Pushbuttons and Indicating Lights

10250T Pushbuttons

RMQ-Titan M22 Series

RMQ Compact C22 Series

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Revision notes

Volume 7—Logic Control, Operator Interface and Connectivity Solutions, CA08100008E

Tab 1—Pushbuttons and Indicating Lights

Revision date	Section	Change page(s)	Description
04/12/2017	1.5	All pages	Content edits to entire section
04/12/2017	1.6	All pages	Content edits to entire section

Powering Business Worldwide

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Toggle Switches—E10

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Product Description

The E10 switches from Eaton's Electrical Sector are intended for general purpose light industrial use. Designed for retrofit and OEM applications.

Features

General Purpose Toggles

- Various circuit functions include maintained and momentary
- Poles include from single-pole single-throw to four-pole double-throw
- Spade, screw, and solder terminations available
- Numerous ratings
- Short 11/32 in and tall 15/32 in bat lever available
- Standard 15/32–32 thd.
- Hardware furnished assembled

Heavy-Duty Hesitation Switches

- One-hole panel mount
- Three position switch offers unique positive center stop feature to assure lever cannot be thrown from one side through the center OFF position without stopping
  - Design feature is a major acceptance for motor reversing and speed control applications
  - Prevents motor damage resulting from high current generation by counter EMF of the armature at the time of reversing
  - Known as anti-plugging, hesitation, positive stop or positive off switch

Non-Illuminated AC Rated Pushbuttons

- One-hole panel mount
- Medium-duty
- Spade and screw terminations available
- Various bushing lengths and button extensions
- Numerous ampere ratings with horsepower ratings

Standards and Certifications

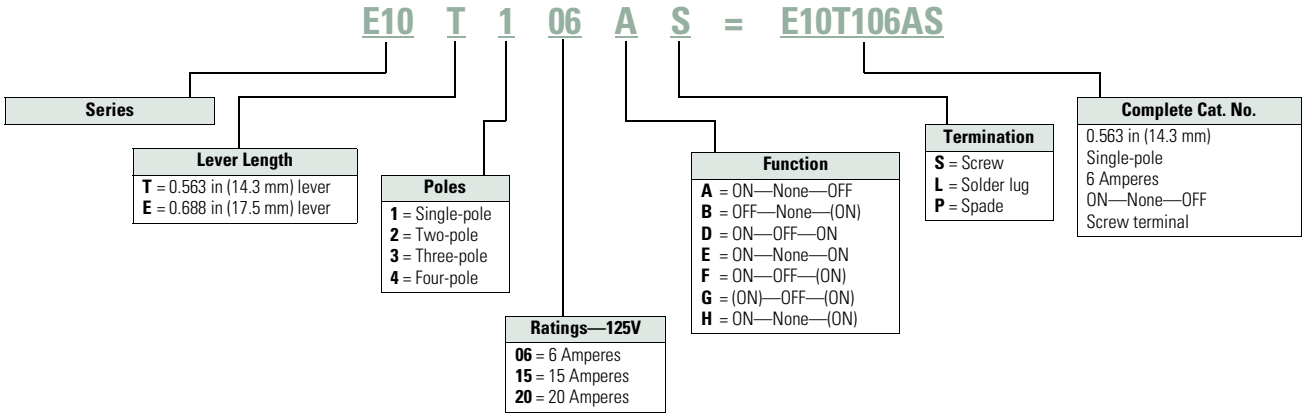
- UL Recognized
- CSA—File No. LR40068

Catalog Number Selection

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

Toggle Switches—E10 Series

Not to be used for ordering purposes



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Product Selection

Toggle Switches

E10 Series—AC Rated—Minimum Order Quantity 10 Pieces

Nominal AC Ratings Amperes 125V	250V	hp 50V	Poles and Throw ①	Function—Circuit with Lever In UP Position	CENTER Position	DOWN Position—Keyway	Screw Terminal Catalog Number	0.250 in (6.4 mm) Spade Terminal Catalog Number	Solder Lug Catalog Number
Single-Pole									
6	3	—	1 P.S.T.	ON	None	OFF	**E10T106AS**	**E10T106AP**	**E10T106AL**
15	10	3/4					**E10T115AS**	**E10T115AP**	**E10T115AL**
20	10	3/4					**E10E120AS**	**E10E120AP**	**E10E120AL**
6	3	—	1 P.D.T.	ON	OFF	ON	**E10T106DS**	**E10T106DP**	—
15	10	3/4					**E10T115DS**	**E10T115DP**	**E10T115DL**
20	10	3/4					**E10E120DS**	—	—
6	3	—	1 P.D.T.	ON	None	ON	**E10T106ES**	—	—
15	10	3/4					**E10T115ES**	**E10T115EP**	**E10T115EL**
20	10	3/4					**E10E120ES**	—	—
—	10	1/2	1 P.S.T.	OFF	None	(ON)	**E10T115BS**	**E10T115BP**	—
			1 P.D.T.	ON	OFF	(ON)	**E10T115FS**	**E10T115FP**	—
			1 P.D.T.	ON	None	(ON)	**E10T115HS**	**E10T115HP**	—
			1 P.D.T.	(ON)	OFF	(ON)	**E10T115GS**	**E10T115GP**	—
Two-Pole									
6	3	—	2 P.S.T.	ON	None	OFF	**E10T206AS**	**E10T206AP**	—
15	10	3/4					**E10T215AS**	**E10T215AP**	**E10T215AL**
20	10	3/4					**E10E220AS**	**E10E220AP**	**E10E220AL**
6	3	—	2. P.D.T.	ON	OFF	ON	**E10T206DS**	**E10T206DP**	—
15	10	3/4					**E10T215DS**	**E10T215DP**	**E10T215DL**
20	10	3/4					**E10E220DS**	**E10E220DP**	—
6	3	—	2 P.D.T.	ON	None	ON	**E10T206ES**	—	—
15	10	3/4					**E10T215ES**	**E10T215EP**	**E10T215EL**
20	10	3/4					**E10E220ES**	—	—
15	10	1/2	2 P.S.T.	OFF	None	(ON)	**E10T215BS**	—	—
			2 P.D.T.	ON	None	(ON)	**E10T215HS**	**E10T215HP**	—
			2 P.D.T.	(ON)	OFF	(ON)	**E10T215GS**	**E10T215GP**	—
Three-Pole									
15	10	3/4	3 P.S.T.	ON	None	OFF	**E10E315AS**	**E10E315AP**	—
			3 P.D.T.	ON	OFF	ON	**E10E315DS**	**E10E315DP**	**E10E315DL**
			3 P.D.T.	ON	None	ON	**E10E315ES**	**E10E315EP**	**E10E315EL**
Four-Pole									
15	10	3/4	4 P.S.T.	ON	None	OFF	**E10E415AS**	—	**E10E415AL**
			4 P.D.T.	ON	OFF	ON	**E10E415DS**	—	**E10E415DL**
			4 P.D.T.	ON	None	ON	**E10E415ES**	—	**E10E415EL**

Single-Pole

Two-Pole

Three-Pole

Four-Pole

Note

① See Circuit Diagrams on **Page V7-T1-6**.

Hesitation Switches

Heavy-Duty Hesitation Switch

E10 Series—Special Purpose—Minimum Order Quantity 10 Pieces

Nominal Ratings Amperes 28 Vdc	125 Vac	250 Vac	hp 250 Vac	Operation	Function—Circuit with Lever In… UP Position	CENTER Position	DOWN Position—Keyway	Poles and Throw ①	Screw Terminal Catalog Number
15	15	10	3/4	Maintained	ON	OFF	ON	2 P.D.T.	**E10E215SS**
								3 P.D.T.	**E10E315SS**
								4 P.D.T.	**E10E415SS**

Pushbuttons

One-Hole Mounted Medium-Duty, Mom. Contact

E10 Series—Minimum Order Quantity 10 Pieces

Nominal Ratings Amperes 125 Vac NO	NC	250 Vac NO	NC	hp 125–250V	Poles and Throw ①	Contacts	Bushing Length in (mm) Dim. "A"	Button Extension in (mm) Dim. "B"	Typical Maximum Operating Force	Screw Terminal Catalog Number	Spade Terminal 0.250 in (6.4 mm) Catalog Number
6	—	3	—	—	1 P.S.T.	NO	0.69 (17.5)	0.53 (13.5)	0.9 lbs	**E10P106RS**	**E10P106RP**
							0.34 (8.6)	0.25 (6.4)		**E10P106JS**	—
15	—	10	—	1/3	1 P.S.T.	NO	0.69 (17.5)	0.53 (13.5)	0.9 lbs	**E10P115RS**	**E10P115RP**
							0.34 (8.6)	0.25 (6.4)		**E10P115JS**	—
15	10	10	5	1/4 ②	1 P.D.T.	NO, NC	0.69 (17.5)	0.53 (13.5)	1.0 lbs	**E10P115LS**	—

Accessories

Toggle Switches Accessories—Minimum Order Quantity 100 Pieces

Description	Material/Notes	Catalog Number
Hexagon locknut	Zinc-chromate treated steel	**E10TA101**
Knurled face nut	Zinc-chromate treated steel	**E10TA102**
Internal tooth lockwasher	Cadmium plated steel	**E10TA103**
Terminal screws	#6-32 x 3/16 in binding head	**E10TA201**
Spade terminal adapter—0.250 in (6.4 mm)	Assembles to screw terminals	**E10TA202**
ON-OFF indicating plate—vertical orientation	Burnished nickel finish steel	**E10TA301**
OFF-ON indicating plate—horizontal orientation	Burnished nickel finish steel	**E10TA302**

E10TA104

Flip-up guard for toggle switches — **E10TA104**

E10TA105

Fixed shroud for toggle switches — **E10TA105**

Notes

Interlock mechanism prevents operation of lever through the center position until pressure is momentarily relieved. Designed for control and protection of reversing motors.

① See Circuit Diagrams on **Page V7-T1-6**.

② Rated 1/4 hp at 125V, 1/2 hp at 250V.

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Technical Data and Specifications

Toggle Switches

Description	Specification
AC ratings	6–20A, 125 Vac 3–10A, 250 Vac Max. 3/4 hp at 250 Vac
DC ratings	6–20A, 28 Vdc
Electrical life	6,000 cycles make/break at switch ampere rating
Operation	Slow make/slow break mechanism with butt action for AC and low voltage DC applications Maintained and momentary contacts
Poles/throws	1 through 4, single and double throw
Mounting	One hole with threaded 0.468 in-32 bushing and 0.068 x 0.035 in (1.7 x 0.9 mm) deep keyway that serves as anti-rotational feature
Lever lengths	0.563 in (14.3 mm) or 0.688 in (17.5 mm), bright nickel plated
Terminals	Screw, 0.250 in (6.4 mm) spade and solder lug

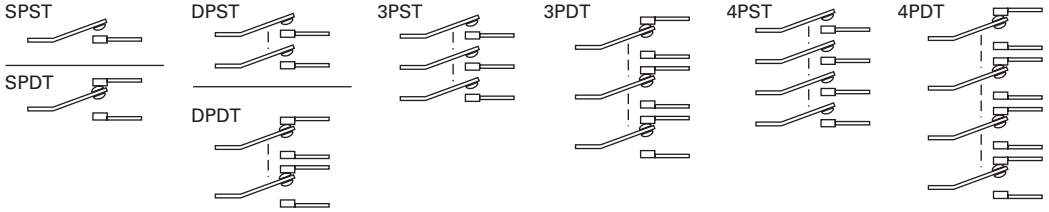
Hesitation Switches

Description	Specification
Operation	Slow make/slow break mechanism with butt action for AC and low voltage DC applications; maintained contacts; ideal for reversing motor applications; interlock mechanism prevents operation of lever through center position until manual pressure is momentarily relieved
AC ratings	15A, 125 Vac 10A, 250 Vac Max. 3/4 hp at 250 Vac
DC ratings	15A, 28 Vdc
Poles/throws	2, 3 and 4, double throw only
Mounting	Single-pole with threaded 0.468 in-32 bushing and 0.068 x 0.049 in (1.7 x 1.2 mm) deep keyway
Lever length	0.687 in (17.4 mm), stainless steel
Terminals	Screw

Pushbutton Actuators

Description	Specification
AC ratings	6–15A, 125 Vac (NO) 3–10A, 250 Vac (NO) Max. 1/3 hp at 125/250 Vac
Operation	Slow make/slow break mechanism Normally open contacts
Poles/throws	Single, single and double throw
Mounting	One hole with 0.468 in-32 threaded bushing and 0.068 x 0.035 in (1.7 x 0.9 mm) deep keyway Two bushing heights: 11/16 in (17.5 mm) and 11/32 in (8.7 mm)
Button extensions	17/32 in (13.5 mm) and 1/4 in (6.4 mm), bright nickel plated
Terminals	Screw

Circuit Diagrams



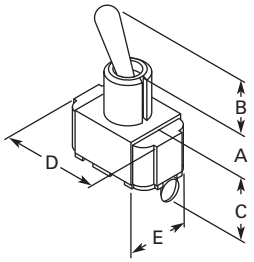
Dimensions

Approximate Dimensions in Inches (mm)

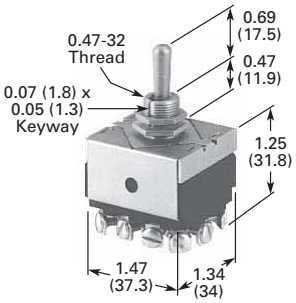
Toggle Switch Dimensions

No. of Poles	Operation	Bushing Length A	Lever Length B	Screw Terminals C	Screw Terminals D	Screw Terminals E	Spade Terminals C ①	Spade Terminals D	Spade Terminals E	Solder Lug C	Solder Lug D	Solder Lug E
1	Momentary and maintained	0.47 (11.9)	0.56 (14.2)	1.00 (25.4)	1.17 (29.7)	0.63 (16.0)	1.13 (28.7)	1.13 (28.7)	0.63 (16.0)	1.00 (25.4)	1.13 (28.7)	0.63 (16.0)
2	Maintained	0.47 (11.9)	0.56 (14.2)	1.06 (26.9)	1.31 (33.3)	0.75 (19.1)	1.19 (30.2)	1.31 (33.3)	0.75 (19.1)	1.06 (26.9)	1.31 (33.3)	0.75 (19.1)
	Momentary	0.47 (11.9)	0.56 (14.2)	1.25 (31.8)	1.31 (33.3)	0.75 (19.1)	1.31 (33.3)	1.31 (33.3)	0.75 (19.1)	1.25 (31.8)	1.31 (33.3)	0.75 (19.1)
3	Maintained	0.47 (11.9)	0.69 (17.5)	1.27 (32.3)	1.34 (34.0)	1.44 (36.6)	1.37 (34.8)	1.34 (34.0)	1.44 (36.6)	1.23 (31.2)	1.34 (34.0)	1.44 (36.6)
4	Maintained	0.47 (11.9)	0.69 (17.5)	1.20 (30.5)	1.30 (33.0)	1.40 (35.6)	1.30 (33.0)	1.34 (34.0)	1.40 (35.6)	1.23 (31.2)	1.34 (34.0)	1.44 (36.6)

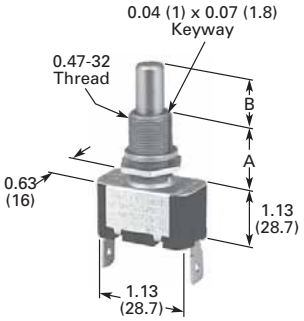
Toggle Switch



Hesitation Switch

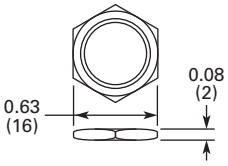


Pushbutton Actuator

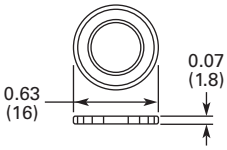


Accessories

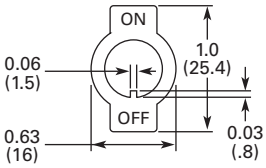
E10TA101 Hexagon Locknut



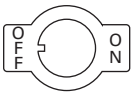
E10TA102 Knurled Face Nut



E10TA301 ON-OFF Indicating Plate—Vertical Orientation



E10TA302 ON-OFF Indicating Plate—Horizontal Orientation



Note

① Spade terminal adapters are used on 6 ampere and momentary screw terminal switches, adding 0.42 in (10.7 mm) to dimension C.

