

30.5 mm Heavy-Duty Watertight/Oiltight—10250T



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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 V7-T1-240 to V7-T1-274.**

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

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Application Description

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 EN 60947-5-1 and 60947-5-5
- 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
- Most other operators
 - UL (NEMA) Type 1, 2, 3, 3R, 4, 4X, 12, 13
 - IEC IP65

Product Overview

Reliability Nibs

Eaton's 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.

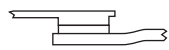
Reliability Nibs



Dry Circuit



Medium Duty



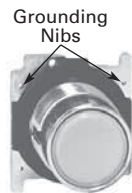
Heavy-Duty

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

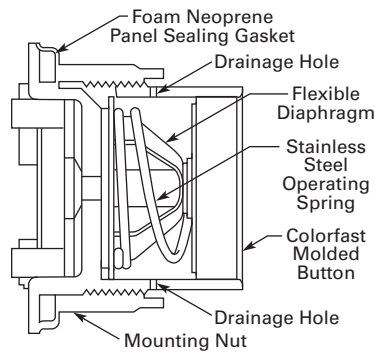


Diaphragm Seal with Drainage Holes

Liquid Drainage

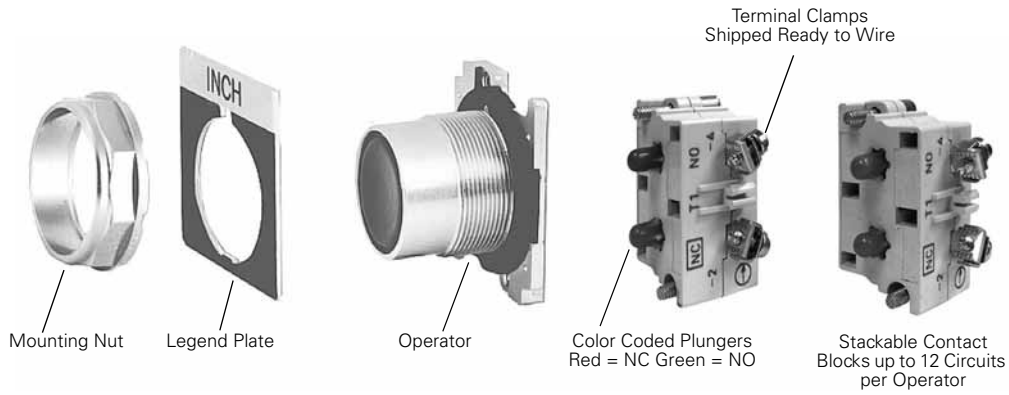
Eaton's pushbutton operators offer front of panel drainage via holes in the operator bushing. Hidden from view by the mounting nut, these holes prevent buildup of liquid inside the operator, which can prevent operation in freezing environments. The holes also provide a route for escaping liquid in high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

Diaphragm Seal



Product Identification

30.5 mm Heavy-Duty Watertight/Oiltight—10250T Series

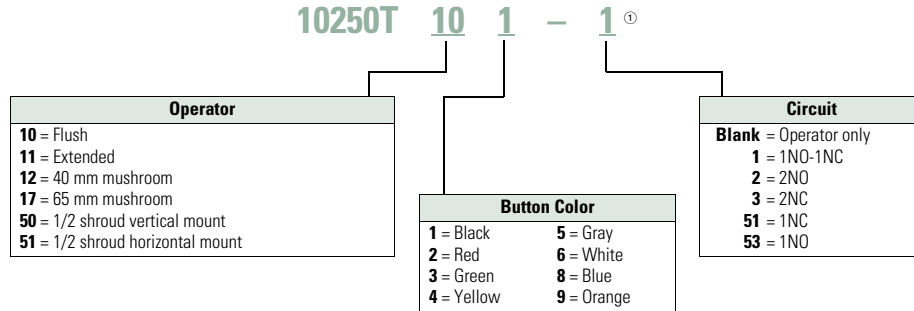


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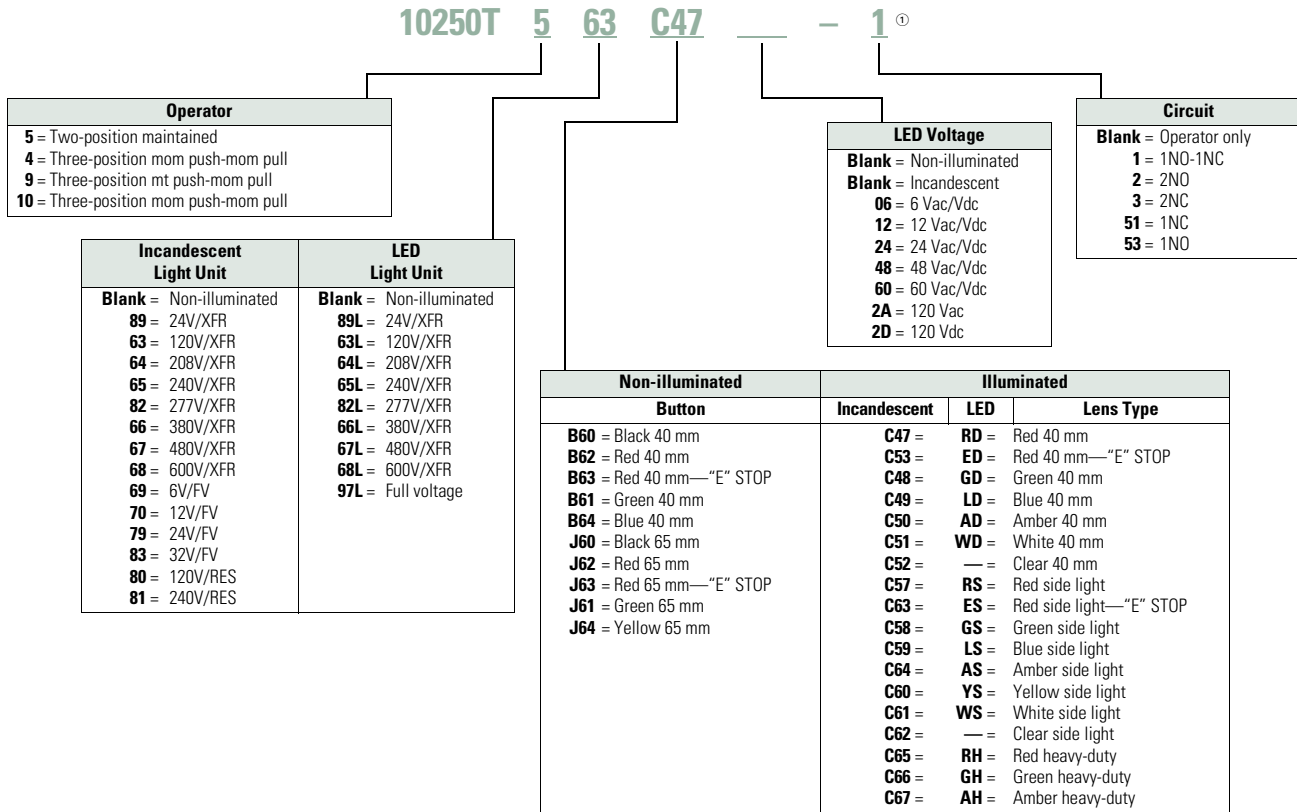
Catalog Number Selection

Catalog Number Selection is for illustrative purposes only and not to be used to create new catalog numbers.

Non-Illuminated Pushbuttons



Illuminated and Non-Illuminated Push-Pulls

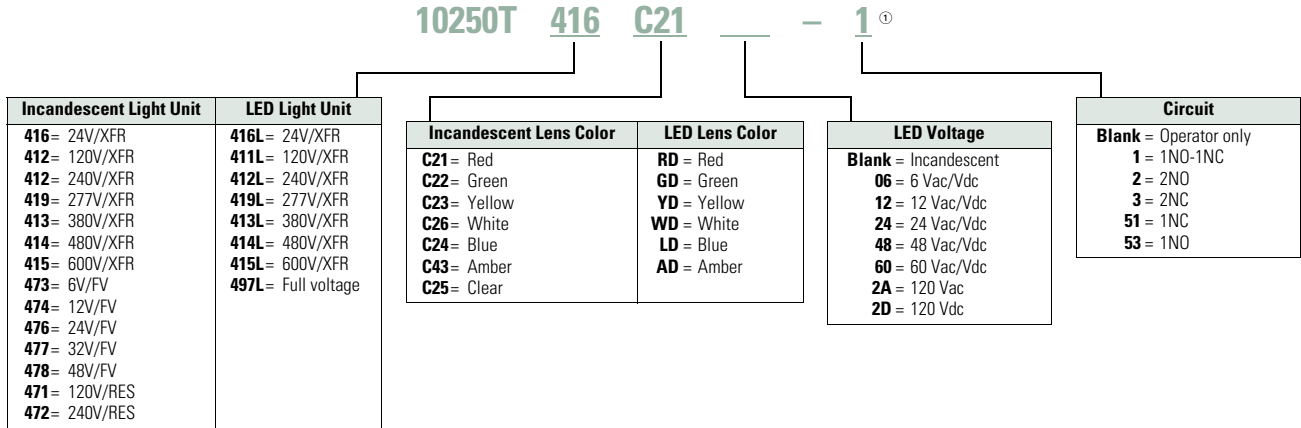


Note

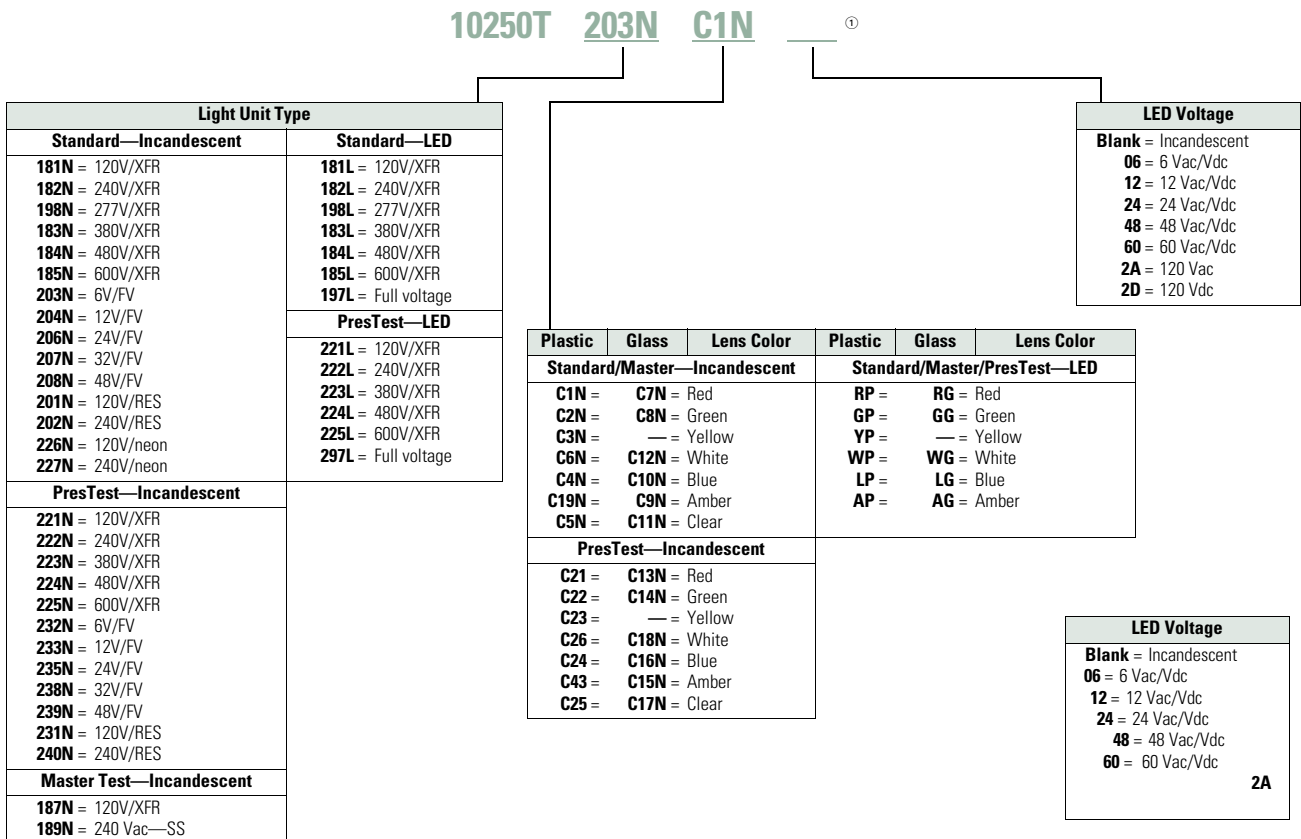
① Add **X** at end of catalog number to receive parts assembled from factory.

Catalog Number Selection is for illustrative purposes only and not to be used to create new catalog numbers.

Illuminated Pushbuttons



Standard Indicating Lights, PresTest and Master Test



Note

① Add **X** at end of catalog number to receive parts assembled from factory.

Product Selection

Point-of-Purchase Packaging

Point-of-Purchase Packaged Pilot Device



10250T Point-of-Purchase Packaged Pilot Devices

Product	Description	Catalog Number
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 24 Vac/Vdc with two extra lenses: Green and amber. Also includes two square engraved legend plates: RUN and JOG.	10250T206NC1N-POP
Red indicating light	Resistor 120 Vac/Vdc 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 24 Vac/Vdc 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 120 Vac/Vdc 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	2NO-2NC contact blocks. Also includes 1 square engraved legend plate: HAND/OFF/AUTO.	10250T22KB-POP
Black knob three-position selector switch	1NO-1NC contact block. Also includes legend plate: HAND/OFF/AUTO	10250T21KB-POP

Non-Illuminated Momentary Pushbutton Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Flush Button



Extended Button



Mushroom Button



Jumbo Mushroom



Pushbutton Units—Flush, Extended, Mushroom Head or Jumbo Mushroom Head Operators

Contact Type	Button Color	Flush Button Catalog Number	Extended Button Catalog Number	Mushroom Button Catalog Number	Jumbo Mushroom ^① Catalog Number
1NO	Black	10250T23B	10250T25B	10250T26B	10250T27B
	Red	10250T23R	10250T112-53	10250T122-53	10250T172-53
	Green	10250T23G	10250T25G	10250T26G	10250T27G
	Yellow	10250T23Y	10250T25Y	10250T26Y	10250T27Y
	Red—Engraved EMERG. STOP	—	—	—	10250T17213-53
1NC	Black	10250T101-51	10250T111-51	10250T121-51	10250T171-51
	Red	10250T102-51	10250T25R	10250T26R	10250T27R
	Green	10250T103-51	10250T113-51	10250T123-51	10250T173-51
	Yellow	10250T104-51	10250T120-51	10250T124-51	10250T174-51
	Red—Engraved EMERG. STOP	—	—	—	10250T29
1NO-1NC	Black	10250T30B	10250T31B	10250T32B	10250T33B
	Red	10250T30R	10250T31R	10250T32R	10250T33R
	Green	10250T30G	10250T31G	10250T32G	10250T33G
	Yellow	10250T30Y	10250T31Y	10250T32Y	10250T33Y
	Red—Engraved EMERG. STOP	—	—	—	10250T33
2NO	Black	10250T101-2	10250T111-2	10250T121-2	10250T171-2
	Red	10250T102-2	10250T112-2	10250T122-2	10250T172-2
	Green	10250T103-2	10250T113-2	10250T123-2	10250T173-2
	Yellow	10250T104-2	10250T120-2	10250T124-2	10250T174-2
	Red—Engraved EMERG. STOP	—	—	—	10250T17213-2
2NC	Black	10250T101-3	10250T111-3	10250T121-3	10250T171-3
	Red	10250T102-3	10250T112-3	10250T122-3	10250T172-3
	Green	10250T103-3	10250T113-3	10250T123-3	10250T173-3
	Yellow	10250T104-3	10250T120-3	10250T124-3	10250T174-3
	Red—Engraved EMERG. STOP	—	—	—	10250T17213-3

Note







① Anodized aluminum head is not suitable for use in ultraviolet light applications.

1

Pushbuttons

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Momentary Pushbutton Operators, Non-illuminated

Button	Color	Catalog Number	
		Vertical	Horizontal
10250T10_ 	Flush button ^①	Black	10250T101
	Red	10250T102	
	Green	10250T103	
	Yellow	10250T104	
	Gray	10250T105	
	White	10250T106	
	Blue	10250T108	
	Orange	10250T109	
10250T11_ 	Extended button	Black	10250T111
	Red	10250T112	
	Green	10250T113	
	Yellow	10250T120	
	White	10250T116	
	Blue	10250T118	
	Orange	10250T119	
	10250T5_ 	Half shrouded button	Black
Red		10250T502	10250T511
Green		10250T503	10250T512
Yellow		10250T504	10250T513
Gray		10250T505	10250T514
White		10250T506	10250T515
Blue		10250T508	10250T516
Orange		10250T509	10250T518
Black		10250T519	10250T519
10250T12_ 		Mushroom button	Black
	Red	10250T122	
	Green	10250T123	
	Yellow	10250T124	
	Blue	10250T129	
10250T17_ 	Jumbo mushroom button ^②	Black	10250T171
	Red	10250T172	
	Red (EMERG. STOP)	10250T17213	
	Green	10250T173	
	Yellow	10250T174	
10250ED1164_ 	Low operating force—jumbo mushroom ^{②③}	Black	10250ED1164-2
	Red	10250ED1164-3	
	Green	10250ED1164-4	
	Yellow	10250ED1164-5	
	Clear	10250ED1164	

Notes

- ① To order operator with factory assembled extended retaining nut, **10250TA12**, for thick panel applications, add suffix letter **E** to listed catalog number. Example: 10250T101**E**.
- 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.

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

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

10250TA_



Mechanically Interlocked Pushbutton Operators

Description	Catalog Number
Black flush and green flush	10250TA66
Black flush and long red	10250TA67
Black flush and red mushroom head	10250TA68
Black flush and lock-down red mushroom head	10250TA69 ^①
Black flush and red jumbo mushroom head	10250TA76
Green flush and long red	10250TA72
Black long and long red	10250TA73
Green flush and red mushroom head	10250TA77
Green flush and black flush	10250TA75

Note

^① NC contacts must be mounted behind lock-down mushroom head operator to ensure lockout.

1

Lockout Pushbutton Operators with Padlock Attachments

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

The following pushbutton and mushroom operators include an integral padlock attachment for applications requiring lockout/tagout of specific machine functions. They are available in styles which allow locking of a button in the down position

(stopped position) or locking a button in the up position (to prevent starting). Select the **“Hand”** latch type which functions as a momentary pushbutton until the operator presses the button and moves the padlock attachment into position for

locking, or choose the **“Spring Loaded”** latch type where the padlock attachment springs into place when the button is pressed. Units accept a customer supplied 1/4 in padlock.

10250TA16



Padlockable in the Down Position ①

Operator Type	Color	Latch Type	Catalog Number
Flush head	Red	Hand	10250TA16
Mushroom head	Red	Hand	10250TA42
	Red	Spring loaded	10250TA45
Jumbo head ②	Red	Hand	10250TA52
	Red	Spring loaded	10250TA55
	Red (EMERG. STOP)	Spring loaded	10250ED952

Padlockable in the Up Position ①

10250TA4_



Operator Type	Color	Latch Type	Catalog Number
Mushroom head	Black	Hand	10250TA41
	Green	Hand	10250TA43

10250TA5_



Jumbo mushroom head ②	Black	Hand	10250TA51
	Green	Hand	10250TA53
	Yellow	Hand	10250TA54

Notes

Hand attachment must be manually moved into place for locking. Spring loaded: when operator is pressed—attachment springs into place. Must be moved manually to release button.

