

**Point-of-Purchase Packaged
Pilot Devices**



Table 47-172. 10250T Point-of-Purchase Packaged Pilot Devices

Product	Description	Catalog Number	Price U.S. \$
Emergency Stop Operators			
Red Non-illuminated Push-Pull	1NO-1NC contact block. Also includes two square engraved legend plates: EMERG. STOP and STOP.	10250T5B62-1-POP	
Red Mushroom Pushbutton	1NO-1NC contact block. Also includes two square engraved legend plates: EMERG. STOP and STOP.	10250T32R-POP	
Red Jumbo Mushroom Pushbutton	Engraved EMERG. STOP with 1NO-1NC contact block.	10250T33-POP	
Momentary Pushbuttons			
Black Flush Pushbutton	1NO-1NC contact block. Also includes two square engraved legend plates: START and JOG.	10250T30B-POP	
Red Extended Pushbutton	1NO-1NC contact block. Also includes one square engraved legend plate: STOP.	10250T31R-POP	
Indicating Lights			
Red Indicating Light	Full voltage 24V AC/DC with two extra lenses: Green and Amber. Also includes two square engraved legend plates: RUN and JOG.	10250T206NC1N-POP	
Red Indicating Light	Resistor 120V AC/DC with two extra lenses: Green and Amber. Also includes one square engraved legend plate: RUN and JOG.	10250T34R-POP	
Illuminated Pushbuttons			
Red Illuminating Pushbutton	Full voltage 24V AC/DC with 1NO-1NC contact block and two extra lenses: Green and Amber. Also includes one square engraved legend plate: POWER ON.	10250T476C21-1-POP	
Red Illuminating Pushbutton	Resistor 120V AC/DC with 1NO-1NC contact block and two extra lenses: Green and Amber. Also includes one square engraved legend plate: POWER ON.	10250T411C21-1-POP	
Selector Switches			
Black Knob Two-Position Selector Switch	1NO-1NC contact block. Also includes three square engraved legend plates: OFF/ON, HAND/AUTO and RUN/JOG.	10250T20KB-POP	
Black Knob Three-Position Selector Switch	1NO-1NC contact block. Also includes 1 square engraved legend plate: HAND/OFF/AUTO.	10250T22KB-POP	

Contents

<i>Description</i>	<i>Page</i>
Product Description	47-115
Features	47-116
Benefits	47-116
Contact Operation	47-116
Standards and Certifications	47-116
Technical Data and Specifications	47-116
Point-of-Purchase Packaging	47-117
Product Selection	
Non-illuminated Momentary Pushbutton Units	47-118
Pushbuttons	47-119
Illuminated Momentary Pushbutton Units	47-122
Indicating Light Units	47-123
Illuminated Pushbuttons and Indicating Lights	47-124
Push-Pull Units	47-125
Illuminated Push-Pull Units	47-126
Potentiometers	47-128
Push-Pulls	47-129
Selector Switch Units	47-132
Selector Switch Selection	47-133
Selector Switch Operators	47-135
Illuminated Selector Switch Operators	47-138
Joysticks Units	47-139
Joystick	47-139
Roto-Push® Units	47-142
Roto-Push Operators	47-143
Contact Blocks	47-148
Options	
Legend Plates	47-151
Enclosures	47-153
Accessories	47-155
Renewal Parts	47-157
Mounting	47-159
Dimensions	47-160
Ordering Complete Devices	47-163
Catalog Number Structure	47-164

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.

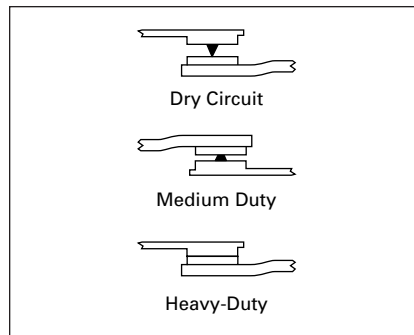
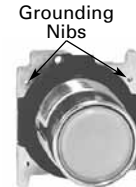


Figure 47-90. Reliability Nibs

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.

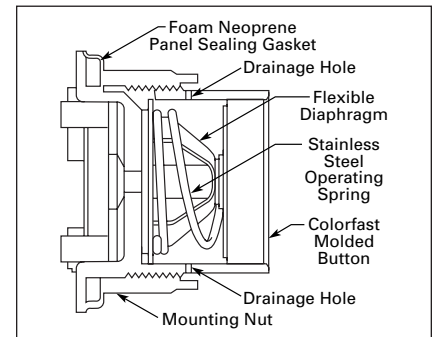
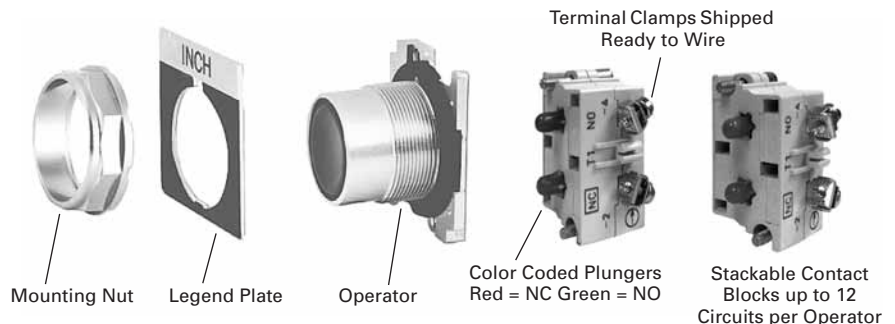


Figure 47-91. Diaphragm Seal



10250T Series

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

Description	Meet or Exceed NEMA Rating Designations A600, A300 and B300 for AC and P600 for DC						
	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