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Toggle Switches—E10E

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Switch Guard	**V7-T1-9**
Technical Data and Specifications	**V7-T1-10**
Dimensions	**V7-T1-11**

Product Description

Designed for general purpose and OEM applications, this line of toggle switches provides a high IP68 rating for demanding environments.

Features

Molded-In Screw Terminal

- Completely sealed against dust, moisture and other contaminants
- One-hole mounted bushing for easy installation
- Multi-circuits offered
- Two- and three-position with maintained and momentary action
- Molded-in terminal inserts and terminals numbers
- Single- and two-pole circuitry

Econoswitch

- Environmentally sealed
- Single- and two-pole circuitry
- One-hole mounting for easy installation
- Multi-circuits
- Two- and three-position with maintained and momentary action
- Three types of termination offered as standard

Switch Guard

- For use with two-position switch
- Cover closure transfers switch toggle lever to OFF position
- One-hole mounted mounting style
- Cover is molded out of red thermoset molding material
- Guard cover is spring-loaded to either close or lock in open position
- Prevents accidental operation at switches

Options

Note: Contact your local Eaton Sales Representative for more information.

- Non-UL Recognized devices
  - Alternate toggle levers
  - Locking toggle levers
  - Rocker buttons
- Special mounting hardware
- Mounting hardware furnished assembled
- Terminal screws furnished assembled
- Special circuits
- Panel seal, part number 32-341
- Spade terminal adapters available

Standards and Certifications

- UL—File number E15346; Guide card number is WOYR2
- CSA—LR40068, class number 6241

UL and CSA Nominal Ratings

Catalog Number	125 Vac	250 Vac
Amperes		
E10E118xx	18	9
E10E218xx	18	9
Single-Phase hp		
E10E118xx	1/4	1/2
E10E218xx	1/2	1
Three-Phase hp		
E10E118xx	—	—
E10E218xx	—	—

Product Selection

Molded-In Screw Terminal

E10E Series—Molded-In Screw Terminal

Single-Pole

Nominal AC Ratings Amperes 125V	250V	Single-Phase hp 125V	250V	Three-Phase hp 125/250V	Circuit with Lever Position Up	Center	Down (Keyway)	Catalog Number
Single-Pole								
18	9	1/4	1/2	—	ON	OFF	ON	**E10E118DM**
					ON	NONE	OFF	**E10E118AM**
					ON	NONE	ON	**E10E118EM**

Two-Pole

Two-Pole								
18	9	1/2	1	—	ON	OFF	ON	**E10E218DM**
					ON	NONE	OFF	**E10E218AM**
					ON	NONE	ON	**E10E218EM**

Econoswitch

E10E Series—Econoswitch

Single-Pole

Type of Operation	Current Ratings—Amperes 28 Vdc Lamp Load	Resistive Load	Inductive Load	115 Vac, 60 or 400 Hz Lamp Load	Resistive Load	Inductive Load	Circuit with Lever Position Up	Center	Down (Keyway)	Screw Terminal Catalog Number	Solder Lug Terminal Catalog Number	Spade Terminal Catalog Number
Single-Pole												
Maintained	5	20	15	3	15	10	ON	OFF	ON	**E10E118DS**	**E10E118DL**	**E10E118DP**
Maintained	5	20	15	3	15	10	ON	NONE	OFF	**E10E118AS**	**E10E118AL**	**E10E118AP**
Maintained	5	20	15	3	15	10	ON	NONE	ON	**E10E118ES**	**E10E118EL**	**E10E118EP**
Momentary	4	15	10	2	15	7	ON ①	OFF	ON ①	**E10E118GS**	**E10E118GL**	**E10E118GP**
Momentary	4	15	10	2	15	7	OFF	NONE	ON ①	**E10E118BS**	**E10E118BL**	**E10E118BP**

Two-Pole

Two-Pole												
Maintained	7	20	15	4	15	15	ON	OFF	ON	**E10E218DS**	**E10E218DL**	**E10E218DP**
Maintained	7	20	15	4	15	15	ON	NONE	OFF	**E10E218AS**	**E10E218AL**	**E10E218AP**
Maintained	7	20	15	4	15	15	ON	NONE	ON	**E10E218ES**	**E10E218EL**	**E10E218EP**
Momentary	5	18	10	2	11	8	ON ①	OFF	ON ①	—	**E10E218GL**	**E10E218GP**
Momentary	5	18	10	2	11	8	OFF	NONE	ON ①	**E10E218BS**	**E10E218BL**	**E10E218BP**

Switch Guard

Switch Guard

E10E Series—Switch Guard

	Catalog Number
Switch Guard	**E10TA104**

Note

① Momentary contact.

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Technical Data and Specifications

E10E Series—Molded-In Screw Terminal

Description	Specification
Watertight seal	Per MIL-STD-108E and designed to meet IP68
Thermoset molding materials	Meet flame retardant requirements
Temperature range	–50° to 150°F (–46° to 66°C)
Life	20,000 operations at rated load; 40,000 operations mechanical life; 6,000 operations at hp ratings per UL and CSA requirements
Bushings	15/32 in-32 thread

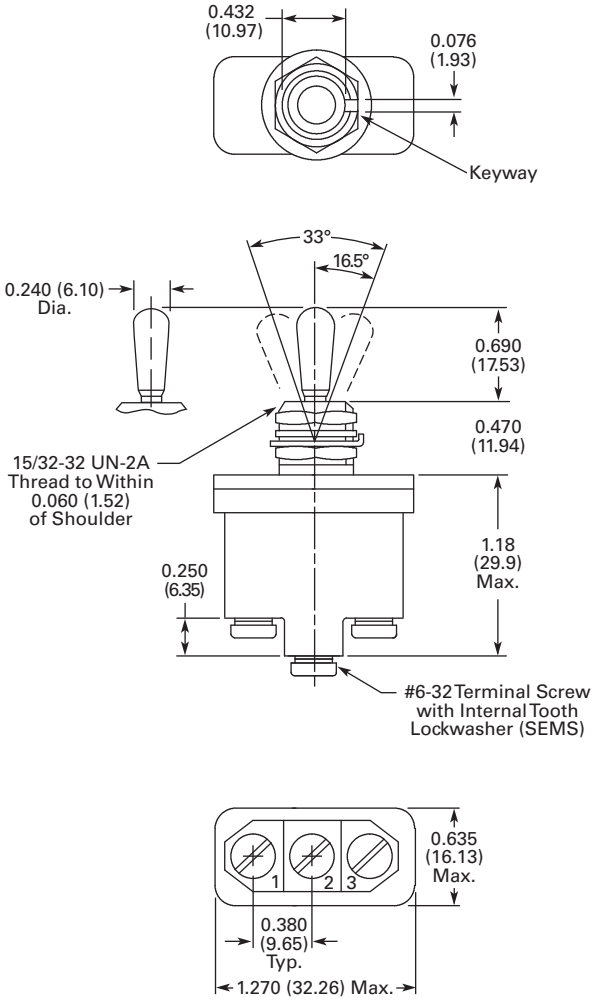
E10E Series—Econoswitch

Description	Specification
Watertight seal	Per MIL-STD-108E and designed to meet IP68
Type of terminal	Screws—6-32 UNC-22A Solder lug—0.125 in (3.17 mm) dia. hole Spade—0.250 in (6.35 mm) x 0.032 in (0.81 mm) thick
Life	50,000 operations at rated load; 100,000 operations mechanical life
Temperature range	–50° to 150°F (–46° to 66°C)

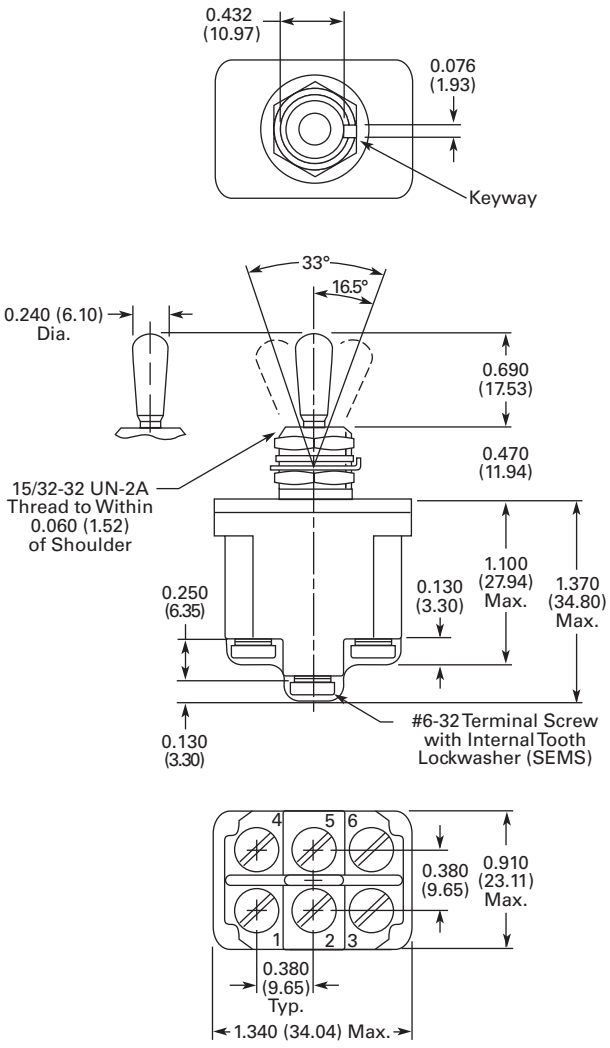
Dimensions

Approximate Dimensions in Inches (mm)

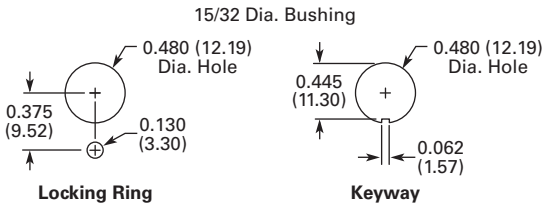
Single-Pole Molded-In Screw Terminal E10E Series



Two-Pole Molded-In Screw Terminal E10E Series



Toggle Switch Panel Cutout



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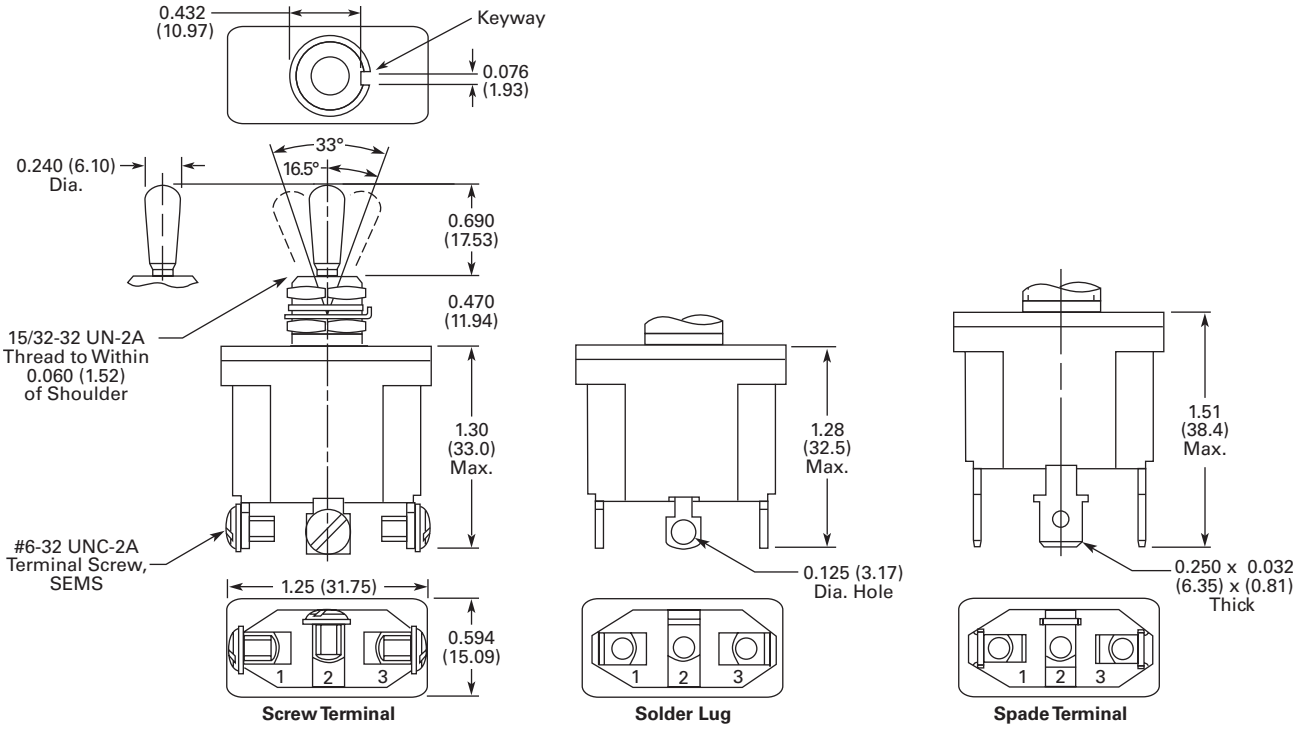
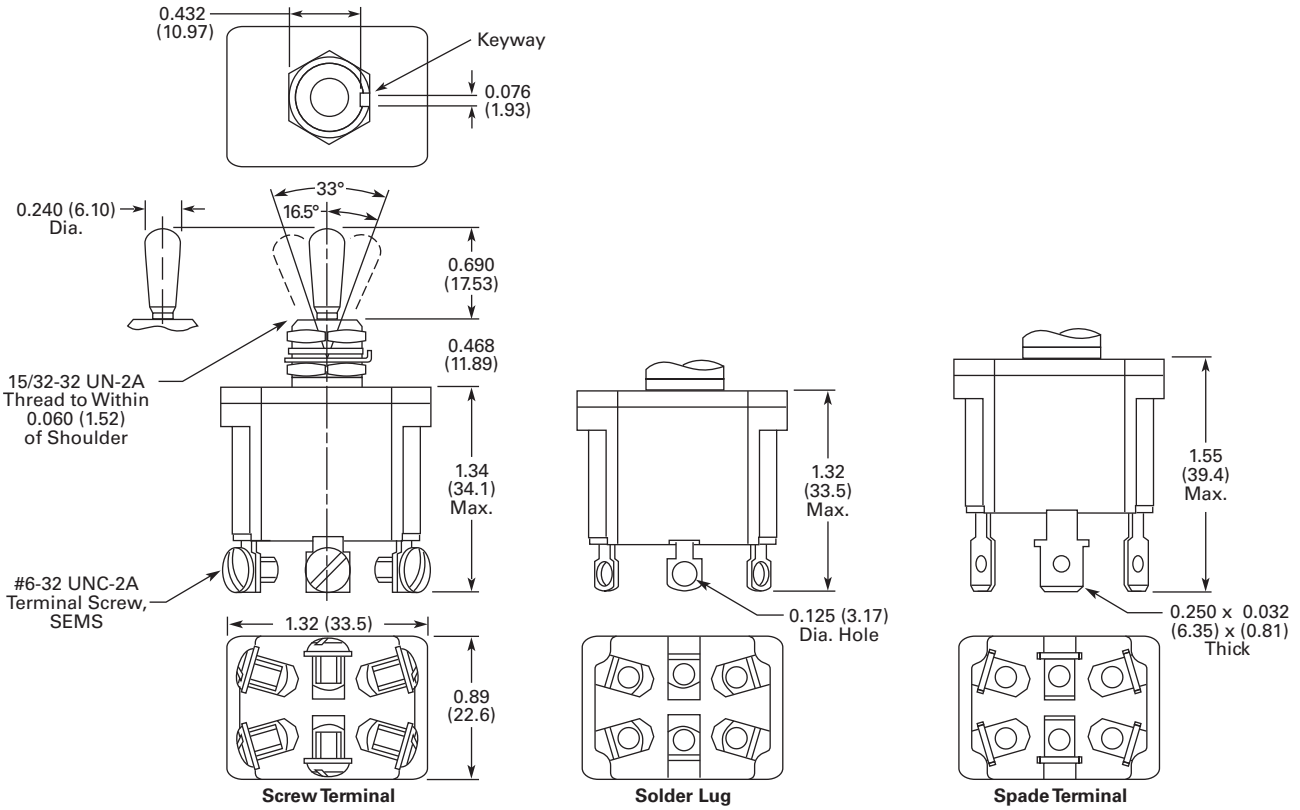
Approximate Dimensions in Inches (mm)