① Operators can be latched down without a padlock. Padlock not included.

② Jumbo mushroom heads are not recommended for use in applications where exposure to ultraviolet light exists.

Key Pushbutton Operator

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

These devices incorporate an integral locking mechanism which enables locking units in various positions (**Locked Down**), locking units to

prevent operation (**Locked Up**) or setting unit to lock when the button is pressed (**Push to Lock**), requiring the key to be inserted to return to

normal operation. With the key in the center position, these operators function as a normal momentary pushbutton (**Free**).

Replacement Keys or Dissimilar Locks for Key Operators Below

Listed operators have identical locks and keys (Key Code H661) Catalog Number 10250ED824. For dissimilar lock and key combinations, see listing on **Page V7-T1-198**.

Replacement Keys

Description	Catalog Number
Replacement keys (code H661)	10250ED824

10250T43



Key Pushbutton Operator

Key Position and Pushbutton Operations



Key Removal Positions

Vertical Mounting^① Catalog Number

Three-Position

Lock up	Free	Lock down	All	10250T430
Lock up	Free	Lock down	L and R	10250T431
Lock up	Free	Lock down	C and R	10250T432

Two-Position

Lock up	Free	—	L and C	10250T433
Lock up	Free	—	L	10250T434
—	Free	Lock down	C and R	10250T435
—	Free	Lock down	R	10250T436
—	Free	Push to lock	C and R	10250T437
—	Free	Push to lock	R	10250T438

Latch-In, Twist-to-Release Operator

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

10250ED1043-4



Operator Only with Button

Description	Catalog Number
Latch-in, twist-to-release operator with red mushroom head button	10250ED1043-4

Note

① Horizontal mounting available on request.

1

Illuminated Momentary Pushbutton Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

- LED or incandescent
- Full voltage, resistor or transformer type
- Plastic lenses

24V Full Voltage Illuminated Pushbutton



Illuminated Pushbutton Units

Type	Voltage	Color	LED/Lamp Number	Illuminated Pushbutton				
				1NO Catalog Number	1NO-1NC Catalog Number	1NC Catalog Number		
LED Lamp								
Full voltage	24 Vac/Vdc	Red	Bayonet base	10250T397LRD24-53	10250T397LRD24-1	10250T397LRD24-51		
		Green		10250T397LGD24-53	10250T397LGD24-1	10250T397LGD24-51		
		Amber		10250T397LAD24-53	10250T397LAD24-1	10250T397LAD24-51		
		Yellow		10250T397LYD24-53	10250T397LYD24-1	10250T397LYD24-51		
		Blue		10250T397LLD24-53	10250T397LLD24-1	10250T397LLD24-51		
		White		10250T397LWD24-53	10250T397LWD24-1	10250T397LWD24-51		
		120 Vac		Red	10250T397LRD2A-53	10250T397LRD2A-1	10250T397LRD2A-51	
				Green	10250T397LGD2A-53	10250T397LGD2A-1	10250T397LGD2A-51	
				Amber	10250T397LAD2A-53	10250T397LAD2A-1	10250T397LAD2A-51	
	Yellow		10250T397LYD2A-53	10250T397LYD2A-2	10250T397LYD2A-51			
	Blue		10250T397LLD2A-53	10250T397LLD2A-1	10250T397LLD2A-51			
	White		10250T397LWD2A-53	10250T397LWD2A-1	10250T397LWD2A-51			
	Transformer		120 Vac	Red	10250T411LRD06-53	10250T411LRD06-1	10250T411LRD06-51	
				Green	10250T411LGD06-53	10250T411LGD06-1	10250T411LGD06-51	
				Amber	10250T411LAD06-53	10250T411LAD06-1	10250T411LAD06-51	
		Yellow		10250T411LYD06-53	10250T411LYD06-1	10250T411LYD06-51		
		Blue		10250T411LLD06-53	10250T411LLD06-1	10250T411LLD06-51		
		White		10250T411LWD06-53	10250T411LWD06-1	10250T411LWD06-51		
Incandescent Lamp								
Full voltage		24 Vac/Vdc		Red	#757	10250T476C21-53	10250T476C21-1	10250T476C21-51
				Green		10250T476C22-53	10250T476C22-1	10250T476C22-51
	Amber		10250T476C43-53	10250T476C43-1		10250T476C43-51		
	Yellow		10250T476C23-53	10250T476C23-1		10250T476C23-51		
	Blue		10250T476C24-53	10250T476C24-1		10250T476C24-51		
	Clear		10250T476C25-53	10250T476C25-1		10250T476C25-51		
	White		10250T476C26-53	10250T476C26-1		10250T476C26-51		
	Resistor	120 Vac/Vdc	Red	120MB	10250T471C21-53	10250T471C21-1	10250T471C21-51	
			Green		10250T471C22-53	10250T471C22-1	10250T471C22-51	
			Amber		10250T471C43-53	10250T471C43-1	10250T471C43-51	
			Yellow		10250T471C23-53	10250T471C23-1	10250T471C23-51	
			Blue		10250T471C24-53	10250T471C24-1	10250T471C24-51	
			Clear		10250T471C25-53	10250T471C25-1	10250T471C25-51	
			White		10250T471C26-53	10250T471C26-1	10250T471C26-51	
			Transformer		120 Vac	Red	#755	10250T75R ①
Green	10250T75G ①	10250T76G ①		10250T77G ①				
Amber	10250T75A ①	10250T76A ①		10250T77A ①				
Yellow	10250T75Y ①	10250T76Y ①		10250T77Y ①				
Blue	10250T75B ①	10250T76B ①		10250T77B ①				
Clear	10250T75C ①	10250T76C ①		10250T77C ①				
White	10250T75W ①	10250T76W ①		10250T77W ①				

Note

① For flashing module catalog number 10250TFL1, add suffix code **FM** to listed catalog number. Example: 10250T75R**FM**.

Indicating Light Units ①

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

- LED or incandescent
- Full voltage, resistor or transformer type
- Standard and PresTest types
- Plastic lenses

PresTest—This device incorporates a press-to-test feature whereby depressing the lens disconnects the light from the source being

monitored and connects the lamp to a continuously energized circuit for immediate detection of faulty lamps.

24V Full Voltage Illuminated Light



120 Vac Transformer PresTest



Indicating Light Units

Type	Voltage	Color	LED/Lamp Number	Indicating Light Catalog Number	PresTest Catalog Number	
LED Lamp						
Full voltage	24 Vac/Vdc	Red	Bayonet base	10250T197LRP24	10250T297LRP24	
		Green		10250T197LGP24	10250T297LGP24	
		Amber		10250T197LAP24	10250T297LAP24	
		Yellow		10250T197LYP24	10250T297LYP24	
		Blue		10250T197LLP24	10250T297LLP24	
		White		10250T197LWP24	10250T297LWP24	
		120 Vac		Red	10250T197LRP2A	10250T297LRP2A
	Green		10250T197LGP2A	10250T297LGP2A		
	Amber		10250T197LAP2A	10250T297LAP2A		
	Yellow		10250T197LYP2A	10250T297LYP2A		
	Blue		10250T197LLP2A	10250T297LLP2A		
	White		10250T197LWP2A	10250T297LWP2A		
	Transformer		120 Vac	Red	10250T181LRP06	10250T221LRP06
				Green	10250T181LGP06	10250T221LGP06
				Amber	10250T181LAP06	10250T221LAP06
				Yellow	10250T181LYP06	10250T221LYP06
		Blue		10250T181LLP06	10250T221LLP06	
White		10250T181LWP06		10250T221LWP06		
Incandescent Lamp						
Full voltage	24 Vac/Vdc	Red	#757	10250T206NC1N	10250T235NC21	
		Green		10250T206NC2N	10250T235NC22	
		Amber		10250T206NC19N	10250T235NC43	
		Yellow		10250T206NC3N	10250T235NC23	
		Blue		10250T206NC4N	10250T235NC24	
		Clear		10250T206NC5N	10250T235NC25	
		White		10250T206NC6N	10250T235NC26	
Resistor	120 Vac/Vdc	Red	120MB	10250T201NC1N	10250T231NC21	
		Green		10250T201NC2N	10250T231NC22	
		Amber		10250T201NC19N	10250T231NC43	
		Yellow		10250T201NC3N	10250T231NC23	
		Blue		10250T201NC4N	10250T231NC24	
		Clear		10250T201NC5N	10250T231NC25	
		White		10250T201NC6N	10250T231NC26	
Transformer ②	120 Vac	Red	#755	10250T34R	10250T74NR	
		Green		10250T34G	10250T74NG	
		Amber		10250T34A	10250T74NA	
		Yellow		10250T34Y	10250T74NY	
		Blue		10250T34B	10250T74NB	
		Clear		10250T34C	10250T74NC	
		White		10250T34W	10250T74NW	

Notes

- ① Standard indicating lights are rated UL (NEMA) 3S as well.
- ② For flashing lamp add letter **F** to listed catalog number. Example: 10250T34RF.

1

Illuminated Pushbuttons and Indicating Lights

- LED or incandescent
- Full voltage, resistor or transformer type

Illuminated Pushbutton



Operators without Lens

Indicating Light



PresTest



Master Test



Type	Voltage	LED/Lamp Number	Illuminated Pushbutton Catalog Number	Indicating Light Catalog Number	PresTest Catalog Number	Master Test Catalog Number
Incandescent Unit						
Full voltage AC/DC	6	#755	10250T473	10250T203N	10250T232N	—
	12	#756	10250T474	10250T204N	10250T233N	—
	24	#757	10250T476	10250T206N	10250T235N	—
	32	#1828	10250T477	10250T207N	10250T238N	—
	48	#1835	10250T478	10250T208N	10250T239N	—
Resistor AC/DC ^②	120	120MB	10250T471	10250T201N	10250T231N	—
	240	120MB	10250T472	10250T202N	10250T240N	—
Transformer AC only ^③	24	#755	10250T416	—	—	—
	120		10250T411	10250T181N	10250T221N	—
	240		10250T422	10250T182N	10250T222N	—
	277		10250T419	10250T198N	—	—
	380		10250T413	10250T183N	10250T223N	—
	480		10250T414	10250T184N	10250T224N	—
Neon AC/DC ^④	120	NE51H-R22	—	10250T226N	—	—
	240	NE51H-R68	—	10250T227N	—	—
Solid-state 50/60 Hz only	120	120MB	—	—	—	10250T189N
LED (LEDs not included) ^①						
Full voltage	—	Bayonet base	10250T397L	10250T197L	10250T297L	—
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	—

Notes

- ① These units do not include lamps. Order LED separately to match lens color. See **Page V7-T1-225** for LED Selection and **Page V7-T1-171** 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: 10250T181NF.
- ④ Resistant to shock and vibration. For best illumination use amber, yellow or clear lens.

Plastic



Indicating and Master Test Lenses

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

Glass



10250TC2



Illuminated Pushbutton Lenses

Color	Catalog Number
Red	10250TC21
Green	10250TC22
Yellow	10250TC23
Amber	10250TC43
Blue	10250TC24
Clear	10250TC25
White	10250TC26

Plastic



PresTest Lenses

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

Glass



1 Push-Pull Emergency Stops (Compliant with IEC 60947-5-5)

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

- Two- and three-position
- Non-illuminated
- LONC contact block

10250T579C47-71X



Two-Position Push-Pull Units

Operator Position ^①

Pull	Push	Button Type/Color	Lamp	Type	Voltage	Catalog Number
X	0	40 mm red—illuminated	Incandescent	Transformer	120 Vac/Vdc	10250T563C47-71X
X	0	40 mm red—illuminated EMERG. STOP	Incandescent	Transformer	120 Vac/Vdc	10250T563C53-71X
X	0	40 mm red—illuminated EMERG. STOP	LED	Transformer	120 Vac/Vdc	10250T563LED06-71X
X	0	40 mm red—illuminated	Incandescent	Full voltage	24 Vdc	10250T579C47-71X
X	0	40 mm red—illuminated EMERG. STOP	Incandescent	Full voltage	24 Vdc	10250T579C53-71X
X	0	40 mm red—illuminated	Incandescent	Resistor	120 Vac/Vdc	10250T580C47-71X
X	0	40 mm red—illuminated EMERG. STOP	Incandescent	Resistor	120 Vac/Vdc	10250T580C53-71X
X	0	40 mm red—illuminated	Incandescent	Transformer	24 Vac	10250T589C47-71X
X	0	40 mm red—illuminated EMERG. STOP	Incandescent	Transformer	24 Vac	10250T589C53-71X
X	0	40 mm red—illuminated EMERG. STOP	LED	Transformer	24 Vac	10250T589LED06-71X
X	0	40 mm red—illuminated	LED	Transformer	24 Vac	10250T589LRD06-71X
X	0	40 mm red—illuminated EMERG. STOP	LED	Full voltage	24 Vdc	10250T597LED24-71X
X	0	40 mm red—illuminated EMERG. STOP	LED	Full voltage	120 Vac/Vdc	10250T597LED2A-71X
X	0	40 mm red—illuminated	LED	Full voltage	24 Vdc	10250T597LRD24-71X
X	0	40 mm red—illuminated	LED	Full voltage	120 Vac/Vdc	10250T597LRD2A-71X
X	0	40 mm red	—	—	—	10250T5B62-71X
X	0	40 mm red	—	—	—	10250T5B63-71X
X	0	65 mm red	—	—	—	10250T5J62-71X
X	0	65 mm red	—	—	—	10250T5J63-71X

Note

^① X = closed circuit, 0 = open circuit.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Two-Position Push-Pull Units

Operator Position ^①

Pull



Push



Button Type/Color ^②

Contact Type













Mounting Location

A



B

Catalog Number ^②

Two-Position Maintained Push, Maintained Pull

	0	X	40 mm/red	1NO			10250T5B62-1X
	X	0		1NC			
	0	X	40 mm engraved EMERG. STOP/red	1NO			10250T5B63-1X
	X	0		1NC			
	0	X	65 mm aluminum engraved EMERG. STOP/red	1NO			10250T5J63-1X
	X	0		1NC			
	0	X	65 mm aluminum engraved EMERG. STOP/red Special security jumbo mushroom head	1NO			10250ED1080-2
	X	0		1NC			

Button and Color Selection

	Color	Suffix Code	Catalog Number
Standard 	Standard—40 mm		
	Red	B62	10250TB62
	Red (EMERG. STOP)	B63	10250TB63
	Green	B61	10250TB61
	Black	B60	10250TB60
	Blue	B64	10250TB64
Jumbo Mushroom Head 	Jumbo Mushroom Head ^③ (Anodized) Aluminum—65 mm		
	Red	J62	10250TJ62
	Red (EMERG. STOP)	J63	10250TJ63
	Green	J61	10250TJ61
	Black	J60	10250TJ60
	Yellow	J64	10250TJ64

Notes

- ① X = closed circuit, 0 = open circuit.
- ② To order different type or color buttons, substitute the underlined characters with appropriate suffix code from the table.
Example: 10250T5B64-1X.
- ③ Anodized aluminum head is not suitable for use in ultraviolet light applications.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

10250T_

Three-Position Push-Pull Units

Operator Position ^①



Pull	Intermediate	Push	Button Type/Color ^②	Contact Type	Mounting Location		Catalog Number ^②
					A	B	
Maintained Push, Momentary Pull							
X	0	0	40 mm/black	1NC			10250T9B60-3X
X	X	0	40 mm/red	1NC			10250T9B62-3X
			40 mm engraved EMERG. STOP/red				10250T9B63-3X
Momentary Push, Momentary Pull							
X	0	0	40 mm/black	1NC			10250T4B60-3X
X	X	0	40 mm/red	1NC			10250T4B62-3X
0	0	X	40 mm/black	1NO			10250T10B60-1X
X	0	0	40 mm/red	1NC			10250T10B62-1X

Button and Color Selection

Color	Suffix Code	Catalog Number
Standard—40 mm		
Red	B62	10250TB62
Red (EMERG. STOP)	B63	10250TB63
Green	B61	10250TB61
Black	B60	10250TB60
Blue	B64	10250TB64
Jumbo Mushroom Head ^③ (Anodized) Aluminum—65 mm		
Red	J62	10250TJ62
Red (EMERG. STOP)	J63	10250TJ63
Green	J61	10250TJ61
Black	J60	10250TJ60
Yellow	J64	10250TJ64

Notes

- ① X = closed circuit, 0 = open circuit.
- ② To order different type or color buttons, substitute the underlined characters with appropriate suffix code from the table.
Example: 10250T5B64-1X.
- ③ Anodized aluminum head is not suitable for use in ultraviolet light applications.

