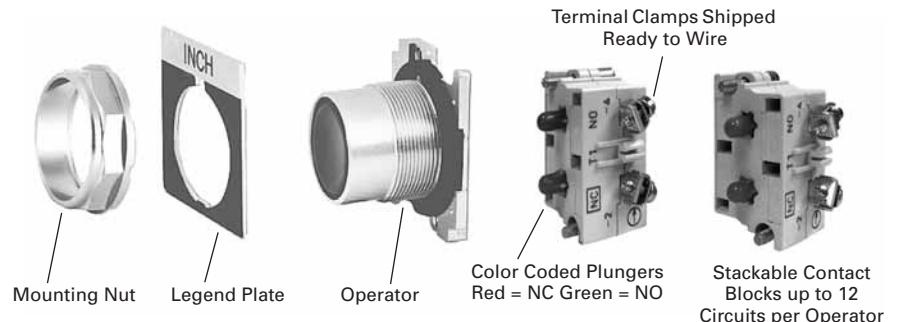
**Diaphragm Seal with Drainage Holes**

**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 10<sup>6</sup> operations
  - Contact blocks: 10 x 10<sup>6</sup> operations
  - PresTest units: 10 x 10<sup>6</sup> operations
  - Lever and key selector switches: 0.25 x 10<sup>6</sup> operations
  - Twist to release pushbuttons: 0.3 x 10<sup>6</sup> 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 mm<sup>2</sup>) to 2 x 14 AWG (2.5 mm<sup>2</sup>) conductors
- Torque = 7 lb-in (0.8 Nm)
- Degree of protection against direct electrical contact: IP2X with fingerproof shroud

### Light Units

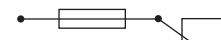
- Transformers: will withstand short circuit for 1 hour per IEC 60997-5-1
- Bulbs — average life
  - Transformer type: 20,000 hrs.
  - Resistor/direct voltage type: 2500 hrs. minimum @ rated V
  - LED: 60,000 to 100,000 hrs.

## Electrical Ratings

- Insulation: U<sub>i</sub> = 660V AC or DC
- Thermal: I<sub>th</sub> = 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 10<sup>6</sup> operations
    - 5A: 250V pf 0.4 – 1 x 10<sup>6</sup> operations
    - 2A: 660V pf 0.4 – 1 x 10<sup>6</sup> operations
- Switching capacity
  - AC15 rated make/break (11 x I<sub>e</sub> at 1.1 x U<sub>e</sub>)
    - 6A: 120V pf 0.3
    - 4A: 240V pf 0.3
    - 2A: 660V pf 0.3
  - DC13 rated make/break (1.1 x I<sub>e</sub> at 1.1 x U<sub>e</sub>)
    - 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

### 10250T Series, Illuminated Components

## Illuminated Pushbuttons and Indicating Lights

- LED or Incandescent
- Full Voltage, Resistor or Transformer Type

**Table 47-183. Operators without Lens**

Light Unit Type	Type	Voltage	Illuminated Pushbutton		Indicating Light		PresTest		Master Test		LED/Lamp Number	
												
			Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$		
Incandescent	Full Voltage AC/DC	6	10250T473		10250T203N		10250T232N		—		#755	
		12	10250T474		10250T204N		10250T233N		—		#756	
		24	10250T476		10250T206N		10250T235N		—		#757	
		32	10250T477		10250T207N		10250T238N		—		#1828	
		48	10250T478		10250T208N		10250T239N		—		#1835	
	Resistor <sup>②</sup> AC/DC	120	10250T471		10250T201N		10250T231N		—		120MB	
		240	10250T472		10250T202N		10250T240N		—		120MB	
	Transformer AC Only <sup>③</sup>	24	10250T416		—		—		—		#755	
		120	10250T411		10250T181N		10250T221N		—			
		240	10250T422		10250T182N		10250T222N		—			
		277	10250T419		10250T198N		—		—			
		380	10250T413		10250T183N		10250T223N		—			
		480	10250T414		10250T184N		10250T224N		—			
		600	10250T415		10250T185N		10250T225N		—			
	Neon <sup>④</sup> AC/DC	120	—		10250T226N		—		—		NE51H-R22	
		240	—		10250T227N		—		—		NE51H-R68	
	Solid-State 50/60 Hz Only	120	—		—		—		10250T189N		120MB	
	LED (LEDs not included) <sup>①</sup>	Full Voltage	—	10250T397L		10250T197L		10250T297L		—		Bayonet Base
			Transformer AC Only	24	10250T416L		—		—		—	
		120	10250T411L		10250T181L		10250T221L		—			
240		10250T412L		10250T182L		10250T222L		—				
277		10250T419L		10250T198L		—		—				
380		10250T413L		10250T183L		10250T223L		—				
480		10250T414L		10250T184L		10250T224L		—				
600		10250T415L		10250T185L		10250T225L		—				

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① These units do not include lamps. Order LED separately to match lens color. See Page 47-157 for LED Selection and Page 47-165 for Catalog Numbering System.

② Resistor units are not available for use with LEDs, choose either transformer or full voltage LED style.



③ For flashing lamp, add letter F to listed Catalog Number. Example: 10250T181FN.

④ Resistant to shock and vibration. For best illumination use amber, yellow or clear lens.


**Table 47-184. Indicating and Master Test Lenses**

	Color	Plastic		Glass	
		Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
 Plastic  Glass	Red	10250TC1N		10250TC7N	
	Green	10250TC2N		10250TC8N	
	Amber	10250TC19N		10250TC9N	
	Yellow	10250TC3N		—	
	Blue	10250TC4N		10250TC10N	
	Clear	10250TC5N		10250TC11N	
	White	10250TC6N		10250TC12N	

**Table 47-186. PresTest Lenses**

	Color	Plastic		Glass	
		Catalog Number	Price U.S. \$	Catalog Number	Price U.S. \$
 Plastic  Glass	Red	10250TC21		10250TC13N	
	Green	10250TC22		10250TC14N	
	Amber	10250TC43		10250TC15N	
	Yellow	10250TC23		—	
	Blue	10250TC24		10250TC16N	
	Clear	10250TC25		10250TC17N	
	White	10250TC26		10250TC18N	

**Table 47-185. Illuminated Pushbutton Lenses**

	Color	Catalog Number	Price U.S. \$
	Red	10250TC21	
	Green	10250TC22	
	Yellow	10250TC23	
	Amber	10250TC43	
	Blue	10250TC24	
	Clear	10250TC25	
	White	10250TC26	