Single-Pole Econoswitch E10E Series

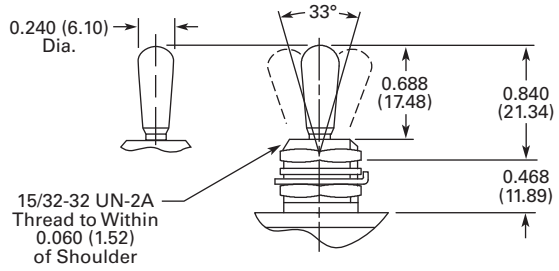


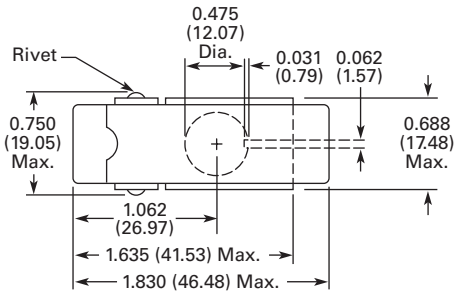
Two-Pole Econoswitch E10E Series

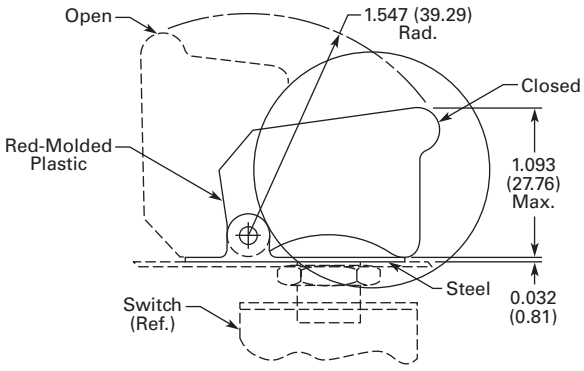


Approximate Dimensions in Inches (mm)

Switch Guard







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Pushbutton Control Stations

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Product Description

M22 Assembled Control Stations

- M22 series operators
- Available in horizontal and vertical configurations
- Impact resistant polycarbonate enclosures
- Optional yellow covers
- Base mounting contact blocks and light units for quick wiring and vibration resistance

Commercial Control Stations

- 10250T series operators
- Full front label
- Specific function labels on front of enclosure

General Purpose Control Stations

- Construction grade
- General purpose wall mount
- Popular with contractors
- UL (NEMA) Type 1

Special Purpose Control Stations

- Standard grade
- Polyester enclosure
- UL (NEMA) Type 3, 3R, 4, 4X, 13

10250H Series Heavy-Duty Control Stations

- 10250H Series operators
- Dark brown polyester enclosure
- Protective rubber gaskets provide NEMA 3S rating on pushbuttons
- Top and bottom 3/4 in NPT conduit entrances
- Includes alternate legend plates and spare mounting screws

10250T Series Heavy-Duty 30.5 mm Control Stations

- 10250T Series operators
- ASA 61 gray die-cast zinc enclosures
- Surface or flush mounting
- Single 3/4 in NPT conduit entrance on one and two element stations
- Single 1 in NPT conduit entrance on three element stations

Class I Division 2 10250T Series Heavy-Duty 30.5 mm Control Stations

- 10250T Series operators
- Factory sealed contact blocks
- Die-cast, polyester or stainless steel enclosures
- Approved for NEC Class I Division 2, Groups B, C and D or Class I Zone 2 Group IIB plus Hydrogen type hazardous locations

Class I Division 2 E34 Series Corrosion Resistant 30.5 mm Control Stations

- E34 Series operators
- Factory sealed contact blocks
- Die-cast, polyester or stainless steel enclosures
- Approved for NEC Class I Division 2 Groups B, C and D or Class I Zone 2 Group IIB plus Hydrogen type hazardous locations

Features

M22 Assembled Control Stations

- IP66, UL (NEMA) Type 4X, 13
- Impact resistant polycarbonate enclosures
- Optional yellow cover
- 25% smaller depth than most competitor enclosures
- Base mounting contact blocks and light units for faster wiring and vibration resistance

Commercial Control Stations

- ASA 61 gray die-cast zinc enclosures
- Pre-assembled and labeled for functions such as "Fuel Shut-Off"
- Great for commercial applications

General Purpose Control Stations

- Construction grade
- General purpose wall mount
- Popular with contractors
- UL (NEMA) Type 1

Special Purpose Control Stations

- Standard grade
- Polyester enclosure
- UL (NEMA) Type 3, 3R, 4, 4X, 13

10250H Series Heavy-Duty Control Stations

- Industrial grade
- Extra heavy-duty
- Polyester enclosure
- Booted buttons
- Outdoor installation
- UL (NEMA) Type 3, 3R, 3S, 4, 4X, 12, 13

10250T Series Heavy-Duty 30.5 mm Control Stations

- 30.5 mm operators
- Industrial grade
- Zinc die cast enclosure
- Popular with industrial end users
- UL (NEMA) Type 4, 4X, 12, 13

Class I Division 2 Control Stations

- Available with 10250T or E34 30.5 mm operators
- Zinc die cast, polyester or stainless steel enclosures
- Factory-sealed contact blocks
- Popular with industrial end users
- UL (NEMA) Type 4, 4X, 12, 13
- NEC Class I Division 2 Groups B, C and D

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Product Selection

M22 Assembled Control Stations

One Element Control Stations

Orientation	Description	Color	①	Inscription	Enclosure Cover Color	Catalog Number
Horizontal	40 mm mushroom head push-pull emergency stop operator	Red	NC	—	Yellow	**M22-C1-M1H**
Horizontal	40 mm illuminated mushroom head push-pull emergency stop operator, 85–264 Vac	Red	NO-NC	—	Yellow	**M22-C1-M2H**
Horizontal	40 mm mushroom head twist-to-release emergency stop operator	Red	NC	—	Yellow	**M22-C1-M3H**
Horizontal	40 mm mushroom head key-release emergency stop operator	Red	NC	—	Yellow	**M22-C1-M4H**
Horizontal	Flush pushbutton	Green	NO	⏽	Gray	**M22-C1-M5H**
Horizontal	Flush pushbutton	Green	NO	START	Gray	**M22-C1-M6H**
Horizontal	Extended pushbutton	Red	NC	◎	Gray	**M22-C1-M7H**
Horizontal	Extended pushbutton	Red	NC	STOP	Gray	**M22-C1-M8H**
Horizontal	Key-operated selector switch, two-position maintained	—	NO	OFF-ON	Gray	**M22-C1-M9H**
Horizontal	Knob type selector switch, three-position maintained	—	2NO	HAND 0 AUTO	Gray	**M22-C1-M10H**
Horizontal	Double pushbutton	Green	NO	START	Gray	**M22-C1-M11H**
		Red	NC	STOP		

Two Element Control Stations

Orientation	Element 1 Description	Color	①	Inscription	Element 2 Description	Color	①	Inscription	Enclosure Cover Color	Catalog Number
Horizontal	Extended pushbutton	Red	NC	◎	Flush pushbutton	Green	NO	⏽	Gray	**M22-C2-M1H**
Vertical	Flush pushbutton	Green	NO	START	Extended pushbutton	Red	NC	STOP	Gray	**M22-C2-M2V**
Vertical	Flush pushbutton	Black	NO	FORWARD	Flush pushbutton	Black	NO	REVERSE	Gray	**M22-C2-M3V**

Three Element Control Stations

Orientation	Element 1 Description	Color	①	Inscription	Element 2 Description	Color	①	Inscription	Element 3 Description	Color	①	Inscription	Enclosure Cover Color	Catalog Number
Horizontal	Extended pushbutton	Red	NC	◎	Indicating light	White	85–264 Vac	—	Flush pushbutton	Green	NO	⏽	Gray	**M22-C3-M1H**
Vertical	Indicating light	White	85–264 Vac	—	Flush pushbutton	Green	NO	START	Extended pushbutton	Red	NC	STOP	Gray	**M22-C3-M2V**
Horizontal	Flush pushbutton	Green	NO	⏽	Extended pushbutton	Red	NC	◎	Flush pushbutton	Green	NO	⏸	Gray	**M22-C3-M3H**
Vertical	Flush pushbutton	Black	NO	OPEN	Extended pushbutton	Red	NC	STOP	Flush pushbutton	Black	NO	CLOSE	Gray	**M22-C3-M4V**
Vertical	Flush pushbutton	Black	NO	FORWARD	Flush pushbutton	Red	NC	STOP	Flush pushbutton	Black	NO	REVERSE	Gray	**M22-C3-M5V**
Vertical	Flush pushbutton	Black	NO	UP	Flush pushbutton	Red	NC	STOP	Flush pushbutton	Black	NO	DOWN	Gray	**M22-C3-M6V**

Notes

For assembled control stations not found in this selection, please contact the Eaton Technical Resource Center at 1-877-ETN CARE (386-2273) or TRC@eaton.com.

① Contact block configuration.

Commercial Control Stations

Key Specifications

- 30.5 mm (10250T series) operators
- ASA 61 gray die-cast zinc enclosures
- Industrial grade
- UL® Type 4, 4X, 12, 13
- Single 3/4 in NPT conduit entrance
- Dimensions—in (mm)
  - Enclosure: 3.88 W x 4.00 H x 3.00 D (98.6 x 101.6 x 76.3)
  - Operator: 1.63 D (to enclosure) x 1.50 diameter (41.4 x 38.1)

What is included?

Eaton's pre-assembled, enclosed emergency stop pushbutton stations include an operator, an enclosure, contact blocks and a variety of unique labels. Each label has white lettering on a red background indicating the function and red lettering on a white background indicating the operator type.

Available Catalog Numbers

Catalog Number ①	Operator	Enclosure Color	Label
10250T5B62-S101	Push-Pull	Gray	EMERGENCY STOP
10250T5B62-S102	Push-Pull	Gray	EMERGENCY SHUT-OFF
10250T5B62-S103	Push-Pull	Gray	EMERGENCY GENERATOR STOP
10250T5B62-S104	Push-Pull	Gray	EMERGENCY HVAC SHUT-DOWN
10250T5B62-S105	Push-Pull	Gray	EMERGENCY ELECTRICAL DISCONNECT
10250T5B62-S106	Push-Pull	Gray	EMERGENCY BOILER SHUT-DOWN
10250T5B62-S107	Push-Pull	Gray	EMERGENCY CHILLER STOP
10250T5B62-S108	Push-Pull	Gray	EMERGENCY FUEL SHUT-OFF
10250T5B62-S109	Push-Pull	Gray	EMERGENCY REFRIGERATION STOP
10250T5B62-S110	Push-Pull	Gray	EMERGENCY POWER OFF
10250T5B62-S111	Push-Pull	Gray	EMERGENCY GAS SHUT-OFF
10250T5B62-S112	Push-Pull	Gray	EMERGENCY VENTILATION SHUT-DOWN
10250T5B62-S113	Push-Pull	Gray	GENERATOR

Additional Contact Blocks

(Sold Separately)

Catalog Number	Circuit Configuration
10250T51	1NC
10250T53	1NO
10250T1	NO-NC
10250T3	2NC
10250T2	2NO

Note

① Includes 1NO-1NC contact block.

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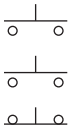
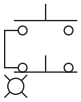
General Purpose Control Stations

Type N Control Stations—UL (NEMA) Type 1

	Contact Symbol	Button Type/Color	Legends	Catalog Number
Single Button Station for Padlock Attachment ①	**One Element Enclosure Type**			
		Flush/green	START	**10250H5100**
		Flush/red	STOP	**10250H5101**
		Extended/red	STOP	**10250H5104**
		Palm operated/black	None	**10250H89** ②
Selector Switch		Three-position selector switch/black knob	RUN/OFF/AUTO	**10250H289** ②
Two Button Station	**Two Element Enclosure Type**			
		Flush/red	START/STOP	**10250H5200**
		Flush/green extended/red	START/STOP	**10250H5207**
		Flush/black (all)	RAISE/LOWER	**10250H5201**
			FOR/REV	**10250H5202**
			OPEN/CLOSE	**10250H5203**
			UP/DOWN	**10250H5204**
			HIGH/LOW	**10250H5205**
			FAST/SLOW	**10250H5208**
Three Button Station	**Three Element Enclosure Type**			
		Flush/black (all)	FOR/REV/STOP	**10250H5300**
			UP/DOWN/STOP	**10250H5301**
			RAISE/LOWER/STOP	**10250H5302**
			OPEN/CLOSE/STOP	**10250H5303**
			FAST/SLOW/STOP	**10250H5304**
Three Button Station with Indicating Light		110/220V neon indicating light	START/STOP	
		Clear—flush/green; flush/red		**10250H5310**
		Red—flush/green; flush/red		**10250ED853**
		Amber—flush/green; flush/red		**10250ED853-2**

Notes

① Padlock attachment (10250H5110) must be purchased separately.