Illuminated Push-Pull Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

- LED or incandescent
- Full voltage, resistor or transformer type
- Two-position maintained

Two-Position Push-Pull Operator



Two-Position Illuminated Maintained Push, Maintained Pull

Operator Position ①

Maintained—Pull	Maintained—Push	Lamp	Type	Voltage	Contact Type	Mounting Location A	Mounting Location B	LED/Lamp Number	Red Standard Push-Pull Catalog Number ②
0	X	LED	Full Voltage	24 Vac/Vdc	1NO			Bayonet base	10250T597LRD24-1X
X	0			120 Vac/Vdc	1NC				10250T597LRD24A-1X
			Transformer	24 Vac		10250T589LRD06-1X			
				120 Vac		10250T563LRD06-1X			
0	X	Incandescent	Full voltage	24 Vac/Vdc	1NO			#757	10250T579C47-1X
X	0			120 Vac/Vdc	1NC			120MB	10250T580C47-1X
			Transformer	24 Vac		#755	10250T589C47-1X		
				120 Vac		10250T563C47-1X			

10250ED137_

Jumbo Lens Illuminated E-Stops







Lamp	Button Type/Color	Type	Voltage	Contact Type	Catalog Number
LED	Two-position illuminated maintained push/pull— 50 mm jumbo lens/red	Full voltage	24 Vac/Vdc	1NO 1NC	10250ED1375
LED	Three-position illuminated momentary push/pull— 50 mm jumbo lens/red	Full voltage	24 Vac/Vdc	1NC 1NC	10250ED1376
LED	Three-position illuminated momentary push/pull— 50 mm jumbo lens/red	Full voltage	24 Vac/Vdc	1NO 1NC	10250ED1377
LED	Three-position illuminated maintained push/momentary pull— 50 mm lens/red	Full voltage		1NO 1NC	10250ED1378

Notes

- ① X = closed circuit, 0 = open circuit.
- ② To order different type or color lens, substitute the underlined characters with appropriate suffix code from table on next page. Example: 10250T579C63-1X. For LEDs with different voltages see ordering example on **Page V7-T1-191**.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Lens and Color Selection

	Color	Incandescent Suffix Code	LED Suffix Code	Catalog Number
Standard 	Standard—40 mm			
	Red	C47	RD	10250TC47
	Red (EMERG. STOP)	C53	ED	10250TC53
	Green	C48	GD	10250TC48
	Blue	C49	LD	10250TC49
	Amber	C50	AD	10250TC50
	White	C51	WD	10250TC51
	Clear	C52	CD	10250TC52
Side-Lighted Aluminum 	Side-Lighted Aluminum—40 mm ^①			
	Red	C57	RS	10250TC57
	Red (EMERG. STOP)	C63	ES	10250TC63
	Green	C58	GS	10250TC58
	Blue	C59	LS	10250TC59
	Amber	C64	AS	10250TC64
	Yellow	C60	YS	10250TC60
	White	C61	WS	10250TC61
Clear	C62	CS	10250TC62	
Aluminum Transparent Center 	Aluminum Transparent Center—40 mm ^①			
	Red	C65	RH	10250TC65
	Green	C66	GH	10250TC66
Jumbo Lens 	Jumbo Lens—50 mm			
	Red	—	—	10250TC77

Note

^① Clear anodized aluminum and colored lens.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Three-Position Push-Pull Operator



Three-Position Illuminated Momentary Push, Momentary Pull

Operator Position ①

Momentary— Pull	Maintained— Intermediate	Momentary— Push	Lamp	Type	Voltage	Contact Type	Mounting Location		LED/ Lamp Number	Red Standard Push-Pull Catalog Number ③	
							A	B			
0	0	X	LED	Full voltage	24 Vac/Vdc	1NO			Bayonet base	10250T1097LRD24-1X	
X	0	0			120 Vac	1NC				10250T1097LRD2A-1X	
					Transformer	24 Vac					10250T1089LRD06-1X
					120 Vac					10250T1063LRD06-1X	
X	0	0	Incan- descent	Full voltage	24 Vac/Vdc	1NC			Bayonet base	10250T497LRD24-3X	
X	X	0			120 Vac	1NC				10250T497LRD2A-3X	
					Transformer	24 Vac					10250T489LRD06-3X
					120 Vac					10250T463LRD06-3X	
0	0	X	Incan- descent	Full voltage	24 Vac/Vdc	1NO			#757	10250T1079C47-1X	
X	0	0			Resistor	120 Vac				1NC	10250T1080C47-1X
					Transformer	24 Vac					10250T1089C47-1X
					120 Vac					10250T1063C47-1X	
X	0	0	Incan- descent	Full voltage	24 Vac/Vdc	1NC			#757	10250T479C47-3X	
X	X	0			Resistor	120 Vac				1NC	10250T480C47-3X
					Transformer	24 Vac					10250T489C47-3X
					120 Vac					10250T463C47-3X	

Three-Position Push-Pull Operator



Three-Position Illuminated Maintained Push, Momentary Pull

Operator Position ①

Momentary— Pull	Maintained— Intermediate	Momentary— Push	Lamp	Type	Voltage	Contact Type	Mounting Location		LED/ Lamp Number	Red Standard Push-Pull Catalog Number ②	
							A	B			
X	0	0	LED	Full voltage	24 Vac/Vdc	1NC			Bayonet base	10250T997LRD24-3X	
X	X	0			120 Vac	1NC				10250T997LRD2A-3X	
					Transformer	24 Vac					10250T989LRD06-3X
					120 Vac					10250T963LRD06-3X	
X	0	0	Incan- descent	Full voltage	24 Vac/Vdc	1NC			#757	10250T979C47-3X	
X	X	0			Resistor	120 Vac				1NC	10250T980C47-3X
					Transformer	24 Vac					10250T989C47-3X
					120 Vac					10250T963C47-3X	

Notes

- ① X = closed circuit, 0 = open circuit.
- ② To order different type or color lens, substitute the underlined characters with appropriate suffix code from table on **Page V7-T1-186**. Example: 10250T1079C53-1X. For LEDs with different voltages see ordering example on **Page V7-T1-191**.
- ③ To order different type or color lens, substitute the underlined characters with appropriate suffix code from table on **Page V7-T1-186**. Example: 10250T979C53X. For LEDs with different voltages see ordering example on **Page V7-T1-191**.

Potentiometers

UL (NEMA) Type 3, 3R, 4, 12, 13

**Vertical or Horizontal
One-Hole Mounting** ①**Potentiometer with Knob and Standard Dial Plate—Linear Type $\pm 10\%$**

Potentiometer Ohms	Catalog Number
2 Watt (60V Max.) Single Potentiometer with Standard Aluminum Dial Plate ②③	
1000	10250T331
2500	10250T332
5000	10250T338
10000	10250T333
25000	10250T334
50000	10250T335
Operator only ④	10250T330
Alternative—black plastic large legend with standard markings	E34LP99

Notes

- ① Shown with standard aluminum dial plate.
- ② Large dial plate with space for legend is available at no charge. To order, add suffix **36** to catalog number. Example: 10250T331**36**. To order separately, see footnote ③ below.
- ③ Large dial plate has space at top for 15 letters. 3/32 in high. For custom stamped legend plates, order legend plate as separate item **10250TR30** and specify stamping.
- ④ For use with commercially purchased potentiometers having shaft dimensions per dimension drawing on **Page V7-T1-235**.

Push-Pull Operators

An illuminated push-pull pushbutton unit, arranged for one-hole mounting, can replace two pushbuttons and a pilot light or the non-illuminated form can replace two pushbuttons. These units are available in three basic types:

- **Maintained**—(Two-position). Maintains in the pulled or pushed position until manually actuated to the opposite mode.
- **Momentary**—(Three-position). Spring returns to an intermediate position when pulled or pushed and released.
- **Momentary Pull, Maintained Push**—(Three-position). Spring returns to intermediate position when pulled. Maintains in pushed position until manually returned to intermediate (ready to reset) position. Maintained stop holds circuit open and will prevent other series connected operators from starting the system.

The operators, buttons, contact blocks, etc., are offered as building block components that can be intermixed to satisfy many requirements. This minimizes the need for a varied and costly inventory.

Two-Position Maintained Push-Pull ①



Typical Applications

Control	Line—Diagram	Operator	Circuits	Operator Mode						
Three-wire three-position momentary		Momentary push and pull 10250T4	2NC contact block 10250T3	<table border="0"> <tr> <td>START (mom.)</td> <td>Normal pos. (maint.)</td> <td>STOP (mom.)</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	START (mom.)	Normal pos. (maint.)	STOP (mom.)			
START (mom.)	Normal pos. (maint.)	STOP (mom.)								
Two-wire two-position maintained		Maintained push and pull 10250T5	1NO-1NC contact block 10250T1	<table border="0"> <tr> <td>START (maint.)</td> <td>No intermediate position</td> <td>STOP (maint.)</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	START (maint.)	No intermediate position	STOP (maint.)			
START (maint.)	No intermediate position	STOP (maint.)								
Three-wire momentary pull maintained push		Maintained push and momentary pull 10250T9	2NC contact block 10250T3	<table border="0"> <tr> <td>START (mom.)</td> <td>Normal pos. (maint.)</td> <td>STOP (maint.)</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </table>	START (mom.)	Normal pos. (maint.)	STOP (maint.)			
START (mom.)	Normal pos. (maint.)	STOP (maint.)								

Notes

A and B circuits shown in the application illustrations are defined in the "Application Guide" on the following page.
 ① Shown without button on lens.

1.7

Pushbuttons and Indicating Lights

30.5 mm Heavy-Duty Watertight/Oiltight—10250T

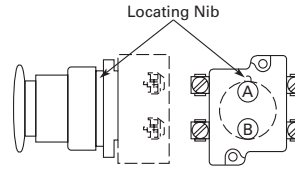
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Application Guide

To assist in the selection of contact blocks, the sketch to the right shows pictorially by symbols **A** and **B** locations of contact circuits after assembly of contact blocks

and adapter to the operator. The table below shows the effect of the push and pull operations on either NO or NC contacts. (X = contact closed, O = contact open).

Contact Circuit Locations

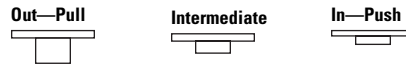


10250T579C47-71X

Push-Pull Operator Components



Operator Position and Circuit Arrangement



Contact Block Mounting Location

Type of Operator	Out—Pull		Intermediate		In—Push		Contact Block ①	Catalog Number
	A	B	A	B	A	B		
Two-Position Operator without Lens								
Maintained push-pull	O	O	No intermediate position		X	X	1NO	10250T5
	X or	X			O or	O	1NC	
Maintained push-pull with anti-theft jumbo mushroom	O	O	No intermediate position		X	X	1NO	10250ED1080
	X or	X			O or	O	1NC	
	O	O			X	X	2NO	
	X	X			O	O	2NC	
Three-Position Operator without Lens								
Momentary push-pull	O	O	O	O	X	O	1NO	10250T4 ①
	X or	X	O or	X	O or	O	1NC	
	O	O	O	O	X	O	2NO	
	X	X	O	X	O	O	2NC	
Maintained push-momentary pull	O	O	O	O	X	O	1NO	10250T9 ①
	X or	X	O or	X	O or	O	1NC	
	O	O	O	O	X	O	2NO	
	X	X	O	X	O	O	2NC	
Momentary push-pull	O	O	O	O	X	X	1NO	10250T10 ①
	X or	X	O or	O	O or	O	1NC	
	O	O	O	O	X	X	2NO	
	X	X	O	O	O	O	2ND	

Note

① Maximum of two blocks, four circuits. Special function contact blocks shown on **Page V7-T1-221** CANNOT be used with three-position push-pull operators 10250T4, 10250T9 or 10250T10.

Push-Pull Light Units, Lenses and Buttons

Ordering Example with One Composite Number

Non-illuminated:

10250T5 + 10250TB62 + 10250T1 = **10250T5B62-1X**

Incandescent:

10250T5 + 10250T79 + 10250TC47 + 10250T1 = **10250T579C47-1X**

LED:

10250T5 + 10250T97L + 10250TC47 + Voltage code + 10250T1 = **10250T597LRD24-1X**

06—6 Vac/Vdc
 12—12 Vac/Vdc
 24—24 Vac/Vdc
 48—48 Vac/Vdc

60—60 Vac/Vdc
 2A—120 Vac
 2D—120 Vdc

Light Units for Illuminated Push-Pull Devices

Light Unit Type	Type	Voltage	LED/Lamp Number	Catalog Number	
LED (LEDs not included) ^①	Full voltage	—	Bayonet base	10250T97L	
	Transformer	24		10250T89L	
	AC only	120		10250T63L	
	50/60 Hz	208		10250T64L	
		240		10250T65L	
		277		10250T82L	
		380		10250T66L	
		480		10250T67L	
		600		10250T68L	
		Incandescent		Full voltage	6
AC or DC			12	10250T70	
	24/28		10250T79		
	32		10250T83		
	Resistor		120	120MB	10250T80
AC or DC	240		10250T81		
	Transformer		24	#755	10250T89
	AC only		120	10250T63	
	50/60 Hz		208	10250T64	
			240	10250T65	
		277	10250T82		
		380	10250T66		
		480	10250T67		
600		10250T68			

Note

① These units do not include lamps. Order LED separately to match lens color, see **Page V7-T1-225**.

Alternate Lenses for Illuminated Push-Pull Devices

Lens Color	Incandescent Suffix Code	LED Suffix Code ^①	Catalog Number
Standard			
Red	C47	RD	10250TC47
Red (EMERG. STOP)	C53	ED	10250TC53
Green	C48	GD	10250TC48
Blue	C49	LD	10250TC49
Amber	C50	AD	10250TC50
White	C51	WD	10250TC51
Clear	C52	CD	10250TC52
Side-Lighted Anodized Aluminum Ring			
Red	C57	RS	10250TC57
Red (EMERG. STOP)	C63	ES	10250TC63
Green	C58	GS	10250TC58
Blue	C59	LS	10250TC59
Amber	C64	AS	10250TC64
Yellow	C60	YS	10250TC60
White	C61	WS	10250TC61
Clear	C62	CS	10250TC62
Heavy-Duty Aluminum			
Heavy-Duty Aluminum with Transparent Center			
Red	C65	RH	10250TC65
Green	C66	GH	10250TC66
Amber	C67	AH	10250TC67
Blue	C69	—	10250TC69
White	C68	—	10250TC68
Jumbo Lens			
Jumbo Lens—50 mm			
Red	—	—	10250TC77

Buttons for Non-Illuminated Push-Pull Devices

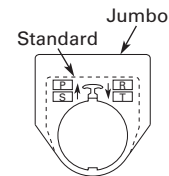
Color	Suffix Code	Catalog Number
Standard		
Red	B62	10250TB62
Red (EMERG. STOP)	B63	10250TB63
Green	B61	10250TB61
Black	B60	10250TB60
Blue	B64	10250TB64
Jumbo Mushroom Head (Anodized) Aluminum		
Red	J62	10250TJ62
Red (EMERG. STOP)	J63	10250TJ63
Green	J61	10250TJ61
Black	J60	10250TJ60
Yellow	J64	10250TJ64

Notes

- ① Suffix codes should only be used for assembling composite catalog numbers. To order lens above, order by catalog number.
- ② Anodized aluminum head is not suitable for use in ultraviolet light applications.

Legend Plates

For a complete listing of available legend plates see **Pages V7-T1-216 to V7-T1-218**.



Selector Switch Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

- Two-, three- and four-position maintained
- Non-illuminated and illuminated

Two-Position Maintained Switch



Two-Position Selector Switch

Operator Position ^①		Operator Action ^②	Contact Type	Mounting Location		Non-Illuminated		Illuminated—120V Transformer	
				A	B	Black Knob Catalog Number ^③	Black Lever Catalog Number ^③	Red Knob Catalog Number ^③	Red Lever Catalog Number ^③
X	0		1NC			<u>10250T20KB</u>	<u>10250T20LB</u>	<u>10250ED1117-KR</u>	<u>10250ED1117-LR</u>
0	X		1NO						

Three-Position Maintained Switch



Three-Position Selector Switch

Operator Position ^①			Operator Action ^②	Contact Type	Mounting Location		Non-Illuminated		Illuminated—120V Transformer	
					A	B	Black Knob Catalog Number ^③	Black Lever Catalog Number ^③	Red Knob Catalog Number ^③	Red Lever Catalog Number ^③
X	0	0		1NO		<u>10250T21KB</u>	<u>10250T21LB</u>	<u>10250ED1117-2KR</u>	<u>10250ED1117-2LR</u>	
0	0	X		1NO						

Three-Position Maintained Switch



X	0	0		1NO		<u>10250T22KB</u>	<u>10250T22LB</u>	<u>10250ED1117-3KR</u>	<u>10250ED1117-3LR</u>
0	X	0		2NC (Series)					
0	0	X		1NO					

Three-Position Maintained Switch



Four-Position Selector Switch

Operator Position ^①				Operator Action ^②	Contact Type	Mounting Location		Non-Illuminated		Illuminated—120V Transformer	
						A	B	Black Knob Catalog Number ^③	Black Lever Catalog Number ^③	Red Knob Catalog Number ^③	Red Lever Catalog Number ^③
X	0	0	0		1NC		<u>10250T46KB</u>	<u>10250T46LB</u>	<u>10250ED1117-4KR</u>	<u>10250ED1117-4LR</u>	
0	X	0	0		1NO						
0	0	X	0		1NO						
0	0	0	X		1NC						

Color Selection

Illuminated						Non-Illuminated					
Color	Code Letter	Color	Code Letter	Color	Code Letter	Color	Code Letter	Color	Code Letter	Color	Code Letter
Red	R	White	W	Amber	A	Black	B	Green	G	Blue	L
Green	G	Blue	B	Clear	C	Red	R	White	W	Orange	O

Notes

- ① X = closed circuit, 0 = open circuit.
- ② M = Maintained.
- ③ To order different type or color selector switch, substitute the underlined character with appropriate suffix code from the Color Selection table. Example: 10250T20KG.

1

Selector Switch Selection



Cam and Contact Block Selection

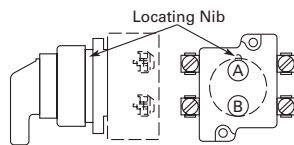
Selector switches in their varied forms (two-position, three-position and four-position) are a big factor contributing to the great flexibility of control that a well rounded line of “pushbuttons” can achieve. Because of their flexibility, they tend to cause difficulty with product selection and application. The following systematic approach should simplify that task.

Cam and contact block selection is better understood if you:

- Work with each incoming and outgoing wire/circuit separately.
- Recognize the terms NO and NC only identify the type of contact by its mode before mounting to the operator. The “X-O” table (Page V7-T1-196) shows how that contact will act after assembly to the operator with the selected cam shape. X = closed circuit, O = open circuit.

- Up to six NO or NC contacts may be mounted behind each plunger location for a total of twelve contacts. Single circuit contact blocks have only one plunger with the other side of the block “open.” Therefore, single circuit contact blocks transmit motion to blocks behind them only for the position containing the circuit.
- Each cam has two separate lobes, each of which operates one of the two contact block plungers independently of each other. Those are identified as position A (locating nib side) and position B (opposite of locating nib). The position designations give direction in selecting and mounting of the contact blocks.

Contact Circuit Locations

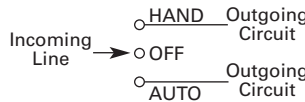


Systematic Approach

Application: **HAND-OFF-AUTO** selector switch. In this circuit, one incoming line is distributed to two other outgoing circuits by the switch. The two circuits can be looked at individually.

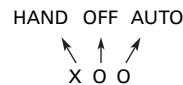
Step 1: Elementary Diagram.

Construct on paper, or in your mind, a simple elementary diagram of the switching scheme as follows:



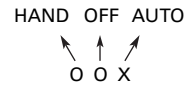
Step 2: “X-O” Pattern.

From the elementary diagram, you can construct an “X-O” diagram which describes when the contacts are to be closed (X) or open (O) in the various positions of the switch. The “X-O” for the **HAND** circuit looks like this:



In this circuit, you want a contact closed on the left (HAND) but open in the center and right.

For the **AUTO** circuit, the “X-O” diagram would look like this:



Putting them together, the complete “X-O” diagram is:



Once the “X-O” diagram has been generated the next step is to select the cam and contact block, or blocks, needed to perform the desired “X-O” functions. The selection tables on the following pages list the various types (shapes) of cams by number to choose from and the type of contact and position to achieve the function outlined in your “X-O” diagram.

Step 3: Cam Selection.

The cam you select determines the operation of all contact blocks mounted to the operator. It is selected on the basis that it provides the simplest circuitry for the desired “X-O” diagram. The selection tables show all the “X-O” combinations. For the purpose of this example, the applicable portion of those tables is shown on this page.

Now to make the cam selection, make a simple worksheet such as:

	Cam 2	Cam 3
X O O	(A)NO-(B)NC	(A)NO
O O X	(B)NO	(B)NO

It becomes immediately obvious that cam 3 is the better choice for two reasons, (1) the series combination can be avoided making it simpler to wire, (2) only two contacts are required, which is less expensive than the three contacts required by cam 2.

Step 4: Contact Block Selection.

Having selected the cam, contact block selection is simply a matter of gathering the A position and B position circuits into pairs which make up the most convenient contact block arrangement. If there is an imbalance in the number of circuits under A or B, then single circuit blocks must be selected for these leftover circuits.

Back to the worksheet, having selected cam 3 do this:



Step 5: Selector Switch Operator.

Lastly, you have to choose from the many types of operators—knob and lever in various colors or keyed. Also what combinations of maintained and spring return functions are required. Selection of these operators can be found on **Page V7-T1-198**. For the example in step 4 you may want a three-position maintained black knob, cam 3—Catalog Number 10250T1323.

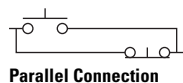
The Complete Switch: 10250T1323 with one 10250T2 or, for one composite catalog number, 10250T21KB found on **Page V7-T1-193**.

Diagrams

Circuits shown illustrate connections to obtain a selector switch circuit combination and are shown with their appropriate line diagrams. Field wiring of jumper connections required as shown.

X = Closed circuit
O = Open circuit

Wiring of Jumper Connections



Four-position selector switches are limited to four contact blocks.