② Round button.

Type N Control Stations—Open Type Construction (No Cover)

	Contact Symbol	Button Type/Color	Legends	Catalog Number
Selector Switch	**One Element Enclosure Type**			
		Three-position selector switch/black knob	RUN/OFF/AUTO	**10250H2538**
Two Button Station	**Two Element Enclosure Type**			
		Flush/green	START/STOP	**10250H2747**
Mechanically Interlocked Pushbuttons		Flush/black (all) mech. interlocked	None ①	**10250H2544**

Special Purpose Control Stations

Special Purpose Control Stations—UL (NEMA) Type 3, 3R, 4, 4X, 13

	Contact Symbol	Feature	Legends	Catalog Number
10250H_	**One Element Pushbutton Type**			
		Flush	START	**10250H2738**
			STOP	**10250H658**
		With lock hasp	STOP	**10250H665**
10250H_	**Two Element Pushbutton Type**			
		Flush	START/STOP	**10250H364**
		With lock hasp	START/STOP	**10250H671**
		Buttons interlocked	FAST/SLOW	**10250ED664**
			FOR/REV	**10250H2740**
			UP/DOWN	**10250H2741**
			OPEN/CLOSE	**10250H2742**

Note

① No legend on buttons. Specify any standard legend.

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10250H Series Heavy-Duty Control Stations

Type H Control Stations—UL (NEMA) Type 3, 3S, 4, 4X, 12, 13

	Element Type		Feature	Circuit	Assembled Legend Plate	Unassembled Alternate Legend Plate		Catalog Number
10250H_	**One Element**							
	Pushbuttons		Without padlock hasp	1NO-1NC	JOG	START		**10250H1881**
						STOP		
						RUN		
			With padlock hasp	1NC	STOP	—		**10250H4239**
	Knob selector switch		Two-position	1NO-1NC	OFF/ON	—		**10250H4526**
			Three-position	1NO-1NC	MAN/OFF/AUTO	—		**10250H4527**
10250H_	**Two Element**							
	Pushbuttons		Standard	1NO-2NC	START/STOP	—		**10250H1884**
				2NO-2NC	RAISE/LOWER	FORWARD		**10250H1885**
						REVERSE		
						OPEN		
						CLOSE		
			Standard and standard with padlock hasp	1NO-2NC	START/STOP	—		**10250H4240**
10250H_	**Three Element**							
	Pushbuttons		Standard	2NO-3NC	FOR/REV/STOP	START	OPEN	**10250H1890**
			Two standard and standard with padlock hasp			JOG	CLOSE	**10250H4241**
						RAISE	FAST	
						LOWER	SLOW	
	Indicating light and pushbuttons	120V	Light-red lens and two plain	1NO-2NC	MOTOR RUNNING START/STOP	—		**10250H1913**

10250T Series Heavy-Duty 30.5 mm Control Stations

Complete Assembled Stations—UL (NEMA) Type 4, 4X, 12, 13

	Element Type ①	Features	Contact Block(s)	Legend	Surface Mounting Catalog Number	Flush Mounting ② Catalog Number
Break Glass Station	**Break Glass Station**					
	Break glass station ③	Gray enclosure	NC (logic level)	EMERG. OFF	**10250TGS**	—
		Red enclosure			**10250TGR**	—
One Element	**One Element**					
	Pushbutton	Standard	NO-NC	START	**10250T3516**	**10250T3573**
			NC	STOP	**10250T3518**	**10250T3575**
			NO-NC	None	**10250T3540**	**10250T3597**
		Mushroom head	NO-NC	START	**10250T3517**	**10250T3574**
			NC	STOP	**10250T3519**	**10250T3576**
		With lock hasp ④	NC	STOP	**10250T3520**	**10250T3577**
	Selector switch	Two-position black knob	NO-NC	OFF/ON	**10250T3523**	**10250T3580**
		Three-position black knob	2NO	MAN/OFF/AUTO	**10250T3524**	**10250T3581**
	Push-pull three-position	Momentary red button	2NC	START/STOP	**10250T3545**	**10250T3602**
Two Element	**Two Element**					
	Pushbuttons	Standard	1NO-2NC	START/STOP	**10250T3525**	**10250T3582**
			2NO-2NC	RAISE/LOWER	**10250T3672**	**10250T3673**
			2NO-2NC	None	**10250T3541**	**10250T3598**
		With lock hasp ④	1NO-2NC	START/STOP	**10250T3542**	**10250T3599**
		Standard and mushroom head	1NO-2NC	START/STOP	**10250T3526**	**10250T3583**
		Standard with maintained contact ⑤	NO-NC	START/STOP	**10250T3528**	**10250T3585**
			Plus NC			
Three Element	**Three Element**					
	Pushbuttons	Standard	2NO-3NC	FOR, REV, STOP	**10250T3532**	**10250T3589**
			2NO-3NC	UP, DOWN, STOP	**10250T3615**	—
			2NO-3NC	OPEN, CLOSE, STOP	**10250T3614**	—
			2NO-3NC	None, None, STOP	**10250T3543**	**10250T3600**
		Two standard and with lock hasp	2NO-3NC	None, None, STOP	**10250T3544**	**10250T3601**
	Indicating light (transformer type) and pushbuttons	Red lens — 120V	1NO-2NC	MOTOR RUN, START/STOP	**10250T3536**	**10250T3593**
		Red lens — 240V			**10250T3537**	**10250T3594**
		Red lens — 480V			**10250T3538**	**10250T3595**
		Red lens — 600V			**10250T3539**	**10250T3596**

Break Glass Kit

Break Glass Operator ⑥

Description	Catalog Number
Operator with hammer and five glass discs	**10250TBG**
Glass discs only (5)	**10250TGL**

Notes

① Stop buttons are red—all others are black.
② NEMA 4–13, if properly mounted on a flat surface. Consists of front plate, legend, operator and contact blocks.
③ Break glass stations will not function with Normally Open contact blocks.
④ Lock is 10250TA2.
⑤ Uses deep cover instead of shallow cover. Switch component is 10250TA67—mechanically interlocked operators.
⑥ Shown assembled to contact block (contact block supplied separately).

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Class I Division 2 10250T Series Heavy-Duty 30.5 mm Control Stations

Complete Assembled Stations—
UL (NEMA) Type 4, 4X, 12, 13; NEC Class I Division 2, Groups B, C and D

Contact Symbol	Button Type/Color	Legend Marking	Die Cast Enclosure Catalog Number	Polyester Molded Enclosure Catalog Number	Stainless Steel Enclosure Catalog Number
10250T7007					
Single Pushbutton					
1NO 1NC	Flush/green	START	**10250T7003**	**10250T7003P**	**10250T7003S**
	Extended/red	STOP	**10250T7005**	**10250T7005P**	**10250T7005S**
	Alum. jumbo mushroom/red	EMER. STOP (engraved button)	**10250T7007**	**10250T7007P**	**10250T7007S**
	Flush/black	No legend	**10250T7009**	**10250T7009P**	**10250T7009S**
10250T7023P					
Two Pushbuttons					
1NO 1NC Each Button	Flush/green	START	**10250T7023**	**10250T7023P**	**10250T7023S**
	Extended/red	STOP			
	Flush/black	No legend	**10250T7025**	**10250T7025P**	**10250T7025S**
	Flush/black	No legend			
10250T7033S					
Single Pilot Light—Two Pushbuttons					
1NO 1NC Each Button	120 Vac red	No legend	**10250T7033**	**10250T7033P**	**10250T7033S**
	Flush/green	START			
	Extended/red	STOP			
	120 Vac red	No legend	**10250T7035**	**10250T7035P**	**10250T7035S**
	Flush/black				
	Flush/black				
Three-Position Selector Switch					
2NO 2NC	Maintained knob/black	HAND/OFF/AUTO	**10250T7011**	**10250T7011P**	**10250T7011S**
	Maintained knob/black	No legend	**10250T7013**	**10250T7013P**	**10250T7013S**
Single Pushbutton Maintained					
Pull Push O X 1NO X O 1NC	Push-pull with jumbo mushroom/red	EMER. STOP (engraved button)	**10250T7019**	**10250T7019P**	**10250T7019S**

Class I Division 2 E34 Series Corrosion Resistant 30.5 mm Control Stations

E34EX_

Complete Assembled Stations—
UL (NEMA) Type 4, 4X, 12, 13; NEC Class I Division 2, Groups B, C and D

Contact Symbol	Button Type/Color	Legend Marking	Die Cast Enclosure Catalog Number	Polyester Molded Enclosure Catalog Number	Stainless Steel Enclosure Catalog Number
Single Pushbutton					
1NO 1NC	Flush/green	START	**E34EX7003**	**E34EX7003P**	**E34EX7003S**
	Extended/red	STOP	**E34EX7005**	**E34EX7005P**	**E34EX7005S**
	Alum. jumbo mushroom/red	EMER. STOP (engraved button)	**E34EX7007**	**E34EX7007P**	**E34EX7007S**
	Flush/black	No legend	**E34EX7009**	**E34EX7009P**	**E34EX7009S**
Two Pushbuttons					
1NO 1NC Each Button	Flush/green	START	**E34EX7023**	**E34EX7023P**	**E34EX7023S**
	Extended/red	STOP			
	Flush/black	No legend	**E34EX7025**	**E34EX7025P**	**E34EX7025S**
	Flush/black	No legend			
Three-Position Selector Switch					
2NO 2NC	Maintained knob/black	HAND/OFF/AUTO	**E34EX7011**	**E34EX7011P**	**E34EX7011S**
	Maintained knob/black	No legend	**E34EX7013**	**E34EX7013P**	**E34EX7013S**
Single Pushbutton Maintained					
Pull Push O X 1NO X O 1NC	Push-pull with jumbo mushroom/red	EMER. STOP (engraved button)	**E34EX7019**	**E34EX7019P**	**E34EX7019S**

Accessories

Padlock Attachment

Type N Control Stations

Description	Catalog Number
Padlock attachment—For field assembly on square button type (except extended button types)	**10250H5110**

Note

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Page V7-T1-22**.

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Custom Assembled Stations Specification Form

Ordering Instructions

Step 1

Copy this ordering guide from catalog.

Step 2

Specify 10250T or E34 pushbutton lines in the corresponding box on the following page.

10250T	**Pages V7-T1-192** to **V7-T1-263**
E34	**Pages V7-T1-264** to **V7-T1-305**
10250T and E34 Class I Div. 2	**Pages V7-T1-331** to **V7-T1-371**

Step 3

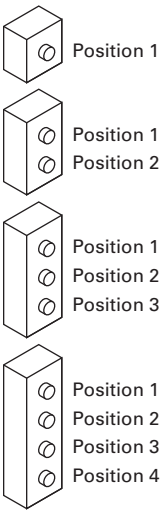
Check back of panel dimensions—specify single or double depth enclosure in the corresponding box on the following page.

Step 4

Specify enclosure catalog number and price in the corresponding box on the following page. Enclosures can be found on **Pages V7-T1-116**, **V7-T1-243** and **V7-T1-293**. For pricing, reference the most recent PAD or VISTA-line.

Step 5

Specify catalog numbers for desired operator, legend plate, light unit, accessory and contact block(s) for each location in the enclosure in the corresponding box on the following page. (See position locations on this page.)



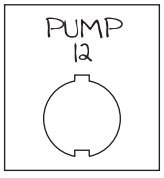
Position Locations

Step 6

For non-standard legends, specify legend desired, letter size and location on the layout sketches on the following page. For limitations see **Page V7-T1-242**. For pricing, use the blank legend catalog number and "STAMP" Suffix (Ex.: **10250TS36STAMP**) and reference the most recent PAD or VISTA-line.

Example: 10250TS36

Special
Legend
for Position #_____



LETTER SIZE

3/32 in	
1/8 in	✔
3/16 in	

Step 7

Fax Sheet 2 of this form to Eaton's TRC, Technical Resource Center, at 828-651-0549 to the attention of—**Custom Stations Order** or email to TRC@eaton.com.

Within a few days you will receive a confirmation fax with the custom station part number and price.

Step 8

Place your order over the VISTA System.

For Selector and Roto-Push Operators

10250T or E34

For single contact blocks or 1NO-1NC contact blocks, the mounting position of contacts must be specified. For example: If a 1NO-1NC contact block is required, specify if NO is to be mounted in Top A position or Bottom B position.