Contact Blocks

For selection and number of available contact blocks per operator, see **Pages V7-T1-221 to V7-T1-224**.

Example Selection Table

No.	"X-O" Pattern	Cam Code #2		Cam Code #3	
		Top A	Bottom B	Top A	Bottom B
1	X 0 0				—
4	0 0 X	—		—	

Two-Position Selector Switch Contact Block Selection

No.	Desired Circuit and Operator Position		Contact Blocks Required to Accomplish Circuit Function	
			Top Plunger A	Bottom Plunger B
1	X	0		or
2	0	X		or

Note
① Wired in series.

1.7

Pushbuttons and Indicating Lights

30.5 mm Heavy-Duty Watertight/Oiltight—10250T

1 Three-Position Switch—Cam and Contact Block Selection

No.	Desired Circuit and Operator Position			Contact Blocks Required to Accomplish Circuit Function (Jumpers must be installed where indicated)				
				Operator with Cam Code #2		Operator with Cam Code #3		
				Mounting Location		Mounting Location		
			Top Plunger A	Bottom Plunger B	Top Plunger A	Bottom Plunger B		
1	X	0	0					
2	X	X	0					
3	X	0	X					
4	0	0	X					
5	0	X	X					
6	0	X	0					

Four-Position Switch—Contact Block Selection

No.	Desired Circuit and Operator Position				Contact Blocks Required to Accomplish Circuit Function		No.	Desired Circuit and Operator Position				Contact Blocks Required to Accomplish Circuit Function	
					Mounting Location							Mounting Location	
					Top Plunger A	Bottom Plunger B						Top Plunger A	Bottom Plunger B
1	X	0	0	0			10	X	0	X	0		
2	0	X	0	0									
3	0	0	X	0			11	X	X	X	0		
4	0	0	0	X									
5	X	0	0	X			12	0	X	X	X		
6	0	X	X	0									
7	0	0	X	X			13	X	0	X	X		
8	X	X	0	0									
9	0	X	0	X			14	X	X	0	X		

Selector Switch Operators

Key Operators

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Two-Position Maintained ^①



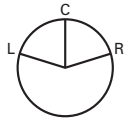
Key Operators with Cam

Positions	Operator Action ^②	Cam Code ^③	Optional Key Removal Positions ^④	Vertical Mounting Catalog Number	Horizontal Mounting Catalog Number
Two-position—60° throw		1	1, 2, 3	10250T1511_	10250T1611_
		1	2	10250T1571_	10250T1581_
Three-position—60° throw		2	1-7	10250T1522_	10250T1622_
		3		10250T1523_	10250T1623_
		2	1, 4, 5	10250T1532_	10250T1632_
		3		10250T1533_	10250T1633_
		2	4	10250T1542_	10250T1642_
		3		10250T1543_	10250T1643_
Four-position—40° throw		2	2, 4, 6	10250T1652_	10250T1662_
		3		10250T1653_	10250T1663_
		7	7	10250T1677_	10250T1687_

Notes

- ① Horizontal mount, key removal #1 keyed selector switch, cam 1 shown.
- ② M = Maintained. S = Spring return in direction of arrow (R).
- ③ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and tables on **Pages V7-T1-194, V7-T1-195 and V7-T1-196.**
- ④ Choose key removal position required for application from table on **Page V7-T1-198.** Add key removal code no. to listed catalog number. Example: 10250T15112.

Key Removal Positions



Code Suffix	Key Removal Position
1	Right only
2	Left only
3	Right and left
4	Center only
5	Right and center
6	Left and center
7	All positions

Note: Key removal in “spring return from” positions not recommended.

Replacement Keys or Dissimilar Locks for Key Operators

Operators listed on **Page V7-T1-198** have identical locks and keys (Key Code H661) Catalog Number 10250ED824. For dissimilar lock and key combinations, see listing on this page.

Replacement Key

Description	Catalog Number
Replacement keys (code H661)	10250ED824

Selector Switch Operators with Dissimilar Locks and Keys (UL [NEMA] 4, 4X and 13)

The locks in all key operators listed on **Pages V7-T1-177, V7-T1-198** and **V7-T1-335** are identical and use key code number H661. Two keys are supplied with every lock. For additional code number H661 keys, order **Catalog Number 10250ED824**. For others, order 10250ED1130 and designate lock number. When dissimilar locks for each operator or each group of operators are required, select from the lock and key combination listed below. **When Ordering Operator Only** or a complete control unit with a substitute lock, order from table below and add “except Lock and Key Code No. ...”

“H” Series Locks without Master Key—with Key Slot Cover

Lock and Key Code Numbers		
H501	H635	H663
H620	H639	H675
H621	H643	H683
H634	H654	H688

“M” Series Locks with Master Key—with Key Slot Cover

Lock and Key Code Numbers			
MD1	MD14	ME8	MJ6
MD2	MD15	ME11	MJ10
MD3	MD16	ME16	MJ11
MD4	MD19	ME17	MJ13
MD5	MD20	ME18	MJ15
MD7	ME2	ME19	MJ16
MD9	ME3	MJ1	MD17
MD10	ME5	MJ3	
MD11	ME6	MJ4	
MD13	ME7	MJ5	

Master Keys for Above Locks

Application	Catalog Number
For code:	
MD1–MD20	10250ED825-3
ME2–ME18	10250ED825-4
MJ1–MJ16	10250ED825-5

Selector Switch Operators with Caps

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Selector Switch Operators with Caps

Positions	Operator Action ^②	Black Knob Selector Switch—Vertical Mounting ^③		Black Lever Selector Switch—Vertical Mounting ^③		
		Cam Code ^④	Catalog Number	Cam Code ^④	Catalog Number	
Two-Position Maintained ^①	Two-position—60° throw		1	10250T1311	1	10250T3011
			1	10250T1371	1	10250T3071
Three-Position Maintained ^⑤	Three-position—60° throw		2	10250T1322	2	10250T3022
			3	10250T1323	3	10250T3023
			2	10250T1332	2	10250T3032
			3	10250T1333	3	10250T3033
			2	10250T1342	2	10250T304
			3	10250T1343	3	10250T3043
			2	10250T1352	2	10250T3052
			3	10250T1353	3	10250T3053
Four-position—40° throw		7	10250T1367	7	10250T3067	

Notes

- ① Black knob selector switch, cam 1 shown.
- ② M = Maintained. S = Spring return in direction of arrow.
- ③ Field convertible to horizontal mounting or order operator only and separate operator cap.
- ④ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and tables on **Pages V7-T1-194, V7-T1-195** and **V7-T1-196**.
- ⑤ Black lever selector switch, cam 3 shown.

Selector Switch Operators without Caps

Operators can be ordered with caps assembled to them by adding the code number from the table on this page to the end of catalog number below.
Example: 10250T4011**KB**

Two-Position Selector Switch Maintained



Selector Switch Operators without Caps

Positions	Operator Action ①	Cam Code ②	Catalog Number
Two-position—60° throw		1	10250T4011
		1	10250T4081
Three-position—60° throw		2	10250T4022
		3	10250T4023
		2	10250T4032
		3	10250T4033
		2	10250T4042
		3	10250T4043
Four-position—40° throw		2	10250T4052
		3	10250T4053
		7	10250T4067

Knob



Lever



Lever for Use with Maintained Operators



Coin Slot



Operating Caps

Color	Knob Catalog and Code Number	Lever Catalog and Code Number	Color	Lever ③ Catalog and Code Number	Coin Slot Catalog and Code Number
Black	10250TKB	10250TLB	Black	10250TSB	10250TCB
Red	10250TKR	10250TLR	Red	10250TSR	10250TCR
Green	10250TKG	10250TLG	Green	10250TSG	10250TCG
Yellow	10250TKY	10250TLY	Yellow	10250TSY	10250TCY
White	10250TKW	10250TLW	White	10250TSW	10250TCW
Gray	10250TKA	10250TLA	Gray	10250TSA	10250TCA
Blue	10250TKL	10250TLL	Blue	10250TSL	10250TCL
Orange	10250TKD	10250TLO	Orange	10250TSO	10250TCO

Notes

- ① M = Maintained. S = Spring return in direction of arrow (R).
- ② For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and tables on **Pages V7-T1-194, V7-T1-195 and V7-T1-196**.
- ③ Designed for added ingress protection. For use in maintained operators only.

Illuminated Selector Switch Operators

Illuminated Selector Switches without Caps

Two-Position Selector Switch Maintained



Operator without Knob or Lever

Positions	Operator Action ①	Transformer Type—50/60 Hz 6 Volt #755 Lamp			Full Voltage Type—AC or DC ④ Lamps: 6V—#755, 12V—#756, 24V—#757, 48V—#1835, 120/240V—120MB		
		Cam Code ②	Voltage	Code Number and Catalog Number ③	Cam Code ②	Voltage	Code Number and Catalog Number ③
Two-position—60° throw		1	24	10250T5961	1	6	10250T6201
			120	10250T5971		12	10250T6211
			208	10250T6511		24	10250T6221
			240	10250T5981		48	10250T6231
			380	10250T5991		120	10250T6361
			480	10250T6001		240 ⑤	10250T6371
			600	10250T6011			
Three-position—60° throw		+ 2 or 3	24	10250T602_	+ 2 or 3	6	10250T624_
			120	10250T603_		12	10250T625_
			208	10250T652_		24	10250T626_
			240	10250T604_		48	10250T627_
			380	10250T605_		120	10250T638_
			480	10250T606_		240 ⑤	10250T639_
	600	10250T607_					
		+ 2 or 3	24	10250T654_	+ 2 or 3	6	10250T612_
			120	10250T620_		12	10250T632_
			208	10250T655_		24	10250T642_
			240	10250T656_		48	10250T672_
			380	10250T657_		120	10250T622_
			480	10250T658_		240	10250T682_
	600	10250T659_					
	+ 2 or 3	24	10250T660_	+ 2 or 3	6	10250T613_	
		120	10250T621_		12	10250T633_	
		208	10250T661_		24	10250T643_	
		240	10250T662_		48	10250T673_	
		380	10250T663_		120	10250T623_	
		480	10250T664_		240	10250T683_	
600	10250T665_						
	+ 2 or 3	24	10250T614_	+ 2 or 3	6	10250T628_	
		120	10250T615_		12	10250T629_	
		208	10250T653_		24	10250T630_	
		240	10250T616_		48	10250T631_	
		380	10250T617_		120	10250T640_	
		480	10250T618_		240 ⑤	10250T641_	
600	10250T619_						
Four-position—40° throw		7	24	10250T6087	7	6	10250T6327
			120	10250T6097		12	10250T6337
			208	10250T6547		24	10250T6347
			240	10250T6107		48	10250T6357
			380	10250T6117		120	10250T6427
			480	10250T6127		240 ⑤	10250T6437
			600	10250T6137			

Notes

- ① M = Maintained. S = Spring return in direction of arrow (R).
- ② For selection of the proper cam and contact block, to obtain the proper circuit sequence, see selection tables on **Pages V7-T1-194, V7-T1-195 and V7-T1-196**.
- ③ Operator includes lens gasket and lens attachment screws.
- ④ Full voltage light units can be used at other than listed voltages by changing lamp. Replacement lamps are listed on **Page V7-T1-225**.
- ⑤ Resistor type. May generate excess heat if used in high density.

Knob



Lever



Illuminated Knobs and Levers

Color ^①	Knob Code Number and Catalog Number	Lever Code Number and Catalog Number
Red	10250TER	10250TFR
Green	10250TEG	10250TFG
Yellow	10250TEA	10250TFA
Blue	10250TEL	10250TFL
Clear	10250TEC	10250TFC
White	10250TEW	10250TFW
Amber	10250TEM	10250TFM

Joystick Units

Two-Position Joystick



Joystick Units—UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Operator Position ^②

	Up	Center	Down	Operator Action ^③	Contact Type	Mounting Location		Two-Position Assembled Unit Catalog Number ^④
						A	B	
X					1NC			10250T452-3X
0					1NC			

Notes

- ① Amber, clear and white lenses have a black arrow (pointer), red, green and blue lenses have a white arrow (pointer).
- ② X = closed circuit, 0 = open circuit.
- ③ M = Maintained. S = Spring return in direction of arrow (R).
- ④ Field convertible momentary to maintained or vice versa.

1

Joysticks

Two-Position Joystick Operators

The device mounts in the standard 30.5 mm mounting hole. Allow sufficient panel space for lever movement.

The maximum travel of the knob operator (full up to full down) is 2.2 in (24°) momentary, 2.5 in (30°) maintained, but ample space for lever operation must be allowed. These operators are field convertible from momentary to maintained operation or vice versa.

The use of NC contacts is preferred because they provide positive drive contact opening and a direct relationship between lever movement and affected terminal, i.e., up movement affects the top terminals.

Application Caution

Joystick operators are not recommended on certain DC applications above 24 Vdc which may involve lightly engaging the contacts (teasing) to achieve speed control, positioning, jogging, etc. Excessive arcing and deterioration of the contacts will occur.

Two-Position Joystick Operator



Two-Position Joystick Operators—UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

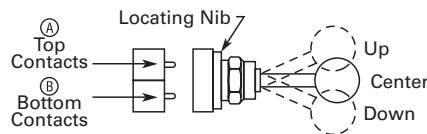
Contact Block Limitations	Two-Position Operator Only—AC Applications Only Description ^①	Catalog Number
Momentary Mode 4NC contact blocks max. 3NO contact blocks max.	Momentary up and down	10250T452
	Maintained up—momentary down	10250T4521
	Maintained down—momentary up	10250T4522
Maintained Mode 2 contact blocks max.	Maintained up and down	10250T4525

Contact Block Operation and Selection

Handle Position ^②

Up	Center	Down	Contact Block Type ^④	Mounting Location ^{②③}		Catalog Number
				Top A	Bottom B	
			1NC			10250T51
			1NC			10250T51
			2LONC (Series)			10250T45
			1NC			10250T3
			1NC			10250T3
			1LONC			10250T45
			1LONC			10250T45
			1NC			10250T44 ^⑤
			1NO			10250T44 ^⑤
			1NC			10250T44 ^⑤
			1NO			10250T44 ^⑤

A and B Mounting Location



<u>Up</u>	<u>Center</u>	<u>Down</u>
NC Contact at Top Is Closed, NO at Bottom Is Closed	All NC and NO Contacts Are Open (1/2 Way), Late Opening NC Is Closed	NC Contact at Bottom Is Closed, NO at Top Is Closed

Notes

- ① Field convertible momentary to maintained or vice versa. To expedite shipment of maintained types, order momentary operator 10250T452 which is a stocked device.
- ② Bolded circuit corresponds to "X-O" circuit selection. X = closed circuit, O = open circuit.
- ③ See above for "A" and "B" mounting location.
- ④ NO = normally open, NC = normally closed, LONC = late opening normally closed.
- ⑤ Four circuits in single block depth—rated 300V max.

Four-Position Joystick Operators

The joystick operated control unit is intended for AC application only. For other use, see **Application** **Caution** on preceding page.

The panel area required for the four-position operator is equivalent to two standard pushbutton operators.

The latch holds the lever in the center position. The trigger latch must be released before lever can moved into any position.

Four-Position Joystick Operator



Four-Position Joystick Operator with Latch



Four-Position Joystick Operators—UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Contact Block Limitations	Description ①	Catalog Number
Operator Only—AC Application Only		
Four contact blocks max.—two in each position	Four-position—without latch	10250T451_
	Four-position—with latch	10250T461_
Hole Plug		
Four contact blocks max.—two in each position	To plug unused hole	10250TA7

Field Conversion—Gate

The factory assembled four-position operator is assembled with a gate arranged for four handle positions.

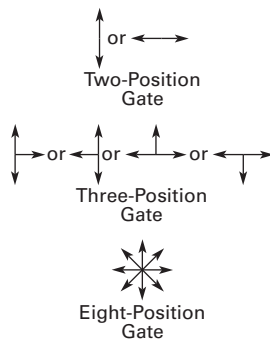
Handle Positions



Four-Position Gate

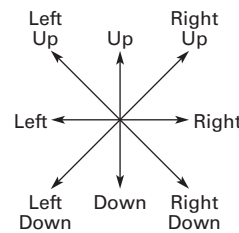
Three additional gates, supplied with every operator, allow on the job conversion to three- or eight-position operation as illustrated.

Two-, Three- or Eight-Position Operation



The eight-position gate controls the four functions shown as “Up,” “Down,” “Left” and “Right.” The remaining four diagonal positions each actuate two adjacent functions; for example, “Left Down” actuates both “Left” and “Down.” The operator may be arranged for spring return of handle to center position, or maintained in up to eight positions (see description of maintained position operator).

Adjacent Functions



Maintained Position

For maintained position (non-spring return), locate required maintained position or positions of operating lever and add appropriate suffix number to the catalog number selected from the table above.

Maintained Positions

Maintained Positions				Suffix Number
Up	Down	Left	Right	
X	—	—	—	1
—	—	—	—	2
—	X	—	—	3
—	—	X	—	4
—	—	—	—	5
X	—	X	—	6
X	—	—	X	7
—	X	X	—	8
—	X	—	X	9
—	—	X	X	10
X	X	X	—	11
X	X	—	X	12
X	—	X	X	13
—	X	X	X	14
X	X	X	X	15

On an eight-position gate, when an adjacent vertical and horizontal position are both maintained, the included diagonal position is also maintained.

Note

① Momentary operators—spring return to center. For maintained operators add suffix code from table on this page. Example: 10250T451**10**. Operator without latch, maintained in left and right positions.

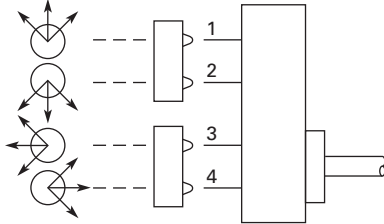
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Contact Block Operation

Contact blocks mount directly to the back of the operator. For reliable operation, the maximum number of contact blocks that should be installed behind each operator lever is two (four total).

The figure below identifies the circuits activated by each of the eight possible lever positions. Contact block plungers 1, 2, 3, 4 are depressed (change state) when handle is in the position indicated by arrows below.

Circuit Activation



Note: Joystick in its resting state, center position, does not activate contact block plungers.

Ordering Example:

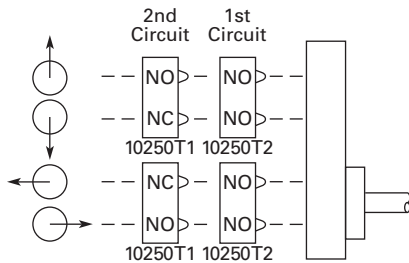
Suppose you are looking for a four-position momentary joystick without a latch and the following circuit arrangements. X = Closed Circuit, O = Open Circuit.

Example Circuit Arrangements

Circuit	Up	Down	Left	Right
1st	X	X	X	X
2nd	X	O	O	X

The contact blocks and their mounting locations would be as follows:

Example Contact Blocks and Locations



A complete bill of material for this example would include:

Example Order

Qty.	Catalog Number
1	10250T4
2	10250T2
2	10250T1

Blank Legend Plates for Joystick Operators

When ordering engraved legend plates, order by catalog number and insert the following into order notes:

- Legend required
- Size of characters: 3/16, 1/8, 3/32 in (4.8, 3.2, 2.4 mm)
- Location by letter (A–N)

Locations K and M can accommodate up to two lines horizontally; L and N up to two lines vertically.

Maximum number of characters:

- Horizontal
3/16 in—13, 1/8 in—14, 3/32 in—19
- Vertical
3/16 in—10, 1/8 in—13, 3/32 in—14

Ordering Example:

Two-position legend plate to be marked “UP” “DOWN.”

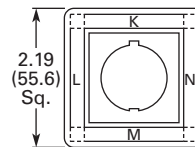
Catalog No. **10250TJ2S4STAMP**

Letter Size: 3/16 in (4.8 mm)

Pos. K—UP

Pos. M—DOWN

Two-Position



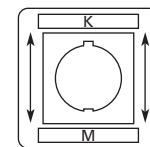
Catalog Number

Blank Plate

10250TJS3

Engraved Plate

10250TJS3STAMP

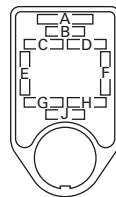


Catalog Number

Blank Plate
10250TJS4

Engraved Plate
10250TJS4STAMP

Four-Position



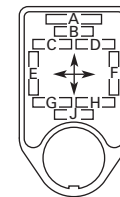
Catalog Number

Blank Plate

10250TJS1

Engraved Plate

10250TJS1STAMP



Catalog Number

Blank Plate
10250TJS2

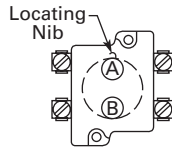
Engraved Plate
10250TJS2STAMP

Roto-Push Units

Two-Position Momentary

Complete assembled two-position Roto-Push® Units are listed below. These operators have black flush buttons and are arranged for vertical mounting. Order legend plates separately.

Mounting Location



Roto-Push—Black Flush Button



Roto-Push Units—UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Typical Applications (Most Common Examples)	Operator Position ①		Collar Right		Contact Type	Mounting Location		Catalog Number ②
	Collar Left		Normal	Depressed		A	B	
Two-Position FORWARD/REVERSE; HIGH/LOW; OPEN/CLOSE; UP/DOWN; etc.	Normal	Depressed	Normal	Depressed	1NO	⎓		10250T2411-2
	0	0	0	X	1NO		⎓	
JOG/RUN; MAN./AUTO; etc.	Normal	Depressed	Normal	Depressed	1NO	⎓		10250T24111-2
	0	X	0	X	1NO		⎓	
RUN/JOG; START/JOG; etc.	Normal	Depressed	Normal	Depressed	1NO	⎓		10250T24111-1
	X	X	0	0	1NC		⎓	
SAFE/RUN; etc.	Normal	Depressed	Normal	Depressed	1NO	⎓		10250T2415-2
	0	0	0	X	1NO		⎓	
			X	X				

Two-Position Latched

The two-position Roto-Push Latch Unit is fully assembled and only requires a legend plate for a great variety of applications. When the selector collar is in the extreme left position, the button is in the free or normal position and can be operated as a standard pushbutton. Rotating the collar to the

extreme right position automatically depresses and latches the button in the depressed position. The white filled groove in the button indicates the selector collar position. The selector collar has spring return to the left position except when in the extreme right latched position.

Red Long



Rotates to a Latch-Out Mode

Color and Type of Button	Contact Block	Vertical Mounting Catalog Number
Red long	1NC	10250T72
	2NC	10250T73

Notes

- ① X = closed circuit, 0 = open circuit.
- ② Roto-Push assembled with contact blocks.

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Roto-Push Operators

Roto-Push Components

A Roto-Push control unit combines the function of a pushbutton and a selector switch. The contacts are operated by the combined action of rotating the outer collar and pushing a button contained in the collar.

In selecting the cam and contact blocks for the listed function, the analysis involves considering the function with the collar rotated to the given position with the button free (designated as “N”) and then in that same position with the button depressed (designated “D”). This is done for each rotational position of the collar.

When Ordering Specify

- Catalog number of operator with cam code suffix from tables below and on following pages, Example: 10250T2411.
- Catalog number(s) for contact blocks and legend plates if required.
- To select the cam and contact blocks needed for two-position and three-position switches, use the tables on following pages.

Operator and Cam



Operator and Cam

Color and Type of Button	Cam Code No. Select from Tables	Vertical Mounting Catalog and Code Number	Horizontal Mounting Catalog and Code Number
Black flush	+ 1 to 18	10250T241_	10250T251_
Red flush ^①		10250T242_	10250T252_
Green flush		10250T243_	10250T253_
Black long		10250T261_	10250T271_
Red long ^①		10250T262_	10250T272_
Green long		10250T263_	10250T273_

Two-Position Roto-Push Operator—Rotates to a Latch-Out Mode Special Rotor Latch

This differs from the other Roto-Push operators in that as the collar is rotated to the right it depresses the button and releases the button when rotated left. But the button in the released position can be momentarily pushed independent of the collar or

its position. As the button is depressed by rotating the collar, the button also rotates and indicates its mode by a white line on the button face. This button can be used as an emergency stop or latched stop.

Special Roto Latch—Red Long Button











































Special Roto Latch—UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Color and Type of Button	Vertical Mounting Catalog Number
Red long	10250T3213
Black long	10250T3214

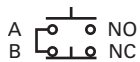
Note

^① Not to be used for emergency stop application.

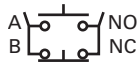
Cam and Contact Block Selection for Two-Position Roto-Push

Combination Number	Collar Position		Circuit Sequence ^①		Cam Code 1	Cam Code 2	Cam Code 3	Cam Code 4	Cam Code 5	Cam Code 6
	N	D	N	D						
1	0	0	0	X	A  NO	A  NO	—	—	A  NO	—
2	0	0	X	0	—	—	—	A  NO B  NO	A  NO B  NO	—
3	0	0	X	X	—	—	—	—	B  NO	A  NO
4	0	X	0	0	B  NO	A  NO B  NO	—	—	—	A  NO B  NO
5	0	X	0	X	A  NO B  NO	B  NO	—	A  NO	—	—
6	0	X	X	0	—	—	—	—	—	—
7	0	X	X	X	—	—	A or B NO	B  NO	—	B  NO
8	X	0	0	0	—	—	A or B NC	B  NC	—	B  NC
9	X	0	0	X	—	—	—	—	—	—
10	X	0	X	0	A  NO B  NO	B  NO	—	A  NO	—	—
11	X	0	X	X	B  NO	A  NO B  NO	—	—	—	A  NO B  NO
12	X	X	0	0	—	—	—	—	B  NO	A  NO
13	X	X	0	0	—	—	—	A  NO B  NO	A  NO B  NO	—
14	X	X	X	0	A  NO	A  NO	—	—	A  NO	—

Series and Parallel Connections



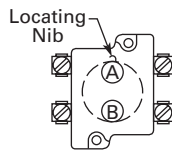
Series Connection



Parallel Connection

The connections are not made at the factory. They are illustrated in the selection table as requirements, but must be made on the job.

Circuit Location



Letters "A" and "B" represent the locations which the two circuits of a contact block will occupy in relation to the locating nib of the operator.

Note

① N = Button in free or normal position. D = Button depressed.

Cam and Contact Block Selection for Two-Position Roto-Push, continued

Combination Number	Collar Position		Circuit Sequence ①		Cam Code 10	Cam Code 11	Cam Code 12	Cam Code 13	Cam Code 14
	N	D	N	D					
15	0	0	0	X	—		—	—	—
16	0	0	X	0	—		A	A or B NC	A
17	0	0	X	X	B	B	—	—	—
18	0	X	0	0	A		—	—	B
19	0	X	0	X	—	A	B	—	—
20	0	X	X	0	—	—	—	—	A
21	0	X	X	X	A	A	A	—	—
22	X	0	0	0	A	A	A	—	—
23	X	0	0	X	—	—	—	—	A
24	X	0	X	0	—	A	B	—	—
25	X	0	X	X	A	A	—	—	B
26	X	X	0	0	B	B	—	—	—
27	X	X	0	0	—		A	A or B NO	A
28	X	X	X	0	—	A	—	—	—

Series and Parallel Connections



Series Connection



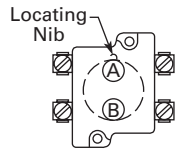
Parallel Connection

The connections are not made at the factory. They are illustrated in the selection table as requirements, but must be made on the job.

Note

① N = Button in free or normal position. D = Button depressed.

Circuit Location



Letters “A” and “B” represent the locations which the two circuits of a contact block will occupy in relation to the locating nib of the operator.

Cam and Contact Block Selection for Three-Position Roto-Push

Combination Number	Collar Position						Cam Code 7	Cam Code 8	Cam Code 9	Cam Code 15 ^②	Cam Code 16	Cam Code 17	Cam Code 18
	N	D	N	D	N	D							
1	0	0	0	0	0	X			—			—	
2	0	0	0	0	X	X	—	—		—	—		—
3	0	0	0	X	0	0	—	—		—	—	—	
4	0	0	0	X	0	X	—	—	—	—	—	—	
5	0	0	0	X	X	X	—	—		—	—	—	—
6	0	0	X	X	0	0	—		—	—	—	—	—
7	0	0	X	X	0	X	—		—	—	—	—	—
8	0	0	X	X	X	0		—	—	—	—	—	—
9	0	0	X	X	X	X		—	—	—	—	—	—
10	0	X	0	0	0	0			—				
11	0	X	0	0	0	X		—	—			—	—
12	0	X	0	0	X	X	—	—	—	—	—		—
13	0	X	0	X	0	0	—	—	—	—	—	—	
14	0	X	0	X	0	X	—	—	—	—	—	—	
15	0	X	X	X	0	0	—		—	—	—	—	—
16	0	X	X	X	0	X	—		—	—	—	—	—
17	0	X	X	X	X	X		—	—	—	—	—	—

Series and Parallel Connections



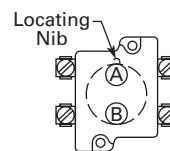
Series Connection



Parallel Connection

The connections are not made at the factory. They are illustrated in the selection table as requirements, but must be made on the job.

Circuit Location



Letters "A" and "B" represent the locations which the two circuits of a contact block will occupy in relation to the locating nib of the operator.

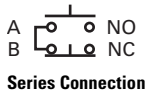
Notes

- ① N = Button in free or normal position. D = Button depressed.
- ② Limited to 4 contact blocks. See Note on **Page V7-T1-222**.

Cam and Contact Block Selection for Three-Position Roto-Push, continued

Combination Number	Circuit Sequence ^①						Cam Code 7	Cam Code 8 ^②	Cam Code 9	Cam Code 15	Cam Code 16	Cam Code 17	Cam Code 18
	N	D	N	D	N	D							
18	X	0	0	0	0	0	A NC B NC	—	—	—	—	—	—
19	X	0	0	0	X	X	—	A NC	—	—	—	—	—
20	X	0	0	0	X	0	—	A NC B NC	—	—	—	—	—
21	X	0	X	X	0	0	—	—	—	—	—	A NC B NC	—
22	X	0	X	X	X	X	A NC B NO	A NC B NO	—	—	A NC	B NC	A NC B NO
23	X	0	X	X	X	0	A NC	—	—	—	A NC B NC	—	—
24	X	0	X	0	X	0	—	—	—	A NC B NC	—	—	A NC B NC
25	X	0	X	0	X	X	—	—	—	A NC	—	—	A NC
26	X	X	0	0	0	0	B NC	—	A NC	—	—	—	—
27	X	X	0	0	0	X	A NO B NC	—	—	—	—	—	—
28	X	X	0	0	X	0	—	B NC	—	—	—	—	—
29	X	X	0	0	X	X	—	A NC B NO	A NC B NO	—	—	—	—
30	X	X	X	X	0	0	—	—	B NC	—	—	A NC	—
31	X	X	X	X	X	0	A NC B NC	A NO B NC	—	—	B NC	—	A NO B NC
32	X	X	X	0	X	0	—	—	—	B NC ^②	—	—	B NC
33	X	X	X	0	X	X	—	—	—	A NO B NC	—	—	A NC B NC

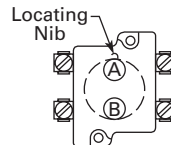
Series and Parallel Connections



Notes

- ① N = Button in free or normal position. D = Button depressed.
- ② Limited to 4 contact blocks. See Note on **Page V7-T1-222**.

Circuit Location










Letters “A” and “B” represent the locations which the two circuits of a contact block will occupy in relation to the locating nib of the operator.

Accessories

Padlocks not included with padlocking attachments. For operators with built-in padlock attachment, see **Page V7-T1-176**.

Accessories

	Description	Catalog Number
Padlock Attachments		
	10250TA2 Padlocking Attachment for Flush Pushbutton Operators Permits locking NC contacts in open position with 1/4 in padlock. Will not lock NO contact.	10250TA2
	10250TA26 Padlocking Attachment for Use with Extended Pushbutton Permits locking NC contacts in open position with 1/4 in padlock.	10250TA26
	10250TA36 Padlocking Cover Guard Cover locked over flush button makes it unaccessible or on extended button locks NC contacts open. Takes 1/4 in shank size padlock.	10250TA36
	10250TA38 Padlock Hasp or Flip-Up Guard When used with a 1/4 in padlock, makes flush and long button and knob selector switch unaccessible, but not locked down. Without the padlock, it is a flip-up guard. Padlock hasp can be removed before assembly.	10250TA38
	10250TA63 Padlocking Attachment for Use with Flexible Weather Resistant Boot Used on long button operators. Stainless steel. Use only for locking NC contacts open.	10250TA63
	10250TA64 Padlock Attachment For use with illuminated pushbuttons and maintained push-pull operators having standard button or lens only. Use 1/4 in padlock. Locks in down position only.	10250TA64
	10250TA11 Padlocking Attachment for Non-Illuminated Knob Selector Switches Provision for up to 5, 1/4 in padlocks.	10250TA11


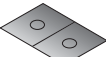








Accessories, continued

	Description	Catalog Number
Shrouds and Guards		
10250TA6 	Shroud for Mushroom Head Operator Prevents accidental operation. (Not for push-pull operators.)	10250TA6
10250TA12 	Extended Retaining Nut Replaces standard nut and provides guard for flush head pushbutton operators.	10250TA12
10250TA15 	Guard for Illuminated Pushbutton	10250TA15
10250TA56_ 	Shroud For jumbo mushroom head operator.	
	Gray	10250TA56
	Yellow	10250TA56Y
10250ED1241 	Half Shroud —Yellow For jumbo mushroom head operator.	10250ED1241
10250TA101 	Fingerproof Shroud —10 per package Fits new style contact blocks and light units.	10250TA101
Boots		
10250TA_ 	Flexible Weather Resistant Boot For use with button operators (extended buttons preferred). Temperature to –25°F (–32°C). (See Page V7-T1-215 for 10250TA96 Tightening Tool.)	
	Black	10250TA3
	Red	10250TA4 ①
	Green	10250TA10
10250TA25 	Transparent Boot For regular illuminated pushbutton operators and PresTest— Temperature to –38°F (–39°C). ②	10250TA25
10250TA4_ 	Boot for Flush Pushbutton	
	Clear	10250TA46
	Black	10250TA47
	Red	10250TA48
	Green	10250TA49

Notes

- ① Should not be used on flush button for STOP function.
- ② Not suitable for single contact block depth cast enclosure. Cover is too thick.

Accessories, continued

	Description	Catalog Number
Hardware and Kits		
10250TK3 	Thrust Washers — To meet Ford Motor Co. mounting specifications.	10250TK3
10250TK5 	Contact Block Tape Seal — Seals plunger openings on last contact block. Order in multiples of 10 pieces.	10250TK5
56-9337 	Selector Switch Operator Gasket — Seals out dust from getting in-between the cam and contact block plungers. Supplied as standard with all selector switches.	56-9337
10250TA3 	Special Retaining Nut — To accommodate thick panel: Indicating lights	10250TA30
	PresTest, pushbuttons and selector switches	10250TA31
10250TA62 	Terminal Block — Two terminals, each will accommodate two wire terminations.	10250TA62
10250TA8 	Spacer Ring — Used when legend plate is not required.	10250TA8
10250TA79 	Stacking Screw — Replaces transformer mounting screws on indicating light so terminal block 10250TA62 can be mounted to light to support and connect a series resistor. This screw also fits all contact blocks. Order in multiples of 10.	10250TA79
10250TA2 	Base Mounting Spacers ①— Equivalent to contact block in depth (one block deep).	10250TA22
	Complete with screws, washers, etc. (two block deep).	10250TA23
10250TKG 	Grounding Kits — Kits consist of a ring connector and a #6 screw for mounting connector to rear of contact block mounting screw. All components except standard indicating lights and PresTest indicating lights.	10250TKG1
	Standard indicating lights	10250TKG2 ②
	PresTest indicating lights	10250TKG3 ②
10250TA7 	Contact Block Terminal Jumpers — Available in multiples of 100 only. Terminal to terminal—within block (short)	
	100 per pkg.	10250TA70
	1000 per pkg.	10250TA70-2
	Terminal to terminal—block to block (long)	
	100 per pkg.	10250TA71
	1000 per pkg.	10250TA71-2

Notes

- ① Component only. Not to be used for custom built (factory assembled) stations.
- ② Not suitable for single contact block depth cast enclosure. Cover is too thick.









Accessories, continued

	Description	Catalog Number
Special Operators and Attachments		
10250TA5 	Wobble Stick Complete with retaining nut—fits standard button.	10250TA5
10250TA14 	Lever Operator For use with two vertically mounted flush pushbuttons.	10250TA14
10250TA 	Maintained Contact Attachment Release Button Assembly ^① Mechanically interlocks with another pushbutton and contact block (not included). Provides mode indication. Minimum hole centers 1.62 in (41.1 mm), maximum 2.313 in (58.8 mm).	
	Black	10250TA17
	Red	10250TA18
	Green	10250TA19
	Yellow	10250TA20
	Same with Long Button—Black	10250TA39
10250TA1 	Maintained Contact Attachment ^① Mechanically interlocks two buttons and provides position indication for one. Use with two pushbutton operators and one or more contact blocks.	10250TA1
10250TA13 	Roto-Push Lever Operator — Used to provide lever operation for Roto-Push operators.	10250TA13
Special Light Modules		
10250TA79 	Master Test (Dual Input) Module — Internal Form C relay suitable for either AC or DC applications. Total electrical isolation between monitored and test circuit. Fits all illuminated 10250T, E22, E30 and E34 devices.	
	48 Vdc	10250TMT8
10250TFL 	Flasher Module — Changes any AC illuminated device to a controlled flashing light. Fits 10250T, E30 and E34 devices.	
	24V	10250TFL2
	120V	10250TFL1
10250ED986-4 	Flashing Incandescent Lamp — For use with 120V transformer type or 6V full voltage type indicating lights including PresTest and most E29 devices.	10250ED986-4

Note

^① Not suitable for single contact block depth cast enclosure. Cover is too thick.

Accessories, continued

	Description	Catalog Number
Hole Plugs		
	10250TA7 Plug — For unused holes—steel, painted gray (stainless steel, use E30KT5 , see Page V7-T1-160)	10250TA7
Tools		
	10250TA95 Octagonal 10250T (notched to fit over selector switch lever), E29 and E30	10250TA95
	E22CW E22, E30, E34 and octagonal 10250T (will not fit over selector switch levers)	E22CW
	10250TA96 Tool for Tightening Boots — Used to install boot Catalog Numbers 10250TA3, A4, A10 and A25.	10250TA96
	10250TA102 10250T, E34 Allen Wrench — Used for removal of jumbo mushroom head.	10250TA102
	10250TA74 Lamp Removal Tools — For transformer type illuminated pushbuttons, push-pull and selector switches. Fits #12 lamp.	10250TA74
	E30KV1 For full voltage and resistor type illuminated pushbuttons, push-pull and selector switches and E30.	E30KV1
	E29KLT Standard indicating lights. Fits #44, #755, #6S6 and #10S6.	E29KLT

Options

Legend Plates

Legend Plates with Standard Markings

The legend plates listed below are sized for all standard commercial enclosures and Eaton’s cast enclosures. For vertical

spacing less than 1.75 in, replace the **S** in the catalog number with **MS**, or the **M** with **P** (except push-pull). No change in price. The smaller

size legend plates, “MS” or “P” size, have limited space for legend.