To — Eaton's TRC, Custom Station Order
(828) 651-0549 FAX, or email to TRC@eaton.com

From — Customer Name _____
Customer Contact _____
Phone Number _____
Fax Number _____
Email Address _____

FACTORY USE ONLY	
Part Number	
Product Code	
Suffix	
Date	
Engineer	

Step 2)

10250T ❑ **STD** ❑ **Class I Division 2**
E34 ❑ **STD** ❑ **Class I Division 2**

Step 3)

	✔
Single Depth Enclosure	
Double Depth Enclosure	

Step 4)

Enclosure Catalog Number	Price

Step 5)

Position	Operator	Price U.S. $	Light Unit	Price U.S. $	Contact Block	Price U.S. $	A/L	B/R	Contact Block	Price U.S. $	A/L	B/R	Total Price
1													
2													
3													
4													

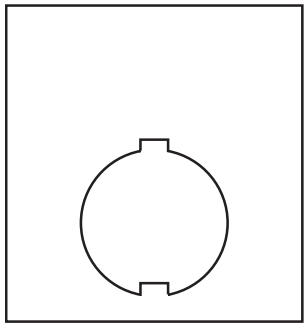
Position	Legend Plate	Price U.S. $	Lens or Caps	Price U.S. $	Accessory	Price U.S. $	Total Price
1							
2							
3							
4							

Total:

10% Adder for Assembled Stations

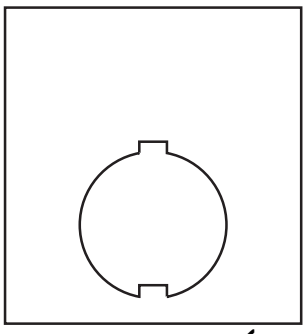
Step 6) Non-standard Legends

Special Legend for Position #_____



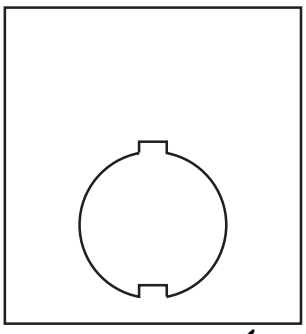
LETTER SIZE	✔
3/32 inch (2.4 mm)	
1/8 inch (3.2 mm)	
3/16 inch (4.8 mm)	

Special Legend for Position #_____



LETTER SIZE	✔
3/32 inch (2.4 mm)	
1/8 inch (3.2 mm)	
3/16 inch (4.8 mm)	

Special Legend for Position #_____

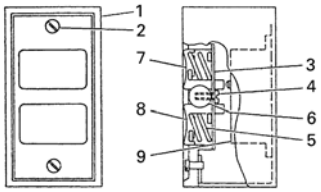


LETTER SIZE	✔
3/32 inch (2.4 mm)	
1/8 inch (3.2 mm)	
3/16 inch (4.8 mm)	

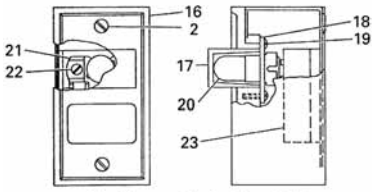
1

Renewal Parts

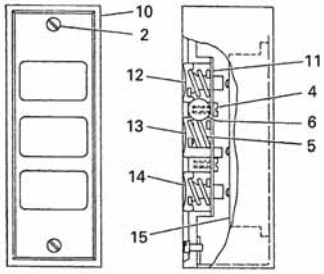
Type N Renewal Parts



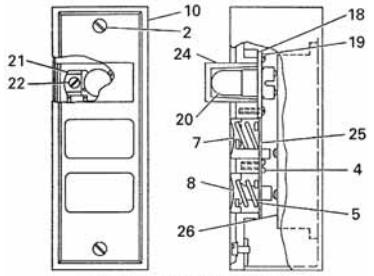
One and Two Element Station



One Element Indicating Light



Three Element Station



Two Element Station with Indicating Light

Open Type Two Element

Assembled Stations—Type N

Item No.	Description	No. Req.	Part Number
Type N—Square Buttons			
1	Cover	1	
	Two element		**49-3524**
	One element—top button		**49-3524-2**
	One element—bottom button		**49-3524-3**
2	Cover screw	2	**11-2168**
3	Pushbutton support bracket	1	**79-6649**
4	Pushbutton support bracket screw	1	**11-2090**
5	Pushbutton spring	2	**69-2571**
6	Disc (when used—two element assembly)	2	**16-1960**
7	Pushbutton—top position	1	
	START/green		**53-1169-3**
	RAISE/black		**53-1169-66**
	FORWARD/black		**53-1169-7**
	OPEN/black		**53-1169-9**
	UP/blank		**53-1169-11**
	Blank/green		**53-1169**
8	Pushbutton—bottom position	1	
	STOP/red		**53-1202-2**
	Extended STOP/red		**53-1202-5**
	REVERSE/black		**53-1169-8**
	CLOSE/black		**53-1169-10**
	DOWN/black		**53-1169-12**
	LOWER/black		**53-1169-6**
	Blank/red		**53-1202**

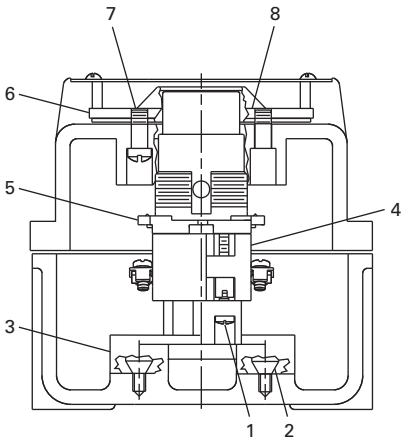
Item No.	Description	No. Req.	Part Number
Type N—Square Buttons, continued			
9	Pushbutton element	1	
	1NO-1NC		**86-2588**
	2NO		**86-2588-2**
	1NO		**86-2588-3**
	1NC		**86-2588-4**
10	Cover	1	**49-3464**
11	Pushbutton support bracket	1	**79-6650**
12	Pushbutton—top position	1	
	FORWARD/black		**53-1170-7**
	UP/black		**53-1170-4**
	RAISE/black		**53-1170-5**
	OPEN/black		**53-1170-9**
	FAST/black		**53-1170-6**
13	Pushbutton middle position	1	
	REVERSE/black		**53-1169-15**
	DOWN/black		**53-1169-18**
	LOWER/black		**53-1169-16**
	CLOSE/black		**53-1169-17**
	SLOW/black		**53-1169-13**
14	Pushbutton—bottom position	1	
	STOP/red		**53-1201-2**
15	Pushbutton element	1	
	2NO-3NC		**86-2593**
16	Cover	1	**49-3524-4**

Assembled Stations—Type N, continued

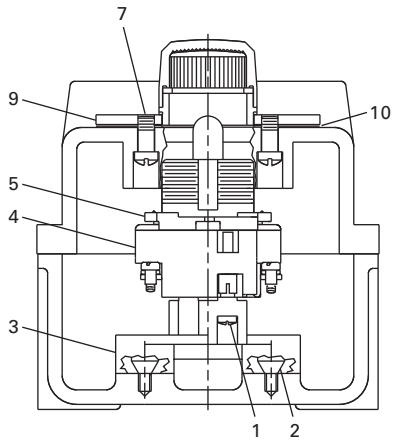
Item No.	Description	No. Req.	Part Number
Type N—Square Buttons, continued			
17	Lens	1	
	Clear		**28-494**
	Red		**28-887-2**
	Amber		**28-887-3**
18	Shield	1	**73-1337**
19	Shield screws	4	**11-2012**
20	Lamp (neon NE48)	1	**28-494**
21	Lamp receptacle	1	**28-902**
22	Lamp receptacle screw	1	**911-330F1**
23	Pilot light terminal base	1	**86-2586**
24	Lens	1	
	Clear		**28-887**
	Red		**28-887-2**
	Amber		**28-887-3**
25	Pushbutton support bracket	1	**79-6650-2**
26	Pushbutton element	1	
	1NO-1NC		**86-2594**

Item No.	Description	No. Req.	Part Number
Type N—Round Buttons			
Similar to 27	Pushbutton assembly and element for:		
	10250H289	1	**10250H2538**
	10250H364	1	**86-353**
	10250H685	1	**86-353-8**
	10250H665	1	**86-353-8**
	10250H671	1	**86-353**
	10250H2738	1	**86-353-3**
	10250H2740	1	**86-356**
	10250H2741	1	**86-356**
	10250H2742	1	**86-356**

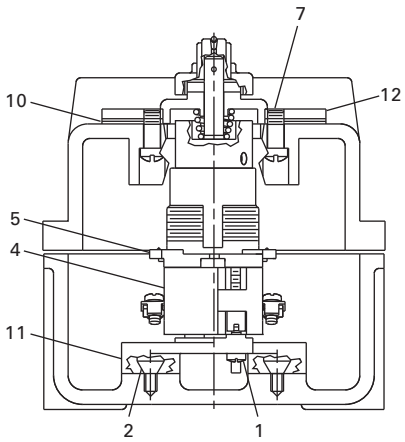
Type H Renewal Parts



Pushbutton



Indicating Light



Selector Switch

Assembled Stations—Type H

Item No.	Description	No. Req.	Part Number
Type H—Assembled Stations			
1	Screw	2	**11-4654**
2	Screw	2	**11-5719**
3	Base	1	**17-16560**
4	Contact blocks	See **Page V7-T1-245**	
5	10250T operator	See **Pages V7-T1-198** to **V7-T1-235**	
6	Mounting plate	1	**17-19524**

Item No.	Description	No. Req.	Part Number
Type H—Assembled Stations			
7	Screw	4	**11-953**
8	Diaphragm	1	**32-253-2**
9	Mounting plate	1	**17-19522**
10	Gasket	1	**32-254**
11	Base	1	**17-16561**
12	Mounting plate	1	**17-19523**

1

Technical Data and Specifications

Ratings

Maximum Ampere Ratings for Type N Control Stations

	Volts AC				Volts DC		
Description	**110**	**220**	**440**	**550**	**120**	**240**	**600**
Make and emergency interrupt capacity	30	15	7.5	6	1.0	0.5	0.1
Normal load break	3	1.5	0.75	0.6	1.0	0.5	0.1
Continuous current	10	10	10	10	10	10	10

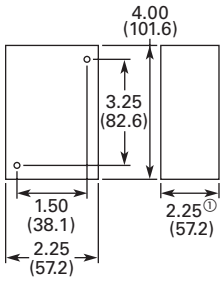
Maximum Ampere Ratings for Type H Control Stations

	Volts AC 50/60 Hz				Volts DC	
Description	**120**	**240**	**480**	**600**	**125**	**250**
Make and emergency interrupt capacity	60	30	15	12	1.1	0.55
Normal load break	6	3	1.5	1.2	1.1	0.55
Continuous amperes	10	10	10	10	10	10
Voltamperes —						
Make and emergency interrupt capacity	7200	7200	7200	7200	138	138
Normal load break	720	720	720	720	138	138

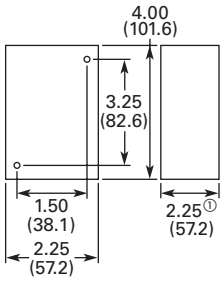
Dimensions

Approximate Dimensions in Inches (mm)

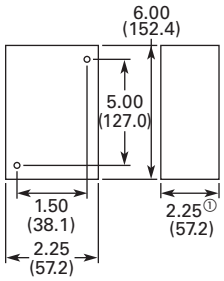
Type N Control Stations



Single Button Station

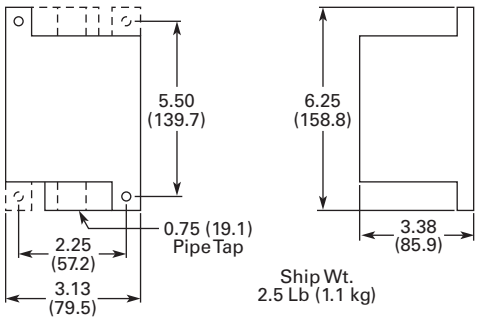


Two Button Station



Three Button Station

Special Purpose Control Stations



Note

① 2.38 (60.5) for neon indicating light.

Approximate Dimensions in Inches (mm)

Type H Control Stations

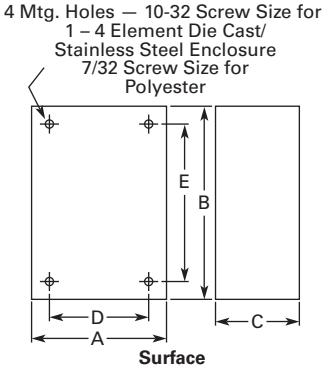
NEMA Type 3, 3R, 3S, 4, 4X, 13

No. of Elements	Dimensions Wide	High	Deep
1 and 2	4.50 (114.3)	8.25 (209.6)	4.50 (114.3)
3	4.50 (114.3)	10.75 (273.1)	4.25 (108.0)

10250T and E34

Approximate Enclosure Dimensions

Number of Elements	Surface Mounting Dimensions in In (mm) Wide A	High B	Deep C	Mounting D	E	Conduit Entrance
Cast						
1	3.88 (98.6)	4.00 (101.6)	3.00 (76.3)	2.69 (68.3)	3.25 (82.6)	3/4
2	3.88 (98.6)	5.88 (149.4)	3.00 (76.3)	2.69 (68.3)	5.13 (130.3)	3/4
3	3.88 (98.6)	7.75 (196.9)	3.00 (76.3)	2.69 (68.3)	7.00 (177.8)	1
4	33.88 (98.6)	9.63 (244.6)	3.00 (76.3)	2.69 (68.3)	8.88 (225.6)	1
Polyester						
1	3.81 (96.8)	6.63 (168.4)	3.38 (85.9)	2.94 (74.7)	4.88 (124.0)	①
2	3.81 (96.8)	6.63 (168.4)	3.38 (85.9)	2.94 (74.7)	4.88 (124.0)	①
3	3.81 (96.8)	8.88 (225.6)	3.38 (85.9)	2.94 (74.7)	7.13 (181.1)	①
4	3.81 (96.8)	6.63 (168.4)	3.38 (85.9)	2.94 (74.7)	4.88 (124.0)	①
Stainless Steel						
1	3.00 (76.2)	3.50 (88.9)	3.00 (76.2)	1.50 (38.1)	4.25 (108.0)	①
2	3.50 (88.9)	6.75 (171.5)	3.00 (76.2)	1.50 (38.1)	7.50 (190.5)	①
3	3.50 (88.9)	9.00 (228.6)	3.00 (76.2)	1.50 (38.1)	9.00 (228.6)	①
4	3.50 (88.9)	11.25 (285.8)	3.00 (76.2)	1.50 (38.1)	12.00 (304.8)	①



Note

① No conduit entrance holes provided. Drill as required.

16.2 mm Pushbuttons—RMQ-16

Contents

Description	*Page*
16.2 mm Pushbuttons—RMQ-16	
Product Selection Guide	**V7-T1-31**
Pushbuttons—Non-Illuminated and Illuminated	**V7-T1-32**
Indicating Lights	**V7-T1-34**
Emergency Stops	**V7-T1-35**
Selector Switches—Non-Illuminated, Illuminated and Keyed	**V7-T1-36**
Accessories	**V7-T1-40**
Technical Data and Specifications	**V7-T1-43**
Dimensions	**V7-T1-45**

Product Overview

Product Description

The RMQ-16 pushbutton line offers a wide array of functional and attractively designed illuminated and non-illuminated pushbuttons, selector switches, emergency stops and indicating lights. The illuminated line is offered with either incandescent or LED. RMQ-16 devices are designed with two front-of-panel operator sizes. The 18 x 18 mm or 25 x 25 mm square operators can help the user achieve over three times the information density compared with 22 mm ranges.

Features

- *Wide product breadth*: RMQ-16 offers illuminated and non-illuminated pushbuttons, keyed, non-keyed, and illuminated selector switches, emergency stops, and a large variety of accessories
- *Custom laser etching*: Hundreds of standard markings available in addition to infinite possible custom images with laser etching
- *High durability*: Pushbuttons and selector switches rated for 3 million mechanical operations
- *High information density*: Square operators (18 mm or 25 mm) allow for side-by-side mounting and achieve over three times the information density of typical 22 mm installations
- Laser etched operators
- Heavy-duty construction with IP65 on front of panel operators
- LED or incandescent illumination available
- Front-of-panel operators available in either 18 x 18 mm or 25 x 25 mm sizes
- Safety rated emergency stops (IEC 60947-5, positively driven contacts)
- Mounting diameter 16.2 mm to EN 50007

Standards and Certifications

- UL Listed
- CSA Certified
- IEC/EN 60947-5 VDE-0660
- IP65

Product Selection Guide

Pushbuttons

Description	Non-Illuminated	Illuminated
Product Selection	**Page V7-T1-32**	**Page V7-T1-33**

Indicating Lights

Description	Flush	Extended
Product Selection	**Page V7-T1-34**	**Page V7-T1-34**

Emergency Stops

Description	Non-Illuminated	Illuminated
Product Selection	**Page V7-T1-35**	**Page V7-T1-35**

Selector Switches

Description	Non-Illuminated	Illuminated	Keyed
Product Selection	**Page V7-T1-36**	**Page V7-T1-37**	**Page V7-T1-38**

1

Pushbuttons—Non-Illuminated and Illuminated

Catalog Number Selection

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

Pushbuttons—Non-Illuminated and Illuminated

Q 18 – DR – BL / WB

Face Plate	Operator Type	Button Plate	Bulb
18 = 18 x 18 mm **25** = 25 x 25 mm	**D** = Non-illuminated momentary **DR** = Non-illuminated maintained **LT** = Illuminated momentary **LTR** = Illuminated maintained	**GN** = Green **RT** = Red **SW** = Black **WS** = White **BL** = Blue **GE** = Yellow **X** = Without	**WB** = With incandescent bulb 24V

Product Selection

Non-Illuminated Pushbuttons

- Momentary or maintained
- Customizable laser etched pushbutton operators
- 18 mm or 25 mm square operator
- 3 million mechanical operations
- IEC/EN 60947-5
- IP65

Q18-D-GN

Non-Illuminated Pushbuttons

Type	Button Color	Catalog Number 18 x 18 mm	Catalog Number 25 x 25 mm
Momentary	Green	**Q18D-GN**	**Q25D-GN**
	Red	**Q18D-RT**	**Q25D-RT**
	Black	**Q18D-SW**	**Q25D-SW**
	White	**Q18D-WS**	**Q25D-WS**
	Blue	**Q18D-BL**	**Q25D-BL**
	Yellow	**Q18D-GE**	**Q25D-GE**
	Without	**Q18D-X** ①	**Q25D-X** ①
Maintained	Green	**Q18DR-GN**	**Q25DR-GN**
	Red	**Q18DR-RT**	**Q25DR-RT**
	Black	**Q18DR-SW**	**Q25DR-SW**
	White	**Q18DR-WS**	**Q25DR-WS**
	Blue	**Q18DR-BL**	**Q25DR-BL**
	Yellow	**Q18DR-GE**	**Q25DR-GE**
	Without	**Q18DR-X** ①	**Q25DR-X** ①

Note

① To order separate button plates, see **Page V7-T1-42**.

Illuminated Pushbuttons

- Momentary or maintained
- LED or incandescent
- 18 mm or 25 mm square operator
- 3 million mechanical operations
- IEC/EN 60947-5
- IP65

Q18-LT-GE

Illuminated Pushbuttons Without Bulb ①

Type	Button Color	Catalog Number ② 18 x 18 mm	25 x 25 mm
Momentary	Green	**Q18LT-GN**	**Q25LT-GN**
	Red	**Q18LT-RT**	**Q25LT-RT**
	Black	**Q18LT-SW**	**Q25LT-SW**
	White	**Q18LT-WS**	**Q25LT-WS**
	Blue	**Q18LT-BL**	**Q25LT-BL**
	Yellow	**Q18LT-GE**	**Q25LT-GE**
Maintained	Green	**Q18LTR-GN**	**Q25LTR-GN**
	Red	**Q18LTR-RT**	**Q25LTR-RT**
	Black	**Q18LTR-SW**	**Q25LTR-SW**
	White	**Q18LTR-WS**	**Q25LTR-WS**
	Blue	**Q18LTR-BL**	**Q25LTR-BL**
	Yellow	**Q18LTR-GE**	**Q25LTR-GE**

Notes

① To order with incandescent 24V bulb, insert a **/WB** at the end of the catalog number. Example, Q18LT-GN**/WB**.

② For a complete selection of incandescent 24V bulbs and LEDs, see **Page V7-T1-40**.

1

Indicating Lights

Catalog Number Selection

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

Indicating Lights—Flush and Extended

Q 18 – LF – WS / WB

Face Plate	Bezel	Button Plate	Bulb
18 = 18 x 18 mm **25** = 25 x 25 mm	**LF** = Flush indicator light **LH** = Extended indicator light	**GN** = Green **RT** = Red **WS** = White **BL** = Blue **GE** = Yellow	**WB** = With incandescent bulb 24V

Product Selection

Indicating Lights

- LED or incandescent
- Flush and extended lenses
- 18 mm or 25 mm square operator
- 3 million mechanical operations
- IEC/EN 60947-5
- IP65

Indicating Lights Without Bulb ①

Q18-LF-GE

Q18-LH-BL

Type	Button Color	Catalog Number ② 18 x 18 mm	25 x 25 mm
Flush	Green	**Q18LF-GN**	**Q25LF-GN**
	Red	**Q18LF-RT**	**Q25LF-RT**
	White	**Q18LF-WS**	**Q25LF-WS**
	Blue	**Q18LF-BL**	**Q25LF-BL**
	Yellow	**Q18LF-GE**	**Q25LF-GE**
Extended.	Green	**Q18LH-GN**	**Q25LH-GN**
	Red	**Q18LH-RT**	**Q25LH-RT**
	White	**Q18LH-WS**	**Q25LH-WS**
	Blue	**Q18LH-BL**	**Q25LH-BL**
	Yellow	**Q18LH-GE**	**Q25LH-GE**

Notes

① To order with incandescent 24V bulb, insert a **/WB** at the end of the catalog number. Example, Q18-LF-GN**/WB**.

② For a complete selection of incandescent 24V bulbs and LEDs, see **Page V7-T1-40**.

Emergency Stops

Catalog Number Selection

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

Emergency Stops—Non-Illuminated and Illuminated

Q 25 – LPV – S

Face Plate	Operator Type	Color
25 = 25 x 25 mm	**PV** = Emergency stop **LPV** = Emergency stop (illuminated)	**Blank** = Red **S** = Black

Product Selection

Emergency Stops

- Push/pull operation
- Illuminated or non-illuminated
- Emergency stop (red) or Machine stop (black) available
- Suitable for use in safety applications
- IEC/EN 60947-5
- IP65

Q25PV

Emergency Stops—Non-Illuminated

Button Color	Catalog Number 25 x 25 mm
Red	**Q25PV**
Black	**Q25PV-S**

Q25LPV

Emergency Stops—Illuminated ①

Button Color	Catalog Number 25 x 25 mm
Red	**Q25LPV**
Black	**Q25LPV-S**

Note

① Includes built-in multiple LED 24 Vdc.

1

Selector Switches—Non-Illuminated, Illuminated and Keyed

Catalog Number Selection

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

Selector Switches—Non-Illuminated

Q 18 – WK1R

Face Plate
18 = 18 x 18 mm
25 = 25 x 25 mm

Selector Positions
WK1 = Two positions momentary
WK3 = Three positions momentary
WK1R = Two positions maintained
WK3R = Three positions maintained
WK3R1 = Three positions maintained/momentary
WK3R2 = Three positions momentary/maintained

Product Selection

Non-Illuminated Selector Switches

- Momentary or maintained
- 18 mm or 25 mm square operator
- VS Anti-rotation feature
- 3 million mechanical operations
- IP65

Q18WK1

Selector Switches—Non-Illuminated

Function	Position	Switch Position	Catalog Number 18 x 18 mm	Catalog Number 25 x 25 mm
Momentary	2		**Q18WK1**	**Q25WK1**
Maintained			**Q18WK1R**	**Q25WK1R**
Momentary	3		**Q18WK3**	**Q25WK3**
Maintained			**Q18WK3R**	**Q25WK3R**
Maintained/momentary			**Q18WK3R1**	**Q25WK3R1**
Momentary/maintained			**Q18WK3R2**	**Q25WK3R2**

Catalog Number Selection

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

Selector Switches—Illuminated

Q 18 – LWK1 – WS / WB

Face Plate
18 = 18 x 18 mm
25 = 25 x 25 mm

Switch Positions
LWK1 = Two positions momentary
LWK3 = Three positions momentary
LWK1R = Two positions maintained
LWK3R = Three positions maintained
LWK3R1 = Three positions maintained/momentary
LWK3R2 = Three positions momentary/maintained

Button Plate	
GN = Green	**WS** = White
RT = Red	

Bulb
WB = With incandescent bulb 24V

Product Selection

Illuminated Selector Switches

- LED or incandescent
- Momentary or maintained
- 18 mm or 25 mm square operator
- VS Anti-rotation feature
- 3 million mechanical operations
- IP65

Q18LWK1-GN

Selector Switches—Illuminated without Bulb ①

Function	Position	Button Color	Switch Position	Catalog Number ② 18 x 18 mm	25 x 25 mm
Momentary	2	Green		**Q18LWK1-GN**	**Q25LWK1-GN**
		Red		**Q18LWK1-RT**	**Q25LWK1-RT**
		White		**Q18LWK1-WS**	**Q25LWK1-WS**
Maintained		Green		**Q18LWK1R-GN**	**Q25LWK1R-GN**
		Red		**Q18LWK1R-RT**	**Q25LWK1R-RT**
		White		**Q18LWK1R-WS**	**Q25LWK1R-WS**
Momentary	3	Green		**Q18LWK3-GN**	**Q25LWK3-GN**
		Red		**Q18LWK3-RT**	**Q25LWK3-RT**
		White		**Q18LWK3-WS**	**Q25LWK3-WS**
Maintained		Green		**Q18LWK3R-GN**	**Q25LWK3R-GN**
		Red		**Q18LWK3R-RT**	**Q25LWK3R-RT**
		White		**Q18LWK3R-WS**	**Q25LWK3R-WS**
Maintained/ momentary		Green		**Q18LWK3R1-GN**	**Q25LWK3R1-GN**
		Red		**Q18LWK3R1-RT**	**Q25LWK3R1-RT**
		White		**Q18LWK3R1-WS**	**Q25LWK3R1-WS**
Momentary/ maintained		Green		**Q18LWK3R2-GN**	**Q25LWK3R2-GN**
		Red		**Q18LWK3R2-RT**	**Q25LWK3R2-RT**
		White		**Q18LWK3R2-WS**	**Q25LWK3R2-WS**

Notes

① To order with incandescent 24V bulb, insert a **/WB** at the end of the catalog number. Example, Q18LWK1-GN**/WB**.

② For a complete selection of incandescent 24V bulbs and LEDs, see **Page V7-T1-40**.

1

Catalog Number Selection

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

Keyed Selector Switches—Two- and Three-Position

Q 18 – S1 – A1 – WS

Face Plate	Switch Positions	Key Code	Color
18 = 18 x 18 mm **25** = 25 x 25 mm	**S1** = Two positions momentary **S1R** = Two positions maintained **S3** = Three positions momentary **S3R** = Three positions maintained	**A1**–**A7** = Switch and key removal positions (detailed below)	**GN** = Green **RT** = Red **SW** = Black **WS** = White **BL** = Blue

Product Selection

Keyed Selector Switches

- 5 color options
- Momentary or maintained
- 18 mm or 25 mm square operator
- VS Anti-rotation feature
- 3 million mechanical operations
- IP65

Q18S1

Keyed Selector Switches—Two-Position

Function	Button Color	Switch Position	Key Removal Position ①	Catalog Number 18 x 18 mm	25 x 25 mm
Momentary	Black		0	**Q18S1**	**Q25S1**
Maintained	Black		0	**Q18S1R**	**Q25S1R**
Maintained	Black		0	**Q18S1R-A1**	**Q25S1R-A1**

Keyed Selector Switches—Three-Position

Function	Button Color	Switch Position	Key Removal Position ①	Catalog Number 18 x 18 mm	25 x 25 mm
Momentary	Black		0	**Q18S3**	**Q25S3**
Maintained			0, II	**Q18S3R**	**Q25S3R**
Maintained			0	**Q18S3R-A1**	**Q25S3R-A1**
			I, 0	**Q18S3R-A2**	**Q25S3R-A2**
			0, II	**Q18S3R-A3**	**Q25S3R-A3**
Maintained/ momentary			I, 0	**Q18S3R-A4**	**Q25S3R-A4**
			0	**Q18S3R-A5**	**Q25S3R-A5**
Momentary/ maintained			0, II	**Q18S3R-A6**	**Q25S3R-A6**
			0	**Q18S3R-A7**	**Q25S3R-A7**

Note

① I = Key is removed at the left.
0 = Key is removed at the center.
II = Key is removed at the right.

Q18S1-BL

Keyed Selector Switches, Multicolor—Two-Position

Function	Button Color	Switch Position	Key Removal Position ①	Catalog Number 18 x 18 mm	25 x 25 mm
Momentary	Green		0	**Q18S1-GN**	**Q25S1-GN**
	Red			**Q18S1-RT**	**Q25S1-RT**
	White			**Q18S1-WS**	**Q25S1-WS**
	Blue			**Q18S1-BL**	**Q25S1-BL**
Maintained	Green		0	**Q18S1R-GN**	**Q25S1R-GN**
	Red			**Q18S1R-RT**	**Q25S1R-RT**
	White			**Q18S1R-WS**	**Q25S1R-WS**
	Blue			**Q18S1R-BL**	**Q25S1R-BL**

Q18S3-RT

Keyed Selector Switches, Multicolor—Three-Position

Function	Button Color	Switch Position	Key Removal Position ①	Catalog Number 18 x 18 mm	25 x 25 mm
Momentary	Green		0	**Q18S3-GN**	**Q25S3-GN**
	Red			**Q18S3-RT**	**Q25S3-RT**
	White			**Q18S3-WS**	**Q25S3-WS**
	Blue			**Q18S3-BL**	**Q25S3-BL**
Maintained	Green		0, II	**Q18S3R-GN**	**Q25S3R-GN**
	Red			**Q18S3R-RT**	**Q25S3R-RT**
	White			**Q18S3R-WS**	**Q25S3R-WS**
	Blue			**Q18S3R-BL**	**Q25S3R-BL**

Note

① I = Key is removed at the left.
0 = Key is removed at the center.
II = Key is removed at the right.

1

Accessories

Contact Elements

E10

Feature	Catalog Number
Normally open (N/O)	**E10**

E01

Feature	Catalog Number
Normally closed (N/C)	**E01**

Screw Adapter

SRA10

Feature	Catalog Number
Normally open (N/O)	**SRA10**
Normally closed (N/C)	**SRA01**
Lamp sockets	**SRAL**

Incandescent 24V Bulbs

WBGL6

Voltage	Current	Color	Catalog Number
6V	1W	White	**WBGL6**
12V			**WBGL12**
24–28V			**WBGL24**

LEDs (AC/DC)

WBLED-GN6

Voltage	Current	Color	Catalog Number
Multiple Chip LED			
6V	45 mA	Green	**WBLED-GN6**
12V	24 mA		**WBLED-GN12**
6V	45 mA	Red	**WBLED-RT6**
12V	24 mA		**WBLED-RT12**
6V	45 mA	Yellow	**WBGLED-GE6**
12V	24 mA		**WBGLED-GE12**
Single Chip LED ①			
18–30V	7–12.5 mA	Green	**LEDWB-G**
		Red	**LEDWB-R**
		White	**LEDWB-W**
		Blue	**LEDWB-B**
		Yellow	**LEDWB-Y**

Insulated Ferrule

ISH2,8

Description	Catalog Number
Insulated ferrule	**ISH2,8**

Combination Box Spanner

R16-MS

Description	Catalog Number
Mounting ring tool	**16-MS**

Anti-Rotation Tab

VS

Description	Catalog Number
Guard ring	**VS**

Housing

E8-SW

Description	Color	Catalog Number
Surface mount enclosure	White	**I8**
Flush mount panel	White	**E8**
	Black	**E8-SW**

Blanking Plug

Q18BS

Size	Catalog Number
18 x 18 mm	**Q18BS**
25 x 25 mm	**Q25BS**

Cover Plate

Q25AGR

Size	Color	Catalog Number
25 x 38 mm	Black	**Q25AS**
	Gray	**Q25AGR**

Note

① Positive pole to X1. Integral suppressor circuit up to 1000V.