Square Legend Plate



1/2 Round Legend Plate



For Pushbutton Operators and Indicating Lights—Standard

Legend	Color of Field	Square ① Catalog Number	1/2 Round Catalog Number	Legend	Color of Field	Square ① Catalog Number	1/2 Round Catalog Number
Blank—see table on Page V7-T1-218.							
Letters on Legend Plates Below are 3/16 in High							
CLAMP	Black	10250TS90	10250TM90	OFF	Red	10250TS24	10250TM24
CLOSE		10250TS73	10250TM11	ON	Black	10250TS25	10250TM25
DOWN		10250TS74	10250TM12	OPEN		10250TS26	10250TM26
EMERG. STOP	Red	10250TS13	10250TM13	OUT		10250TS27	10250TM27
FAST	Black	10250TS75	10250TM14	POWER ON		10250TS80	10250TM80
FASTER		10250TS87	10250TM87	RAISE		10250TS28	10250TM28
FEEDER ON		10250TS94	10250TM94	READY		10250TS86	10250TM86
FEEDER OFF		10250TS95	10250TM95	RESET		10250TS29	10250TM29
FORWARD		10250TS15	10250TM15	REVERSE		10250TS30	10250TM30
HIGH		10250TS16	10250TM16	RUN		10250TS31	10250TM31
IN		10250TS17	10250TM17	SAFE		10250TS85	10250TM85
INCH		10250TS18	10250TM18	SLOW		10250TS32	10250TM32
JOG		10250TS19	10250TM19	SLOWER		10250TS88	10250TM88
JOG FOR.		10250TS20	10250TM20	START		10250TS33	10250TM33
JOG REV.		10250TS21	10250TM21	STOP	Red	10250TS34	10250TM34
LOW		10250TS22	10250TM22	TEST	Black	10250TS83	10250TM83
LOWER		10250TS23	10250TM23	TRANSFER		10250TS93	10250TM93
LUBE-FAIL		10250TS92	10250TM92	TRIP		10250TS84	10250TM84
MOTOR RUN		10250TS81	10250TM81	UNCLAMP		10250TS91	10250TM91
MOTOR STOP		10250TS82	10250TM82	UP		10250TS35	10250TM35

Blank Plastic Legend Plates—Square

Color Lettering	Field	Standard Catalog Number	Jumbo ② Catalog Number	Extra Large Catalog Number
Black	White or silver ③	10250TSP76	10250TLP76	10250TEP76
White	Red or black ③	10250TSP77	10250TLP77	10250TEP77

Notes

- ① Square legend plates have a satin aluminum field. Color is on lower portion.
- ② Cannot be used on cast enclosures except for top row. Suitable for most sheet metal enclosures.
- ③ If legend plate is to be engraved, specify field color required.

Square Legend Plate



1/2 Round Legend Plate



For Selector Switch and Roto-Push Operators—Standard Size

Legend	Color of Field	Square ^① Catalog Number	1/2 Round Catalog Number	Legend	Color of Field	Square ^① Catalog Number	1/2 Round Catalog Number
Blank—see table on Page V7-T1-218.							
2-Position—5/32 in High Lettering				3-Position—1/8 in High Lettering			
FOR. REV.	Black	10250TS38	10250TM38	AUTO OFF HAND	Black	10250TS49	10250TM49
HAND AUTO		10250TS39	10250TM39	FOR. OFF REV.		10250TS50	10250TM50
HIGH LOW		10250TS40	10250TM40	FOR. SAFE REV.		10250TS69	10250TM69
JOG RUN		10250TS41	10250TM41	HAND OFF AUTO		10250TS51	10250TM51
MAN. AUTO		10250TS67	10250TM67	MAN. OFF AUTO		10250TS68	10250TM68
OFF ON		10250TS42	10250TM42	OPEN OFF CLOSE		10250TS53	10250TM53
OPEN CLOSE		10250TS43	10250TM43	RUN SAFE JOG		10250TS70	10250TM70
RUN JOG		10250TS44	10250TM44	UP OFF DOWN		10250TS54	10250TM54
SAFE RUN		10250TS45	10250TM45	ON STOP SAFE	Red	10250TS71	10250TM71
START JOG		10250TS46	10250TM46				
START STOP		10250TS47	10250TM47				
UP DOWN		10250TS48	10250TM48				

70 mm Round—Plastic Legend Plate



45 mm and 70 mm Plastic—Round

Color	Lettering	Field	Catalog Number
45 mm			
Blank		Yellow or red ^②	10250TRP78
70 mm			
Blank		Yellow or red ^②	10250TRP76
Red EMERG. STOP		Yellow	10250TRP79

For Push-Pull Units ^③

Legend	Color of Field	Square ^① Catalog Number	1/2 Round Catalog Number
Standard Size—Letters on Legend Plates Below are 3/32 in High			
PULL START/PUSH STOP	Green/red	10250TPP2	10250TR2
PUSH ON/PULL OFF	Black	10250TPP5	10250TR5
PULL OPEN/PUSH CLOSE	Black	10250TPP8	10250TR8
PULL UP/PUSH DOWN	Black	10250TPP11	10250TR11
Jumbo Size—Letters on Legend Plates Below are 1/8 in High			
PULL START/PUSH STOP	Green/red	10250TPP3	10250TR3
PULL ON/PUSH OFF	Black	10250TPP6	10250TR6
PULL OPEN/PUSH CLOSE	Black	10250TPP9	10250TR9
PULL UP/PUSH DOWN	Black	10250TPP12	10250TR12

Notes

- ① Square legend plates have a satin aluminum field. Color is on lower portion.
- ② If legend plate is to be engraved, specify field color required.
- ③ All push-pull legend plates include the symbols ≠ ∅ in the center of the plate.

1

Legend Plates with Non-Standard Markings

When Ordering Specify

- Catalog number of blank plate phase plus Suffix “STAMP”
- Insert the following into Order Notes: legend, letter size and locations (letters A–W)—combine letters for definitive locations as shown.

Ordering Example:

Catalog No.: **10250TS36STAMP**
 Letter Size: 3/32 in (2.4 mm)
 Pos. A—POWER HOUSE
 Pos. B—START PUMP 1

Legend Characters Available

A B C D E F G H I J K L M N O
 P Q R S T U V W X Y Z / - . , 1
 2 3 4 5 6 7 8 9 0

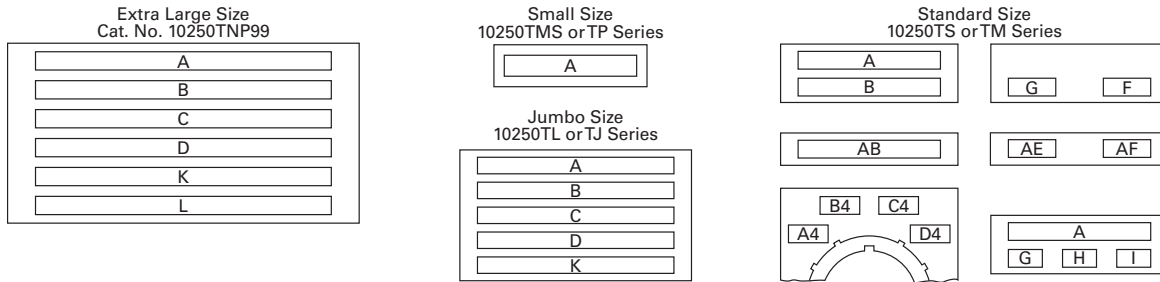
Legend characters on black and red plates are white—on satin aluminum plates, characters are black.

Blackening Kit

Solution blackens aluminum exposed by engraving process. Must be applied immediately after engraving. 0.3 oz. bottle—sufficient for approximately 1100 legend plates.

Catalog Number: **10250TBK**

Legend Positions



Blank and Custom Engraved Legend Plates

Style	Color	Small Catalog Number	Standard Catalog Number	Jumbo ^② Catalog Number	Extra Large ^③ Catalog Number	Four-Position Selector Switch		Push-Pull with Symbols ^①	
						Custom ^④ Catalog Number	Standard Catalog Number	Standard Catalog Number	Jumbo ^② Catalog Number
Square ^⑤	Black	10250TMS36	10250TS36	10250TL36	—	10250TS76	10250TS72	10250PPP17	10250PPP18
	Red	10250TMS37	10250TS37	10250TL37	—	—	—	—	—
	Green/red	—	—	—	—	—	—	10250PPP20	10250PPP21
	Satin alum.	—	—	—	10250TNP99	—	—	—	—
1/2 Round	Black	10250TP36	10250TM36	10250TJ36	—	—	10250TM72	10250TR17	10250TR18
	Red	10250TP37	10250TM37	10250TJ37	—	—	—	—	—
	Green/red	—	—	—	—	—	—	10250TR20	10250TR21
	Satin alum.	—	10250TM89	10250TJ89	—	—	—	—	—

Maximum Characters per Legend Plate and Approximate Dimensions

Top (Aluminum and Plastic)	Approximate Dimensions in Inches (mm)		Style	Character Size 3/32 in High		1/8 in High		3/16 in High	
	Width	Height		Number of Lines	Number of Characters	Number of Lines	Number of Characters	Number of Lines	Number of Characters
Small ^⑥	1.59 (40.4)	1.59 (40.4)	Square	1	17	—	—	—	—
			1/2 Round	1	15	1	12	1	9
Standard and custom	1.75 (44.5)	1.75 (44.5)	Square	2	18	2	13	1	9
			1/2 Round	2	15	2	12	1	9
Jumbo ^⑦	2.19 (55.6)	2.19 (55.6)	Square	5	23	3	18	2	12
			1/2 Round	5	19	4	15	2	11
Extra large ^⑧	2.44 (62)	2.44 (62)	Square	6	25	3	18	3	12




Notes

- ^① All push-pull legend plates include the symbols ≠ ∅ in the center of the plate.
- ^② Cannot be used on cast enclosures except for top row. Suitable for most sheet metal enclosures.
- ^③ When used to meet Ford Motor Co. specifications, specify engraved legend. Cannot be used on standard cast or sheet metal enclosures.
- ^④ Slightly larger than standard size for legends requiring more space—fits cast enclosures.
- ^⑤ Square legend plates have a satin aluminum field. Color is on lower portion.
- ^⑥ Recommended only when mounting on minimum centers (less than 1-3/4 in [44.5 mm] vertical centers).
- ^⑦ Can be used on top row only of any enclosure.

Enclosures

Die Cast, Polyester and Stainless Steel Enclosures

Enclosures (Case and Cover)—Surface Mounting ^①

	Number of Elements	One Contact Block Depth Catalog Number	Two Contact Block Depth Catalog Number
Die Cast Enclosure	Die Cast Enclosure—In-Line ^{②③④} NEMA 4, 4X, 12, 13		
	1	10250TN1	10250TN11
	2	10250TN2	10250TN12
	3	10250TN3	10250TN13
	4	—	10250TN14
Polyester Enclosure	Polyester^⑤—In-Line NEMA 3, 4X, 12		
	1	—	E34N51
	2	—	E34N52
	3	—	E34N53
	4	—	E34N54
Stainless Steel Enclosure	Stainless Steel ^{④⑥}—In-Line NEMA 4, 4X, 12		
	1	—	10250TN33
	2	—	10250TN34
	3	—	10250TN35
	4	—	10250TN36

Dimensions, see Page V7-T1-232.

Mounting Instructions

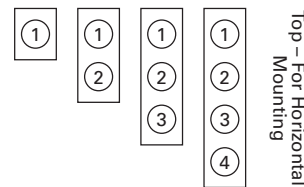
Two-position joystick must be used with two contact block deep enclosures (maximum number of contact blocks = 1). Four-position joysticks cannot be used within these enclosures.

One and Two Contact Block Depth Enclosures



Enclosure Layouts

Top – For Vertical Mounting



Notes

- ① For spacing increments, see Page V7-T1-220.
- ② All die cast enclosures can be converted to base mounting of contact blocks, with spacers 10250TA22 or 10250TA23. See listing on Page V7-T1-213.
- ③ When used with E30 pushbuttons, only the one element enclosure can be used.
- ④ When used with resistor light units, only the 2 contact block depth enclosure can be used.
- ⑤ 14 gauge, type 304.

Die Cast and Stainless Steel—Flush Mount, Covers Only

Flush Mounting Covers



Covers Only—Flush Mounting

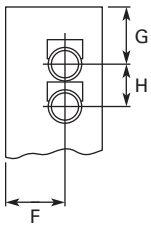
Number of Elements	Catalog Number	Catalog Number
Flush Die Cast Covers		
	In-Line Deep Cover	In-Line Flat Cover
1	10250TF11	10250TF1
2	10250TF12	10250TF2
3	10250TF13	10250TF3
4	10250TF14	10250TF4
In-Line Stainless Steel Flush Plates ①		
	With Pullbox	Without Pullbox
1	10250TS10	10250TS1
2	10250TS11	10250TS2
3	10250TS12	10250TS3
4	10250TS14	10250TS4
Dimensions, see Page V7-T1-233.		

Spacing Increments

Approximate Dimensions in Inches (mm)

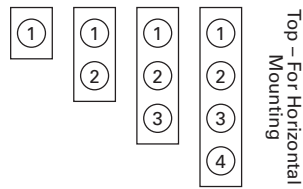
Type	F	G	H
Die cast	2.44 (62)	2.5 (63.5)	1.88 (47.8)
Polyester	1.88 (47.8)	Min. 2.13 (54.1)	2.25 (57.2)
Stainless steel	1.69 (42.9)	Min. 1.73 (43.9)	2.25 (57.2)

Spacing Increments for Enclosures



Enclosure Layouts

Top – For Vertical Mounting



Note

① Not oiltight. NEMA 1 applications only.

Contact Blocks

Standard Contact Blocks

- UL A600/P600 rated
- Color-coded plungers—red/green for NC/NO circuits
- Silver contact tips with “reliability nibs”
- Gray (opaque) or amber (translucent) housings
- Pressure plate or spade terminals
- Fingerproof shrouds (for pressure terminals only)

Logic Level Contact Blocks

- UL A600/P600 rated
- Color-coded plungers
- Inert palladium knife-blade contacts
- Gray (opaque) housings
- Pressure plate or spade terminals

Special Function Contact Blocks

- UL A600/P600 rated
- Color-coded plungers
- Silver contact tips with “reliability nibs”
- Gray (opaque) housings
- Pressure plate terminals only

Special Purpose Contact Block

- Maximum 300V rated
- Black plungers
- Silver contact tips with “reliability nibs”
- Black (opaque) housings
- Pressure plate terminals only
- Fingerproof shrouds not available

Reliability Nibs

Reliability nibs are the hallmark of Eaton’s contact blocks. A pointed silver nib on the contact tip ensures reliable switching from logic level (5V) up to 600V applications. Therefore standard contact blocks can be used for most logic level applications where the contacts are not exposed to any harsh environmental conditions.

Palladium Contacts

Palladium, which is more inert than gold, is well suited for voltages and currents approaching zero and is recommended for applications where environmental conditions are a factor.

Maximum Contact Block Mounting per Operator Type

Operator	Max. Stack
Pushbuttons	6
Push-pull operators	2
Roto-push operators	4
Two- or three-position selector switches	6
Four-position selector switches	4
Joysticks	4

10250T1



Contact Blocks

Symbol	Circuit	Description ^①	Standard	Spade Terminal ^②	Logic Level	Spade Terminal ^②
			Pressure Terminal Catalog Number	Catalog Number	Pressure Terminal Catalog Number	Catalog Number
	1NC	Stack up to six blocks (six circuits) unless otherwise noted.	10250T51	10250T59	10250T51E	10250T59E
	1NO	Stack up to six blocks (six circuits) unless otherwise noted.	10250T53	10250T60	10250T53E	10250T60E
	NO-NC	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T1	10250T40	10250T1E	10250T40E
	2NC	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T3	10250T42	10250T3E	10250T42E
	2NO	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T2	10250T41	10250T2E	10250T41E
Special Function Blocks ^③						
	LONC	Late opening NC. Stack up to six blocks (six circuits) unless otherwise noted.	10250T71 ^③	—	10250T71E ^③	—
	ECNO-NC	Early closing NO and standard NC. Stack up to six blocks unless otherwise noted.	10250T47 ^{③④}	—	10250T47E ^③	—
	ECNO-NO	Early closing NO and standard NO. Stack up to four blocks unless otherwise noted.	10250T57 ^{③④}	—	10250T57E ^③	—
	2LONC	Two late opening NC contacts. Stack up to six blocks unless otherwise noted.	10250T45 ^③	—	10250T45E ^③	—
	LONC-ECNO	Overlapping contacts. Stack up to four blocks unless otherwise noted.	10250T55 ^{③④}	—	10250T55E ^③	—
Special Purpose Blocks ^⑤						
	2NO-2NC	Four circuits in single block depth. Rated 300V max. Stack up to four blocks unless otherwise noted.	10250T44 ^⑤	—		

Notes

- ① All 10250T contact blocks shown are suitable for use on standard 10250T and E34 operators. These contact blocks are not suitable for Class I Division 2 type 10250T or E34 devices.
- ② Contact blocks with spade terminals are limited to a maximum of one contact block per operator and minimum spacing between devices is 2.5 in (63.5 mm). Not suitable for use in 10250T or E34 enclosures. Also available in amber housing. Not available with fingerproof shrouds.
- ③ Special function contact blocks are not suitable for use with roto-push operators, three-position push-pull operators, or four-position selector switches.
- ④ ECNO contact blocks are not suitable for use with two-position joysticks or when operators are used with padlock attachments.
- ⑤ Special purpose 10250T44 contact blocks are not suitable on selector switches or roto-push operators. Okay to use with three-position push-pull operators only on low voltage (30V or less) circuits. Fingerproof shrouds not available.

10250T1CP



Contact Blocks with Fingerproof Shrouds

Symbol	Circuit	Description ^①	Standard Pressure Terminal ^② Catalog Number	Logic Level Pressure Terminal ^② Catalog Number
Blank No Plunger	1NC	Stack up to six blocks (six circuits) unless otherwise noted.	10250T51P	10250T51EP
Blank No Plunger	1NO	Stack up to six blocks (six circuits) unless otherwise noted.	10250T53P	10250T53EP
Blank No Plunger	NO-NC	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T1P	10250T1EP
Blank No Plunger	2NC	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T3P	10250T3EP
Blank No Plunger	2NO	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T2P	10250T2EP
Special Function Blocks ^③				
Blank No Plunger	LONC	Late opening NC. Stack up to six blocks (six circuits) unless otherwise noted.	10250T71P ^④	10250T71EP ^④
Blank No Plunger	ECNO-NC	Early closing NO and standard NC. Stack up to six blocks unless otherwise noted.	10250T47P ^{③④}	10250T47EP ^④
Blank No Plunger	ECNO-NO	Early closing NO and standard NO. Stack up to four blocks unless otherwise noted.	10250T57P ^{③④}	10250T57EP ^④
Blank No Plunger	2LONC	Two late opening NC contacts. Stack up to six blocks unless otherwise noted.	10250T45P ^④	10250T45EP ^④
Blank No Plunger	LONC-ECNO	Overlapping contacts. Stack up to four blocks unless otherwise noted.	10250T55P ^{③④}	10250T55EP ^④

Notes

- ① All 10250T contact blocks shown are suitable for use on standard 10250T and E34 operators. These contact blocks are not suitable for Class I Division 2 type 10250T or E34 devices.
- ② To order contact blocks with translucent amber housing, change suffix P to **CP** in catalog number e.g. 10250T51**CP**.
- ③ ECNO contact blocks are not suitable for use with two-position joysticks or when operators are used with padlock attachments.
- ④ Special function contact blocks are not suitable for use with roto-push operators, three-position push-pull operators, or four-position selector switches.