02SQ25

Insert Plate

Size		Catalog Number
10 x 22 mm	BLANK	**02SQ25**

Q25TS-X

Legend Plate

Size	Color	Catalog Number
25 x 38 mm	Black	**Q25TS-X**
	Gray	**Q25TGR-X**

Q25TS_

Legend Plate—Complete

Size	Etching	Catalog Number
25 x 38	START	**Q25TS-111**
	STOP	**Q25TS-110**
	FAULT	**Q25TS-250**
	HAND 0 AUTO	**Q25TS-197**
	MAN 0 AUTO	**Q25TS-397**
	0	**Q25TS-10**
	I	**Q25TS-11**
	0 I	**Q25TS-90**
	I 0 II	**Q25TS-93**

SQT11

SRT11

Emergency Stop Labels

Type	Feature	Catalog Number
Square	4 Languages	**SQT11**
	Blank	**SQT-GE**
Circle	4 Languages	**SRT11**
	Blank	**SRT-GE**

Extra Keys

ES16

Codes for Extra Keys

Color	Catalog Number
Green	**ES16-GN**
Red	**ES16-RT**
Black	**ES16**
White	**ES16-WS**
Blue	**ES16-BL**

1

Button Plates

Button Plates

Type	Color	Etching	Catalog Number
18 x 18 mm	Black	—	**01TQ18**
		CUSTOM	**01TQ18-ETCH**
		I	**21TQ18**
		O	**19TQ18**
	White	—	**02TQ18**
		CUSTOM	**02TQ18-ETCH**
		I	**20TQ18**
	Green	—	**03TQ18**
		CUSTOM	**03TQ18-ETCH**
		I	**11TQ18**
	Red	—	**04TQ18**
		CUSTOM	**04TQ18-ETCH**
		O	**10TQ18**
	Yellow	—	**05TQ18**
		CUSTOM	**05TQ18-ETCH**
	Blue	—	**06TQ18**
		CUSTOM	**06TQ18-ETCH**

Type	Color	Etching	Catalog Number
25 x 25 mm	Black	—	**01TQ25**
		CUSTOM	**01TQ25-ETCH**
		I	**21TQ25**
		O	**19TQ25**
		"STOP"	**112TQ25**
		"ON"	**221TQ25**
	White	—	**02TQ25**
		CUSTOM	**02TQ25-ETCH**
		I	**20TQ25**
	Green	—	**03TQ25**
		CUSTOM	**03TQ25-ETCH**
		"START"	**111TQ25**
		I	**11TQ25**
	Red	—	**04TQ25**
		CUSTOM	**04TQ25-ETCH**
		"STOP"	**110TQ25**
		O	**10TQ25**
		"OFF"	**217TQ25**
	Yellow	—	**05TQ25**
		CUSTOM	**05TQ25-ETCH**
	Blue	—	**06TQ25**
		CUSTOM	**06TQ25-ETCH**

Instructions for Ordering Laser Inscriptions

1. Identify part number to be inscribed.
2. Pick symbol from library and identify suffix code associated with the symbol.
3. Order part number already listed in the catalog with -ETCH suffix.
4. When placing an order by fax or Vistaline on the web, reference order item number and indicate appropriate symbol code or desired text.

Example

To order a 25 mm green flush button plate with the inscription AUTO HAND:

Order Catalog Number **03TQ25-ETCH**.
AUTO HAND inscription is found on **Page V7-T1-133** in the M22 Symbols Library, suffix code is **X91**.
In the order notes, reference item number and suffix **X91**.

Note: For a complete list of available symbols, see **Pages V7-T1-130** to **V7-T1-136**, M22 Symbols Library.

Technical Data and Specifications

RMQ-16

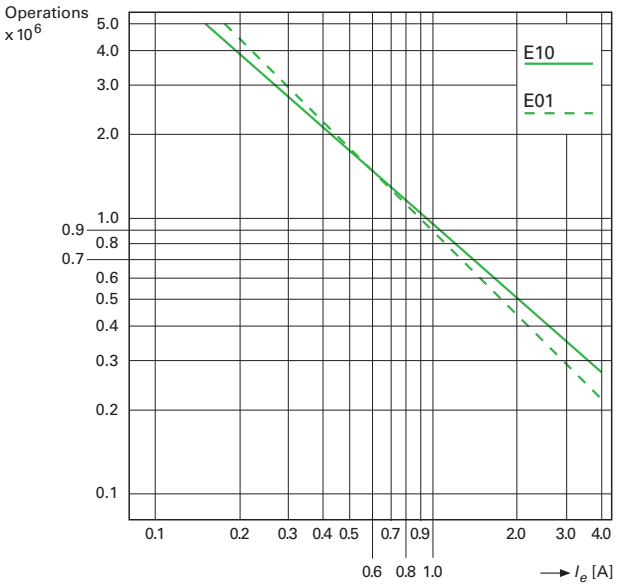
Description	Unit	Specification Contact Elements	Illuminated Pushbutton Operators (Maintained)	Illuminated Selector Switches	Indicating Lights
General Technical Data					
Standards			UL, CSA, IEC/EN 60 947, VDE 0660, CE		
Lifespan, mechanical (operations)	x 10^5	100	30 (3)	3	—
Maximum operating frequency	Ops/h	3600	3600 (1800)	1800	—
Operating force	N	3	4	—	—
Operating torque	Nm		—	≦0.2	—
Degree of protection to IEC/EN 60 529		IP20 with ISH2,8	IP65	IP65	IP65
Climatic proofing			Damp heat, constant, to IEC 60 068-2-3/Damp heat, cyclical, to IEC 60 068-2-30		
Ambient temperature					
Open	°C	–25 to 60	–25 to 60	–25 to 60	–25 to 60
Enclosed	°C	–25 to 40	–25 to 40	–25 to 40	–25 to 40
Mounting position		As required	As required	As required	As required
Mechanical shock resistance to IEC 60 068-2-27 (half-sinusoidal shock, duration 11 ms)	g	40	40	40	40
Terminal capacity (min./max.)	mm^2	0.5/1.0	0.5/1.0	0.5/1.0	0.5/1.0
Blade terminal			2.8 mm x 0.8 mm to DIN 46 244		
Ferrule			2.8 mm x 0.8 mm to DIN 46 247 and IEC 60 760		
Dimensions		See **Page V7-T1-45**	See **Page V7-T1-45**	See **Page V7-T1-45**	See **Page V7-T1-45**
Contacts					
Rated impulse withstand voltage U_{imp}	V	4000	800	800	800
Rated insulation voltage U_i	V	250	250	250	250
Overvoltage category/pollution degree		III/3	III/3	III/3	III/3
Rated operational voltage U_e (max.)	V	250	24	24	24
Rated operational current I_e (max.)	A	4	—	—	—
Control circuit reliability at					
24 Vdc/5 mA (Fault probability Hr)			$<10^{-7}$, <1 fault in 10^7 operations		
5 Vdc/1 mA (Fault probability Hr)			$<5 \times 10^{-6}$, < fault in 5×10^6 operations		
Use of insulated ferrule ISH 2.8					
From U_e		>24 Vac/dc recommended	>24 Vac/dc recommended	>24 Vac/dc recommended	>24 Vac/dc recommended
From U_e			>50 Vac or 120 Vdc is mandatory, even on unused blade terminals		
Maximum short-circuit protective device					
Fuseless	Type	FAZ-B6	—	—	—
Fuse	A gG/gL	10	—	—	—
Switching Capacity					
Rated operational current I_e					
AC-15					
24V	A	4	—	—	—
48V	A	4	—	—	—
110V	A	4	—	—	—
230V	A	4	—	—	—
DC-13					
24V	A	3	—	—	—
42V	A	1.0	—	—	—
60V	A	0.8	—	—	—
110V	A	0.5	—	—	—
220V	A	0.2	—	—	—
UL/CSA Data			UL listed File No. E 29 184, Guide No. NKCR/CSA certified File No. 46 552 Class No. 321103		
Blade terminal		0.110 x 0.032 in	0.110 x 0.032 in	0.110 x 0.032 in	0.110 x 0.032 in
Fast-on connector			0.110 x 0.032 in AMP #60 197-1, 62 050-1 or equivalent		
Rated voltage maximum AC	Vac	300	24	24	24
Contact rating code AC		E10/E01	C300/Q300	—	—	—
Thermal continuous test current	A	2.5	—	—	—
Rated voltage maximum DC	Vdc	300	—	—	—
Contact rating code DC		E10/E01	C300/R300	—	—	—
Thermal continuous test current	A	2.5	—	—	—

RMQ-16, continued

Description	Unit	Specification Pushbutton Operators (Maintained)	Selector Switches	Key-Released Operators	Emergency Stop Operators	Emergency Stop Operators (Illuminated) ①
General Technical Data						
Standards				UL, CSA, IEC/EN 60 947, VDE 0660, CE		
Lifespan, mechanical (operations)	x 10^5	30 (3)	3	3	0.5	0.5
Maximum operating frequency	Ops/h	3600 (1800)	1800	1800	600	600
Operating force	N	4	—	—	25	25
Operating torque	Nm	—	≦ 0.2	≦ 0.4	—	—
Degree of protection to IEC/EN 60 529		IP65	IP65	IP65	IP65	IP65
Climatic proofing				Damp heat, constant, to IEC 60 068-2-3 Damp heat, cyclical, to IEC 60 068-2-30		
Ambient temperature						
Open	°C	–25 to 60	–25 to 60	–25 to 60	–25 to 60	–25 to 60
Enclosed	°C	–25 to 40	–25 to 40	–25 to 40	–25 to 40	–25 to 40
Mounting position		As required	As required	As required	As required	As required
Mechanical shock resistance to IEC 60 068-2-27 (half-sinusoidal shock, duration 11 ms)	g	40	40	40	40	40
Terminal capacity (min./max.)	mm^2	—	—	—	—	0.5/1.0
Blade terminal		—	—	—	—	2.8 x 0.8 mm
Ferrule		—	—	—	—	2.8 x 0.8 mm
Dimensions		See **Page V7-T1-45**	See **Page V7-T1-45**	See **Page V7-T1-45**	See **Page V7-T1-45**	See **Page V7-T1-45**

Lifespan, Electrical AC-15 to IEC/EN 60 947-5-1 at 230V

I_e = Rated operational current



Note

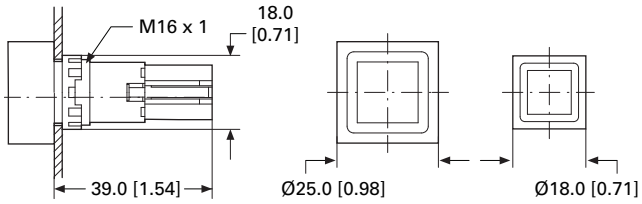
① See illuminated selector switches on **Page V7-T1-37** for contact values.

Dimensions

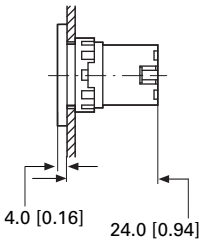
Approximate Dimensions in mm [in]

Actuating and Indicator Elements

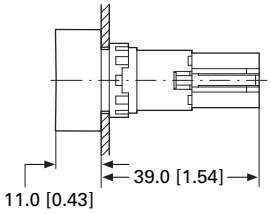
Square Style



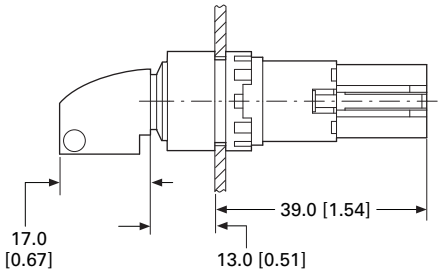
Q...BS



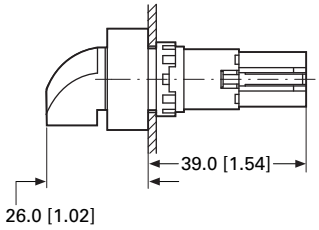
Q...D-_, Q...DR-_



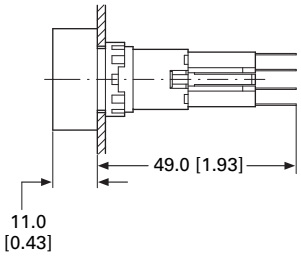
Q...S_



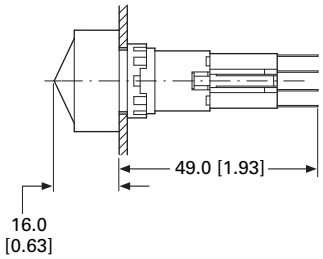
Q...WK_



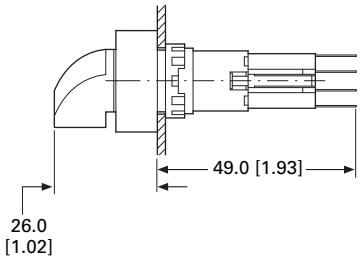
Q...LT-_, Q...LTR-_, Q...LF-_



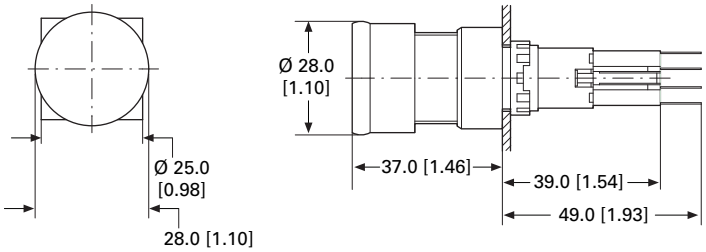
Q...LH-_



Q...LWK_



Q25PV_, Q25LPV_

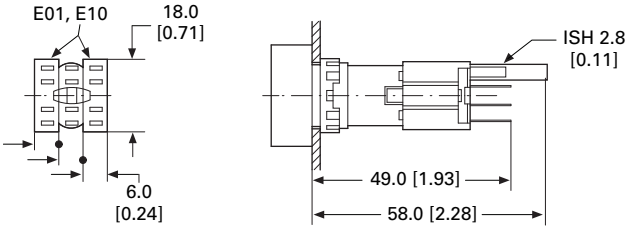


1

Approximate Dimensions in mm [in]