10250T1C



Amber Contact Blocks

Symbol	Circuit	Description ^①	Standard	Logic Level		
			Pressure Terminal ^② Catalog Number	Spade Terminal ^③ Catalog Number	Pressure Terminal ^② Catalog Number	Spade Terminal ^③ Catalog Number
	Blank No Plunger 1NC	Stack up to six blocks (six circuits) unless otherwise noted.	10250T51C	10250T59C	10250T51EC	10250T59EC
	Blank No Plunger 1NO	Stack up to six blocks (six circuits) unless otherwise noted.	10250T53C	10250T60C	10250T53EC	10250T60EC
	NO-NC	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T1C	10250T40C	10250T1EC	10250T40EC
	2NC	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T3C	10250T42C	10250T3EC	10250T42EC
	2NO	Stack up to six blocks (12 circuits) unless otherwise noted.	10250T2C	10250T41C	10250T2EC	10250T41EC
Special Function Blocks ^③						
	Blank No Plunger LONC	Late opening NC. Stack up to six blocks (six circuits) unless otherwise noted.	10250T71C ^④	—	10250T71EC ^④	—
	ECNO-NC	Early closing NO and standard NC. Stack up to six blocks unless otherwise noted.	10250T47C ^{④⑤}	—	10250T47EC ^④	—
	ECNO-NO	Early closing NO and standard NO. Stack up to four blocks unless otherwise noted.	10250T57C ^{④⑤}	—	10250T57EC ^④	—
	2LONC	Two late opening NC contacts. Stack up to six blocks unless otherwise noted.	10250T45C ^④	—	10250T45EC ^④	—
	LONC-ECNO	Overlapping contacts. Stack up to four blocks unless otherwise noted.	10250T55C ^{④⑤}	—	10250T55EC ^④	—

Notes

- ^① All 10250T contact blocks shown are suitable for use on standard 10250T and E34 operators. These contact blocks are not suitable for Class I Division 2 type 10250T or E34 devices.
- ^② To order amber contact blocks with fingerproof shrouds, change suffix to **CP** in the catalog number e.g. 10250T51**CP**. Not available with spade terminals.
- ^③ Contact blocks with spade terminals are limited to a maximum of one contact block per operator and minimum spacing between devices is 2.5 in (63.5 mm). Not suitable for use in 10250T or E34 enclosures. Also available in amber housing. Not available with fingerproof shrouds.
- ^④ Special function contact blocks are not suitable for use with roto-push operators, three-position push-pull operators, or four-position selector switches.
- ^⑤ ECNO contact blocks are not suitable for use with two-position joysticks or when operators are used with padlock attachments.

Replacement Parts

Replacement Lamps—For 10250T Illuminated Operators

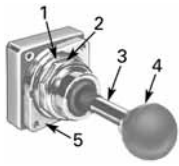
Mfg. Lamp Type	Voltage	Base Style	Application	Part Number
120MB	120V	T 3-1/4 bayonet	10250T resistor indicating light	28-3044
#267	6.3V	T 3-1/4 bayonet	10250T flasher	10250ED986-4
#755	6.3V	T 3-1/4 bayonet	10250T transformer, PresTest and full voltage	28-2202
#756	12V	T 3-1/4 bayonet	10250T full voltage	28-5184
#757	24V	T 3-1/4 bayonet	10250T full voltage	28-5185
#1828	32V	T 3-1/4 bayonet	10250T full voltage	28-5186
#1835	55V	T 3-1/4 bayonet	10250T resistor	28-5187
NE48	120V	T 4-1/2 bayonet	10250T neon	28-494
NE51H-R22	120V	T 3-1/4 bayonet	10250T neon	28-3754
NE51H-R68	240V	T 3-1/4 bayonet	10250T neon	28-3755

Standard LED Lamp



Replacement LED Lamps—For 10250T, E34 and E22 Units

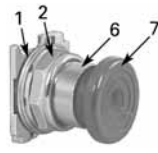
Voltage	Color	Continuous AC/DC Catalog Number	Flashing AC Catalog Number	DC Catalog Number
6–12V	Red	E22LED612RN	E22LED006RAF	E22LED006RDF
	Orange	E22LED612ON	E22LED006OAF	E22LED006ODF
	Yellow	E22LED612YN	E22LED006YAF	E22LED006YDF
	Green	E22LED612GN	E22LED006GAF	E22LED006GDF
	Blue	E22LED612BN	E22LED006BAF	E22LED006BDF
	White	E22LED612WN	E22LED006WAF	E22LED006WDF
24V	Red	E22LED024RN	E22LED024RAF	E22LED024RDF
	Orange	E22LED024ON	E22LED024OAF	E22LED024ODF
	Yellow	E22LED024YN	E22LED024YAF	E22LED024YDF
	Green	E22LED024GN	E22LED024GAF	E22LED024GDF
	Blue	E22LED024BN	E22LED024BAF	E22LED024BDF
	White	E22LED024WN	E22LED024WAF	E22LED024WDF
48V	Red	E22LED048RN	E22LED048RAF	E22LED048RDF
	Orange	E22LED048ON	E22LED048OAF	E22LED048ODF
	Yellow	E22LED048YN	E22LED048YAF	E22LED048YDF
	Green	E22LED048GN	E22LED048GAF	E22LED048GDF
	Blue	E22LED048BN	E22LED048BAF	E22LED048BDF
	White	E22LED048WN	E22LED048WAF	E22LED048WDF
60V	Red	E22LED060RN	E22LED060RAF	E22LED060RDF
	Orange	E22LED060ON	E22LED060OAF	E22LED060ODF
	Yellow	E22LED060YN	E22LED060YAF	E22LED060YDF
	Green	E22LED060GN	E22LED060GAF	E22LED060GDF
	Blue	E22LED060BN	E22LED060BAF	E22LED060BDF
	White	E22LED060WN	E22LED060WAF	E22LED060WDF
120V	Red	E22LED120RN	E22LED120RAF	E22LED120RDF
	Orange	E22LED120ON	E22LED120OAF	E22LED120ODF
	Yellow	E22LED120YN	E22LED120YAF	E22LED120YDF
	Green	E22LED120GN	E22LED120GAF	E22LED120GDF
	Blue	E22LED120BN	E22LED120BAF	E22LED120BDF
	White	E22LED120WN	E22LED120WAF	E22LED120WDF



Two-Position Joystick Operator



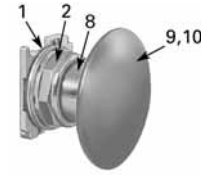
Flush Head Pushbutton Operator



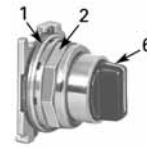
Mushroom Head Pushbutton Operator



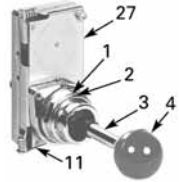
Mushroom Head Operator with Padlock Attachment



Jumbo Mushroom Head Operator



Knob-Operated Selector Switch Operator



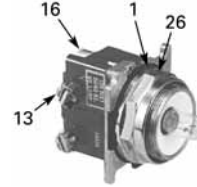
Four-Position Joystick Operator (without Latch)



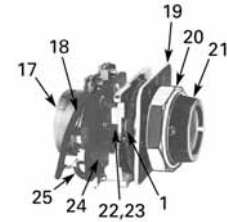
Illuminated Pushbutton Operator



Full Voltage, Resistor and Transformer Type Illuminated Selector Switch



Transformer Type Indicating Light



Potentiometers

10250T Style Operator Replacement Parts

Item No.	Description	No. Req.	Part Number
1	Gasket	1	16-1548
2	Mounting nut	1	15-1530
3	Handle	1	24-5045
4	Knob	1	53-3157
	Knob (not shown) for joystick operator with latch	1	53-3159
5	Common gate (supplied with operator)	2	16-3400
6	Set screw (#6-32 x 0.250 in long hollow hex)	2	11-2014
7	Mushroom head button (includes [2] Item 6)	1	As Req. Below
	Black	—	53-1317
	Red	—	53-1317-2
	Yellow	—	53-1317-3
	Green	—	53-1317-4
	Blue	—	53-1317-22
8	Set screw (#10-32 x 0.250 in long hollow hex)	2	11-544
9	Jumbo mushroom head button (aluminum—includes [2] Item 8)	1	As Req. Below
	Red	—	53-1317-9
	Black	—	53-1317-10
	Yellow	—	53-1317-11
	Green	—	53-1317-12
10	Jumbo mushroom head button (aluminum—red EMERG. STOP) does not include Item 8	1	53-1349-18
11	Position gate:		
	Two-position	1	54-7278
	Three-position	1	54-7173
	Four-position	1	54-12278
	Eight-position	1	54-12279
12	Mounting screw (#6-32 x 0.710 in long)	2	10250TA79
	Washer	2	16-2038
13	Terminal screw and lug (captives)	Req.	80-5502KIT

Item No.	Description	No. Req.	Part Number
14	Gasket (supplied with basic unit)	1	32-803
15	Round head screw (#4-40 x 0.344 in long) (supplied with basic unit)	2	11-4553
16	Mounting screw	2	11-1632
17	Simple potentiometer (does not include items 18, 28 or 29)	1	As Req. Below
	1,000 ohms	—	41-782-2
	2,500 ohms	—	41-782-3
	5,000 ohms	—	41-782-10
	10,000 ohms	—	41-782-4
	25,000 ohms	—	41-782-5
	50,000 ohms	—	41-782-6
18	Connector (includes screw and lug)	2	25-1851
19	Indicating plate	1	As Req. Above
	Standard size (without legend)	—	30-4460
	Large size (specify legend)	—	10250TR30
20	Retaining nut	1	15-1547
21	Knob	1	53-1314
	Socket set screw (#6-32 x 0.250 in long)	2	11-2014
22	Coupling	1	29-3749-2
23	Set screw (#6-32 x 0.188 in long)	1	11-1199
24	Spacer	2	56-1066-18
25	Connector (includes screw and lug)	1	25-1851-2
26	Mounting nut	1	15-1938
27	Four-position joystick operating mechanism (complete)	1	24-6565
28	Four-position joystick operating mechanism (not shown) (with latch) complete	1	24-6565-2
29	Spring loaded latch	1	52-1214-2
30	Hand operated latch	1	52-913-3

Technical Data and Specifications


Mechanical Ratings

Description	Specification
Frequency of Operation	
All pushbuttons	6000 operations/hr.
Key and lever selection switches	3000 operations/hr.
Auto-latch devices	1200 operations/hr.
Life	
Pushbuttons	10 x 10 ⁶ operations
Contact blocks	10 x 10 ⁶ operations
PresTest units	10 x 10 ⁶ operations
Lever and key selector switches	0.25 x 10 ⁶ operations
Twist to release pushbuttons	0.3 x 10 ⁶ operations
Shock Resistance	
Duration	20 ms ≥5g

General Specifications

Description	Specification
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 at 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 ²) to 2 x 14 AWG (2.5 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 at rated voltage
LED	60,000 to 100,000 hrs.

Electrical Ratings

Description	Specification
Insulation	$U_i = 660 \text{ Vac or Vdc}$
Thermal	$I_{th} = 10\text{A}$
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, 660 Vac, 460 Vdc, BS88-2, IEC 60269-2-1
	
UL rating	A600, P600
AC load life duty cycle 1200 operations/hour	
10A	110V pf 0.4— 1×10^6 operations
5A	250V pf 0.4— 1×10^6 operations
2A	600V pf 0.4— 1×10^6 operations
Switching capacity	
AC 15 rated make/break ($11 \times I_a$ at $1.1 \times U_a$)	
6A	120V pf 0.3
4A	240V pf 0.3
2A	660V pf 0.3
DC13 rated make/break ($1.1 \times I_a$ at $1.1 \times U_a$)	
1.0A	125V L/R ≥ 0.95 at 300 ms
0.55A	250V L/R ≥ 0.95 at 300 ms
0.1A	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	120 Vac/Vdc

Electrical Ratings—Contact Block

Description	50 Vac or 60 Hz				Vdc		
	120	240	480	600	24/28	125	250
Meet or Exceed NEMA Rating Designations A600, A300 and B300 for AC and P600 for DC							
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

Mounting Options

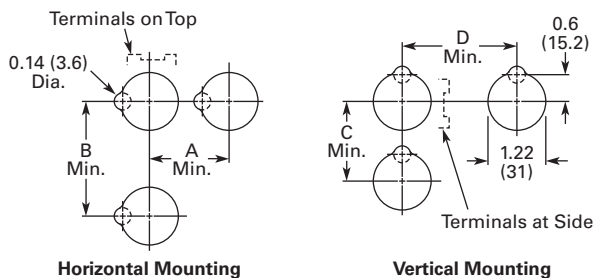
Panel Thickness

- Minimum: 0.06 in (1.6 mm)
- Maximum: 0.25 in (8 mm) including legend plate
- Maximum can be increased to 0.375 in (15.9 mm) using optional retaining nut
 - Indicating light: 10250TA30
 - Pushbutton/selector switch: 10250TA31

Mounting Matrix

Legend Plate	Dimensions in Inches (mm)			
	A	B	C	D
Small	1.63 (41.3)	2.25 (57.2)	2.25 (57.2)	1.63 (41.3)
Medium	1.75 (44.5)	2.25 (57.2)	2.25 (57.2)	1.75 (44.5)
Large	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)	2.25 (57.2)

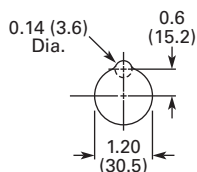
Mounting Options in Inches (mm)



Horizontal mounting means terminals are located top and bottom of contact block. Vertical mounting means terminals are left and right of contact block. This allows close spacing of adjacent operators with easy access to terminals.

Locating nib hole or notch is 0.14 in (3.6 mm) #29 drill.

Drilling Dimensions in Inches (mm)

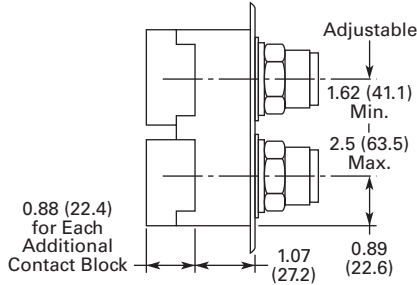


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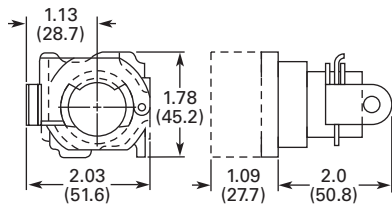
Dimensions

Approximate Dimensions in Inches (mm)

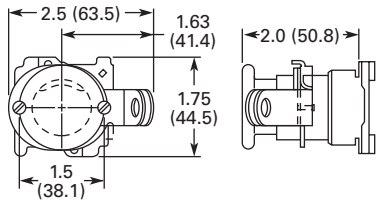
Mechanically Interlocked Pushbutton Operators



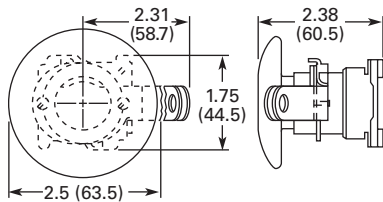
Lockout Pushbutton Operator Padlockable in the Down Position



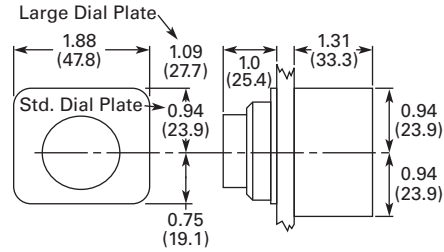
Lockout Pushbutton Operator Padlockable in the Up Position—Mushroom Head



Lockout Pushbutton Operator Padlockable in the Up Position—Jumbo Mushroom Head

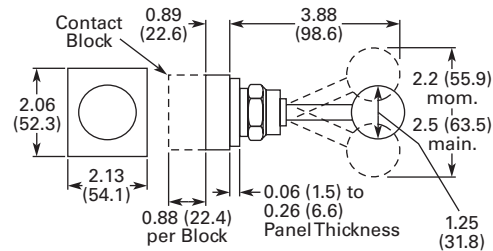


Potentiometer

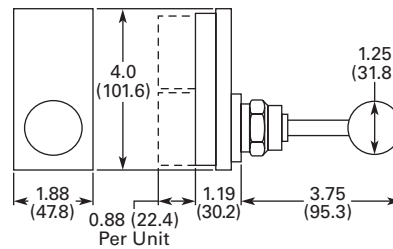


Potentiometer	A	B	C
2 watt single	1.31 (33.3)	0.94 (23.9)	0.94 (23.9)
25 watt—up to 25 mohms	2.38 (60.5)	1.19 (30.2)	0.81 (20.6)
50 mohms	2.56 (65)	1.69 (42.9)	1.25 (31.8)

Two-Position Joystick Operator

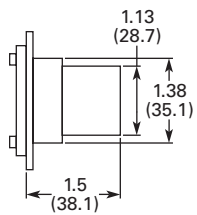


Four-Position Joystick Operator

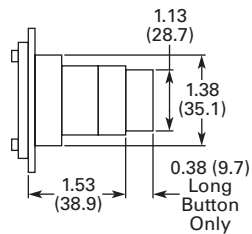


Approximate Dimensions in Inches (mm)

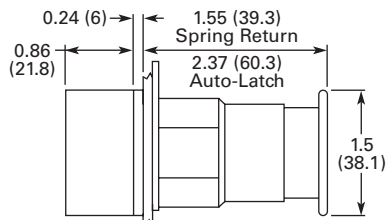
Key Operated Pushbutton Operator



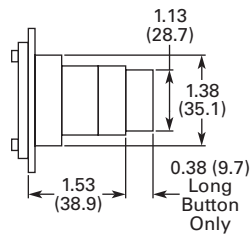
Operator and Cam



Latch-In, Twist-to-Release Operator Only with Button



Special Rotor Latch



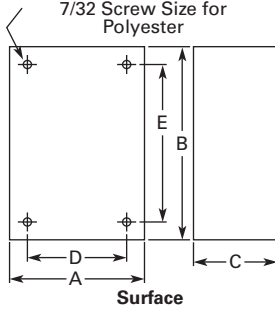
1

Approximate Dimensions in Inches (mm)

Surface Mounting

Die Cast, Polyester and Stainless Steel Enclosures

4 Mtg. Holes — 10-32 Screw Size for
1 – 4 Element Die Cast/
Stainless Steel Enclosure
7/32 Screw Size for
Polyester



Number of Elements	Element Arrangement	Wide A	High B	Deep C	Mounting D	E	Conduit Entrance
Die Cast							
1	In-line	3.88 (98.6)	4.0 (101.6)	3.0 (76.3) ^①	2.69 (68.3)	3.25 (82.6)	3/4
2		3.88 (98.6)	5.88 (149.4)	3.0 (76.3) ^①	2.69 (68.3)	5.13 (130.3)	
3		3.88 (98.6)	7.75 (196.9)	3.0 (76.3) ^①	2.69 (68.3)	7.0 (177.8)	1
4		3.88 (98.6)	9.63 (244.6)	3.0 (76.3) ^①	2.69 (68.3)	8.88 (225.6)	
Polyester							
1	In-line	3.81 (96.8)	6.63 (168.4)	3.38 (85.9)	2.94 (74.7)	4.88 (124.0)	②
2		3.81 (96.8)	6.63 (168.4)	3.38 (85.9)	2.94 (74.7)	4.88 (124.0)	
3		3.81 (96.8)	8.88 (225.6)	3.38 (85.9)	2.94 (74.7)	7.13 (181.1)	
4		3.81 (96.8)	11.13 (282.7)	3.38 (85.9)	2.94 (74.7)	9.38 (238.3)	
Stainless Steel							
1	In-line	3.00 (76.2)	3.50 (88.9)	3.00 (76.2)	1.50 (38.1)	4.25 (108.0)	②
2		3.50 (88.9)	6.75 (171.5)	3.00 (76.2)	1.50 (38.1)	7.50 (190.5)	
3		3.50 (88.9)	9.00 (228.6)	3.00 (76.2)	1.50 (38.1)	9.00 (228.6)	
4		3.50 (88.9)	11.25 (285.8)	3.00 (76.2)	1.50 (38.1)	12.00 (304.8)	

Notes

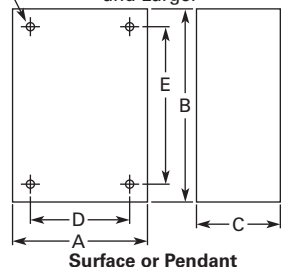
- ① Depth given is for two contact block deep stations. One contact block deep stations subtract 3/4 in (19.1 mm).
- ② No conduit entrance holes provided. Drill as required.

Approximate Dimensions in Inches (mm)

Flush Mounting

Die Case and Stainless Steel Covers Only

4 Mtg. Holes - 10-32 Screw Size for 1-11 Element Encl, 1/4-20 Screw Size for 12 Element and Larger



Number of Elements	Wide A	High B	Deep C	Mounting D	E
Die Cast					
1	3.88 (98.6)	4.0 (101.6)	0.25 (6.4) ^②	3.50 (88.9)	3.63 (92.2)
2	3.88 (98.6)	5.88 (149.4)	0.25 (6.4) ^②	3.50 (88.9)	5.50 (139.7)
3	3.88 (98.6)	7.75 (196.9)	0.25 (6.4) ^②	3.50 (88.9)	6.0 (152.4)
4	3.88 (98.6)	9.63 (244.6)	0.25 (6.4) ^②	3.50 (88.9)	9.25 (235)
Stainless Steel					
1	5.00 (127)	5.0 (127)	2.50 (63.5) ^②	3.25 (82.6)	1.88 (47.8)
2	5.00 (127)	6.88 (174.8)	2.50 (63.5) ^②	3.25 (82.6)	3.63 (92.2)
3	5.00 (127)	8.63 (219.2)	2.50 (63.5) ^②	3.25 (82.6)	5.50 (139.7)
4	5.00 (127)	10.50 (266.7)	2.50 (63.5) ^②	3.25 (82.6)	7.25 (184.2)

Notes

- ① Depth given includes pull box.
- ② Depth given is for flat cover. Deep cover is 3/4 in (19.1 mm) deeper.

1.7

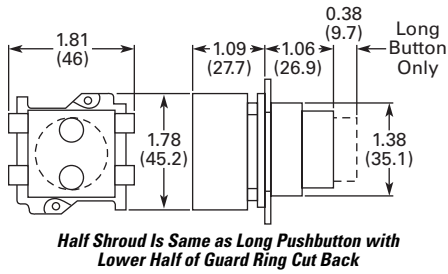
Pushbuttons and Indicating Lights

30.5 mm Heavy-Duty Watertight/Oiltight—10250T

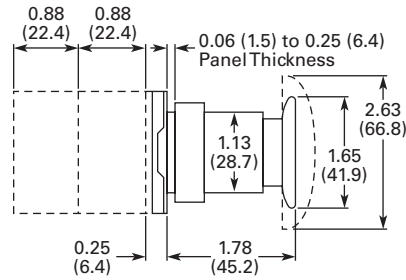
1

Approximate Dimensions in Inches (mm)

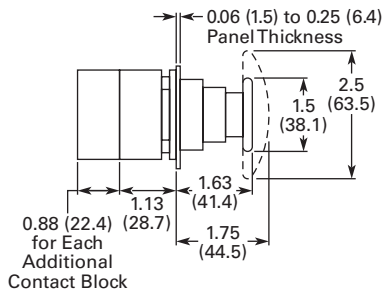
Flush and Long Pushbutton Half Shroud



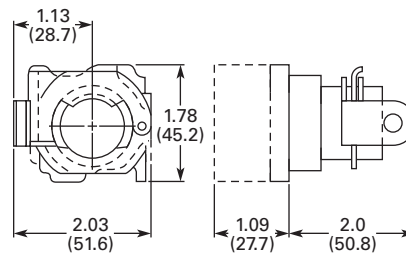
Push-Pull Switch



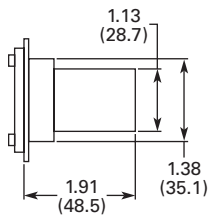
Mushroom and Jumbo Head Pushbutton



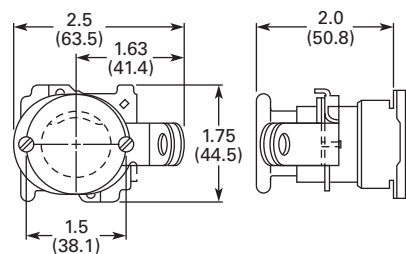
Flush Pushbutton Operator with Padlock Attachment



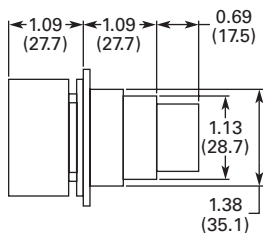
Pushbutton with Cylinder Lock



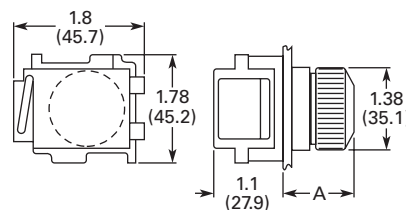
Mushroom Head Pushbutton Operator with Padlock Attachment



Illuminated Pushbutton

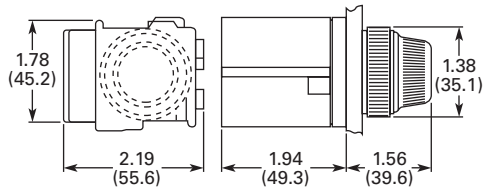


Indicating Light—Transformer Type

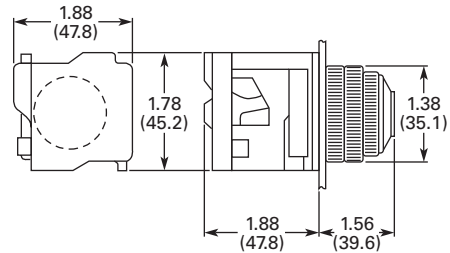


Approximate Dimensions in Inches (mm)

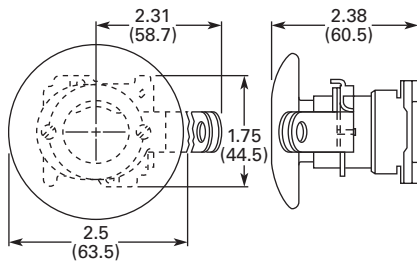
PresTest Indicating Light—Transformer Type



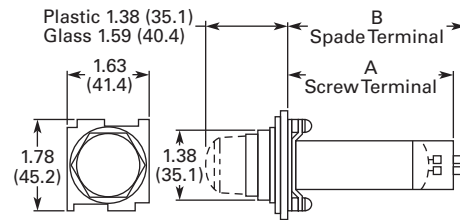
PresTest Indicating Light—Resistor Type



Jumbo Mushroom Head Pushbutton Operator with Padlock Attachment

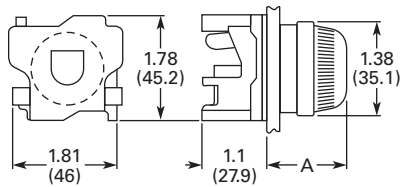


Master Test Indicating Light



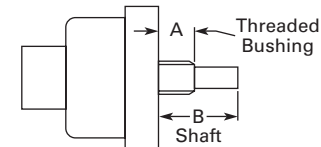
Description	B	C
Relay type	4.38 (111.2)	4.28 (108.7)
Solid-state type	2.94 (74.7)	2.88 (73.2)

Indicating Light—Resistor and Neon Type



Lens	A
Plastic	1.38 (35.1)
Glass	1.56 (39.6)

Potentiometer Shaft



Shaft Dimensions of Potentiometer That C-H Operator Will Accept

Operator Catalog Number	A	B
10250T330	0.38 (9.7) dia. x 0.38 (9.7) long	0.25 (6.4) dia. x 0.63 (16) long

1.7

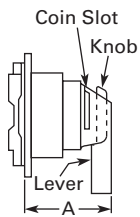
Pushbuttons and Indicating Lights

30.5 mm Heavy-Duty Watertight/Oiltight—10250T

1

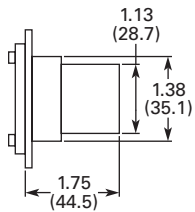
Approximate Dimensions in Inches (mm)

Coin Operated Selector Switch

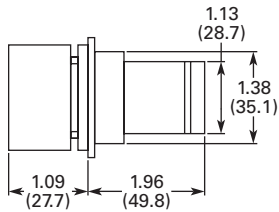


Operator	Dim. A
Knob	1.38 (35.1)
Lever	1.50 (38.1)
Coin slot	1.38 (35.1)

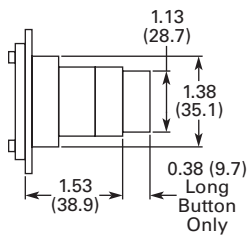
Key Operated Selector Switch



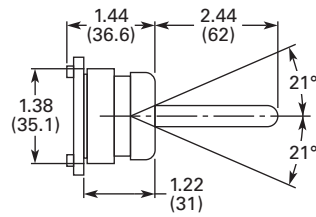
Illuminated Selector Switch



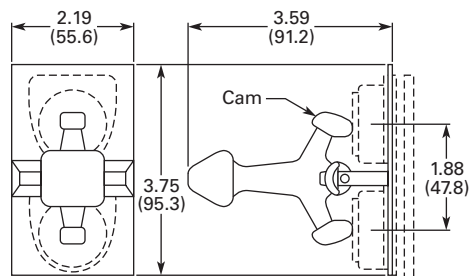
Roto-Push



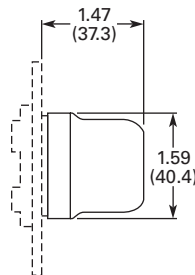
Wobble Stick Catalog No. 10250TA5



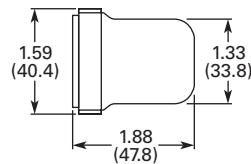
Lever Operator—For Use with Two Vertically Mounted Flush Pushbuttons Catalog No. 10250TA14



Flexible Boot—For Protecting Flush or Long Pushbutton Catalog No. 10250TA3 Typical

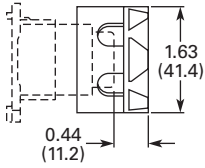


Transparent Flexible Boot—For Illuminated Pushbutton Catalog No. 10250TA25

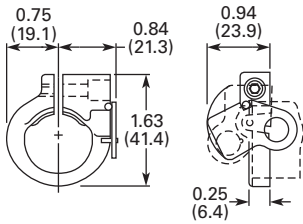


Approximate Dimensions in Inches (mm)

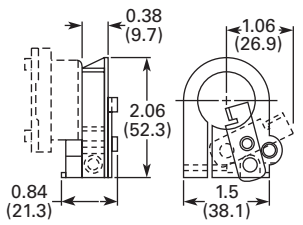
**Padlock Attachment—For Knob Selector Switch
Catalog No. 10250TA11**



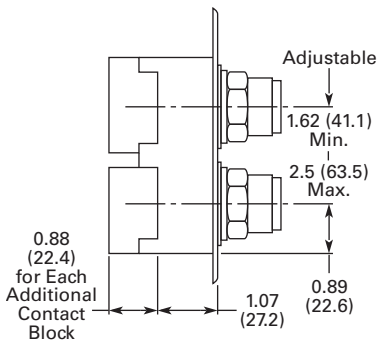
**Padlock Attachment—For Flush Pushbutton
Catalog No. 10250TA2**



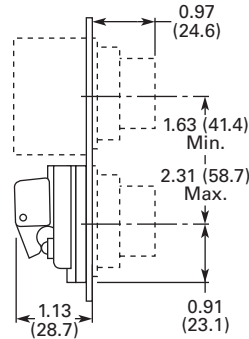
**Padlock Attachment—For Extended Pushbutton
Catalog No. 10250TA26**



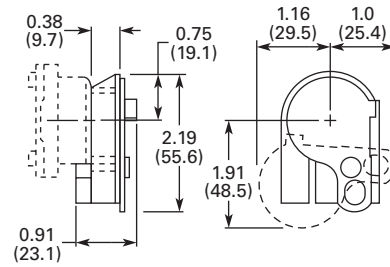
**Maintained Pushbutton
Catalog No. 10250TA66 Typical**



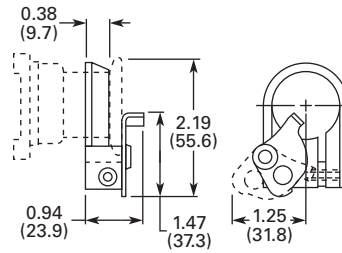
**Maintained Contact Attachment
Catalog No. 10250TA17 Typical**



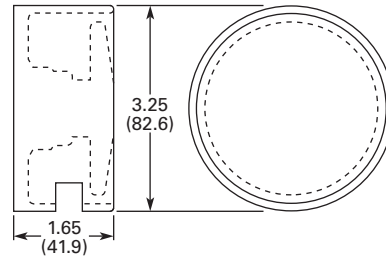
**Padlock Cover Guard for Flush Pushbutton
Catalog No. 10250TA36**



**Padlock Attachment for Maintained Push-Pull Operator
Catalog No. 10250TA64**



**Protecting Shroud for Jumbo Mushroom Head Button
Catalog No. 10250TA56**



1.7

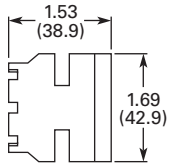
Pushbuttons and Indicating Lights

30.5 mm Heavy-Duty Watertight/Oiltight—10250T

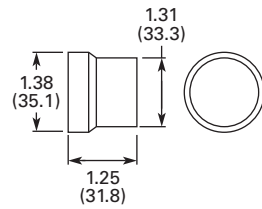
1

Approximate Dimensions in Inches (mm)

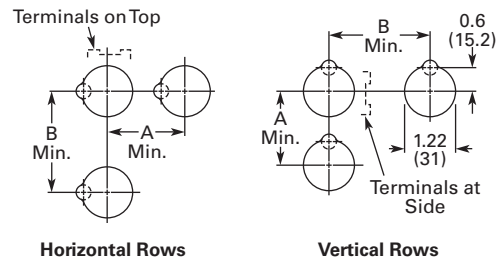
Protecting Shroud for Mushroom Head Button Catalog No. 10250TA6



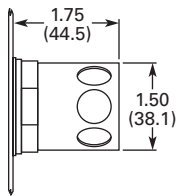
Extended Retaining Nut Catalog No. 10250TA12



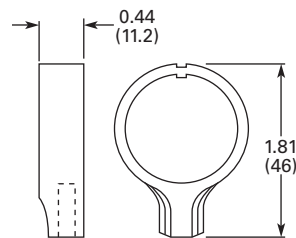
Panel Drilling and Minimum Spacing



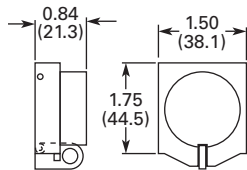
Protecting Shroud for Illuminated Pushbutton Catalog No. 10250TA15



Lever for Roto-Push Operator Catalog No. 10250TA13



Padlock Hasp or Flip-Up Guard Catalog No. 10250TA38



Legend Plate	A Min.	B Min.
1 or 2 Circuit Contact Blocks		
Small or none	1.63 (41.4)	2.25 (57.2)
Standard	1.75 (44.5)	2.25 (57.2)
Jumbo ^①	2.25 (57.2)	2.25 (57.2)
Extra large	2.50 (63.5)	2.60 (66)
4 Circuit Contact Block 10250T44		
Small or none	1.88 (47.8)	2.25 (57.2)
Standard	1.88 (47.8)	2.25 (57.2)
Jumbo ^①	2.25 (57.2)	2.25 (57.2)
Extra large	2.50 (63.5)	2.60 (66)

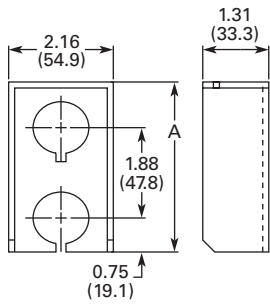
Notes

Locating nib hole or notch is 1.36–1.4 in (34.5–35.6 mm) #29 drill.

^① If jumbo plates are to be placed one above the other vertically, add 0.13 (3.3) to minimum dimensions listed.

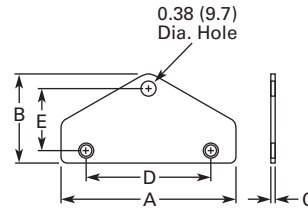
Approximate Dimensions in Inches (mm)

Multiple Button Guard



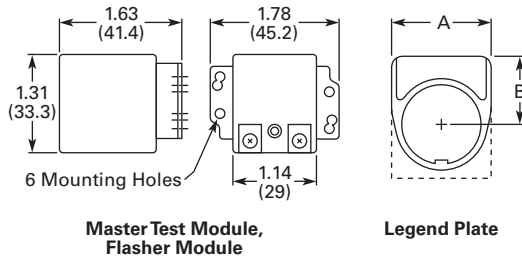
Number of Elements	A
2	4.0 (101.6)
3	5.88 (149.4)
4	7.88 (200.2)
7	13.38 (339.9)

Chain Hook Bracket



Enclosure Size (No. of Elements)	Wide A	High B	Deep C	Mounting D	E
2, 3 and 4	3.75 (95.3)	1.94 (49.3)	0.13 (3.3)	2.69 (68.3)	1.38 (35.1)
6 and 7	4.0 (101.6)	2.19 (55.6)	0.13 (3.3)	2.88 (73.2)	1.63 (41.4)

Master Test Module, Flasher Module and Legend Plate



Legend Plate	A	B
1/2 Round Legend Plates		
Small	1.56 (39.6)	0.91 (23.1)
Standard	1.59 (40.4)	1.07 (27.2)
Jumbo	2.06 (52.3)	1.53 (38.9)
Square Legend Plates		
Small	1.59 (40.4) sq.	0.90 (22.9)
Standard	1.75 (44.5) sq.	1.06 (26.9) ①
Jumbo	2.19 (55.6) sq.	1.50 (38.1)
Extra large	2.44 (62.0) sq.	1.63 (41.4)

Notes

Locating nib hole or notch is 1.36–1.4 in (34.5–35.6 mm) #29 drill.

① For plastic legend plate, Dimension B is 1.12 (28.4).

Available from