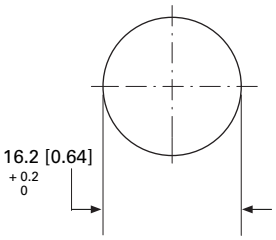
Front Fixing

Q18, Q25, E89, SRA, VS, M16



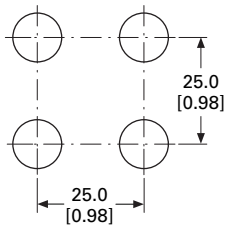
Drilling Dimensions

Drilling



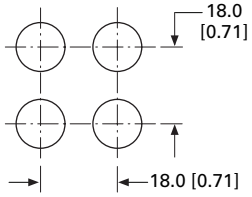
Grid Dimension to IEC/EN 60947

Q25



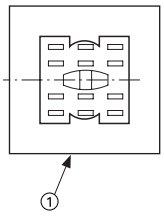
Minimum Grid Spacing Dimension

Q18



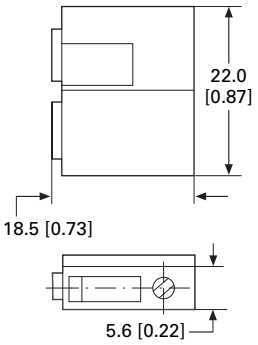
Mounting Distance

Mounting



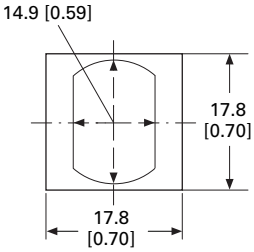
RMQ Screw Adapter

SRA_



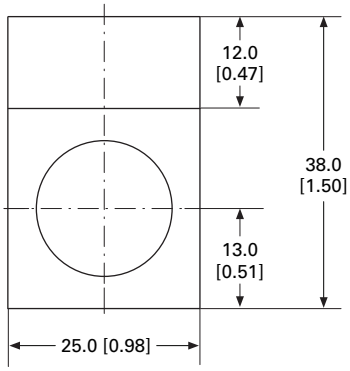
Anti-Rotation Feature

VS



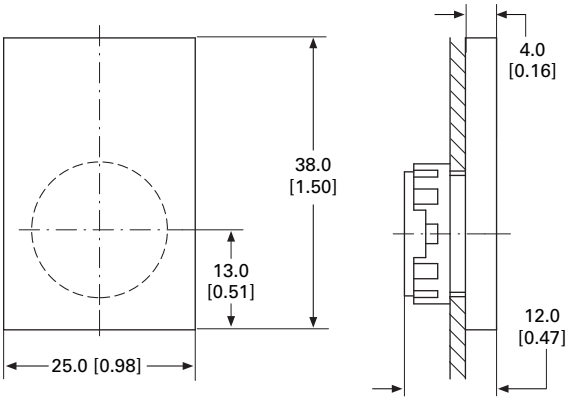
RMQ-16 Label Mount

Q25TS-_



Blanking Plates

Q25AS



Note

① Exposed conductive part (metal).

22.5 mm RMQ-Titan Modular Pushbuttons—M22

Contents

Description	*Page*
22.5 mm RMQ-Titan Modular Pushbuttons—M22	
Product Selection Guide	**V7-T1-48**
Accessories	**V7-T1-111**
Coding Adapter Guide	**V7-T1-118**
Technical Data and Specifications	**V7-T1-119**
Dimensions	**V7-T1-123**
Symbols Library	**V7-T1-129**

Drawings Online

Product Description

Eaton's M22 industrial heavy-duty pushbutton line offers a wide array of functional, attractive and ergonomically designed illuminated and non-illuminated pushbuttons, selector switches, push-pulls, alternate action and twist-to-release operators. The complete illuminated line is only offered in LED light units to ensure high-quality brightness and up to 100,000 hours of LED illumination. M22 operators are available with either a silver or black nylon colored or chrome metal bezel. The space-saving modular construction of the M22 line makes on-the-job assembly fast and simplifies the stocking of both components and complete devices.

NEW

Eaton has expanded M22 pilot devices with a metal bezel option. The new M22M pushbutton is an elegant chrome metal bezel that is attractive, durable and rugged for heavy-duty environments. M22M devices are configurable and complement components within the M22 line.

Highly Modular and Versatile Line

- Field convertible functions (pushbuttons and selector switches), maintained to momentary
- Customizable laser engraving capabilities

LED Indicators

- 100,000 hours of life in high-vibration environments
- Lenses specifically designed for LED illumination
- Multi-color LED in the flat contact family allows versatility in design and reduces installation costs and footprint

Rugged Design

- Most pushbutton operators and contact blocks exceed 5 million mechanical operations
- All components have IP66 rating, and some carry IP67 and IP69K for washdown environment; see **Page V7-T1-119** for further technical data

Innovative Technologies

- ASi communicating devices
- Palm switches

Standards and Certifications

All operators and components are IEC/EN 60947 VDE 0660.

All operators carry an IP66 rating with some rated for washdown environment with IP67 and IP69K.

All pushbuttons, emergency-stops, indicating lights, potentiometers and selector switches carry NEMA 4X, 13.

Marine classification societies: Bureau Veritas (BV), Germanischer Lloyd (GL), and Lloyd's Register of Shipping (LR) approved.

22.5mm 22.5 mm RMQ-Titan Modular Pushbuttons—M22

Features

- Field convertible pushbuttons and mushroom operators from maintained to momentary status
- Field convertible selector switches from momentary to maintained operation and vice versa
- LED offering only for all illuminated operators
- Laser engraved pushbuttons, lenses and enclosures
- Heavy-duty construction with a minimum of IP66 and UL NEMA® type 4X / 13 on front of panel operators. Many operators even carry IP67 and IP69K, for the toughest applications
- Silver, black or chrome metal bezel now available
- Snap-lock contact blocks and light units for front or base mounting
- Notched hole mounting with anti-rotation tab and central nut mounting on each operator
- Over 5 million mechanical operations and 1.6 million electrical (reference specification sheet)
- Direct opening action normally closed contacts
- Unique and innovative offerings, such as four-way pushbuttons and USB/RJ45 bulkhead interfaces
- Screw or spring-cage terminals

Benefits

- Modular construction makes assembly fast and simplifies stocking of components and complete devices
- Field convertibility of operator status for pushbuttons and selector switches helps distributors and customers reduce inventory and increase functionality
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- Plastic construction is corrosion resistant. Operators are designed for rugged environments, ideal for washdown applications (reference each operator's IP ratings and IEC/EN 60529 for ingress protection definition)
- Anti-rotation tab saves installation time and prevents operator rotation
- High mechanical and electrical life allows for use in tough and challenging applications
- Laser inscription capabilities allow for high-quality, wear-resistant markings
- All normally closed (NC) contacts are direct opening action, i.e., NC contacts are physically forced open by direct linkage with the pushbutton operator in the unlikely event of contact weld
- Some M22 operators are capable of communication via ASi protocol
- M22 offers USB and RJ45 connections

Product Selection Guide

Pushbuttons

Description	Non-illuminated, flush		Non-illuminated, extended		Illuminated, flush		Illuminated, extended	
Operator	Momentary	Maintained	Momentary	Maintained	Momentary	Maintained	Momentary	Maintained
Product Selection	**Pages V7-T1-53** to **V7-T1-55**	**Pages V7-T1-56, V7-T1-57**	**Pages V7-T1-58, V7-T1-59**	**Pages V7-T1-60, V7-T1-61**	**Pages V7-T1-63** to **V7-T1-65**	**Pages V7-T1-66, V7-T1-67**	**Pages V7-T1-68, V7-T1-69**	**Pages V7-T1-70, V7-T1-71**

Indicating Lights

Description	Flat	Conical
Product Selection	**Pages V7-T1-72, V7-T1-73**	**Pages V7-T1-72, V7-T1-73**

Emergency Stops

Description	Non-illuminated	Illuminated	Key release	Mechanical indication
Product Selection	**Page V7-T1-75**	**Page V7-T1-75**	**Page V7-T1-76**	**Page V7-T1-76**

Selector Switches

Description	Non-illuminated knob type	Non-illuminated rotary type	Illuminated	Key-operated
Product Selection	**Pages V7-T1-80, V7-T1-81**	**Pages V7-T1-82, V7-T1-83**	**Pages V7-T1-85** to **V7-T1-87**	**Pages V7-T1-88** to **V7-T1-91**

Mushroom Head Pushbuttons

Description	Non-illuminated	Non-illuminated
Operator	Momentary	Maintained
Product Selection	**Pages V7-T1-94, V7-T1-95**	**Pages V7-T1-96, V7-T1-97**

Double Pushbuttons

Description	Extended pushbuttons and center light	Flush top and center light, extended bottom	Flush pushbuttons and center light
Operator	Momentary	Momentary	—
Product Selection	**Page V7-T1-99**	**Page V7-T1-100**	**Page V7-T1-100**

Four-Way Pushbuttons

Description	Non-interlocked	Interlocked
Operator	Momentary	Maintained
Product Selection	**Page V7-T1-103**	**Page V7-T1-103**

Joysticks

Description	Joysticks
Product Selection	**Page V7-T1-104**

Potentiometers

Description	Potentiometers
Product Selection	**Page V7-T1-106**

Acoustic Devices

Description	Acoustic devices
Product Selection	**Page V7-T1-106**

Through-the-Door Operators

Description	Through-the-door operators
Product Selection	**Page V7-T1-107**

Bulkhead Interfaces

Description	Bulkhead interfaces
Product Selection	**Page V7-T1-107**

ASi Adapter Modules

Description	ASi adapter modules
Product Selection	**Page V7-T1-108**

Palm Switches

Description	Palm switches
Product Selection	**Page V7-T1-109**

Assembled Control Stations

Description	Assembled control stations
Product Selection	**Page V7-T1-16**

M22-_

Point-of-Purchase Units

Color	Type	Contact Configuration [1]	Catalog Number
Black	Flush momentary	NO/NC	**M22-D-S-K11-P**
Red	Extended momentary	NO/NC	**M22-DH-R-K11-P**
Green	Flush momentary	NO/NC	**M22-D-G-K11-P**
Red	Ext. illuminated (12–30V) momentary	NO/NC	**M22-DLH-R-K11-R-P**
Red	Ext. illuminated (85–264V) momentary	NO/NC	**M22-DLH-R-K11-230R-P**
White	Flush illuminated (12–30V) maintained	NO/NC	**M22-DRL-W-K11-W-P**
White	Flush illuminated (85–264V) maintained	NO/NC	**M22-DRL-W-K11-230W-P**
Red	Indicating light (12–30V)	—	**M22-L-R-R-P**
Green	Indicating light (12–30V)	—	**M22-L-G-G-P**
Red	Indicting light (85–264V)	—	**M22-L-R-230R-P**
Green	Indicating light (85–264 Vac)	—	**M22-L-G-230G-P**
Red	Twist-to-release E-stop	1NO/2NC	**M22-PVT-K12-P**
Red	Illuminated (12–30V) push-pull E-stop	1NO/2NC	**M22-PVL-K12-R-P**
Red	Illuminated (85–264V) push-pull E-stop	1NO/2NC	**M22-PVL-K12-230R-P**
—	Two-position maintained V selector switch	NO/NC	**M22-WKV-K11-P**
—	Three-position momentary selector switch	NO/NC	**M22-WK3-K22-P**

Note

[1] All NC contact blocks are positively driven contact. ⊖

Pushbuttons—Non-Illuminated and Illuminated

Contents

Description	*Page*
Pushbuttons—Non-Illuminated and Illuminated	
Non-Illuminated, Flush, Momentary	**V7-T1-53**
Non-Illuminated, Flush, Maintained	**V7-T1-56**
Non-Illuminated, Extended, Momentary	**V7-T1-58**
Non-Illuminated, Extended, Maintained	**V7-T1-60**
Illuminated, Flush, Momentary	**V7-T1-63**
Illuminated, Flush, Maintained	**V7-T1-66**
Illuminated, Extended, Momentary	**V7-T1-68**
Illuminated, Extended, Maintained	**V7-T1-70**

Pushbuttons—Non-Illuminated and Illuminated

Product Description

Eaton's M22 pushbutton line is a complete, modular and versatile offering. From field-convertible maintained operators to customizable laser engraved buttons, the M22 pushbutton line provides endless opportunity for flexibility and reduced inventory. Each operator type provides options for ordering as complete or component parts allowing for a perfect fit for each application. All of this flexibility comes in a very rugged design.

Features

- Field convertible from maintained to momentary (available on maintained pushbuttons only)
- Customizable laser engraving on all buttons
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- More than five million mechanical operations on momentary and 1 million on maintained pushbuttons
- Modular construction makes assembly fast and simplifies stocking of components and complete devices
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP67, IP69K
- NEMA 4X, 13

Catalog Number Selection

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

Non-Illuminated Pushbuttons

M22 – D – S – X0 – K10

Bezel
- **M22** = Silver
- **M22S** = Black
- **M22M** = Metal

Operator Type
- **D** = Flush momentary
- **DH** = Extended momentary
- **DG** = Flush with guard ①
- **DR** = Flush maintained
- **DGH** = Extended momentary with guard ①
- **DRH** = Extended maintained

Button Plate Color
- **G** = Green
- **Y** = Yellow
- **B** = Blue
- **S** = Black
- **R** = Red
- **W** = White

Inscription
- **GB0** = STOP
- **GB1** = START
- **GB2** = CLOSE
- **GB3** = UP
- **GB4** = DOWN
- **GB5** = OFF
- **GB6** = ON
- **GB14** = RESET
- **GB15** = FORWARD
- **GB16** = REVERSE
- **X0** = ◎
- **X1** = ①
- **X4** = ⊕
- **X5** = ⊖
- **X6** = Ⓡ
- **X7** = ⓣ
- **X8** = ⊘

Contact Blocks
- **K10** = 1NO
- **K01** = 1NC
- **K20** = 2NO
- **K02** = 2NC
- **K11** = 1NO-1NC
- **K30** = 3NO
- **K03** = 3NC
- **K21** = 2NO-1NC
- **K12** = 1NO-2NC

① Silver bezel only.

Product Selection

Non-Illuminated Pushbuttons, Flush, Momentary

M22-D-G-K10

M22S-D-G-K10

M22M-D-G-K10

Complete Devices

Button Color	Contact Block Configuration ①	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	NO	**M22-D-S-K10**	**M22S-D-S-K10**	**M22M-D-S-K10**
	NC	**M22-D-S-K01**	**M22S-D-S-K01**	**M22M-D-S-K01**
	2NO	**M22-D-S-K20**	**M22S-D-S-K20**	**M22M-D-S-K20**
	2NC	**M22-D-S-K02**	**M22S-D-S-K02**	**M22M-D-S-K02**
	1NO-1NC	**M22-D-S-K11**	**M22S-D-S-K11**	**M22M-D-S-K11**
Red	NO	**M22-D-R-K10**	**M22S-D-R-K10**	**M22M-D-R-K10**
	NC	**M22-D-R-K01**	**M22S-D-R-K01**	**M22M-D-R-K01**
	2NO	**M22-D-R-K20**	**M22S-D-R-K20**	**M22M-D-R-K20**
	2NC	**M22-D-R-K02**	**M22S-D-R-K02**	**M22M-D-R-K02**
	1NO-1NC	**M22-D-R-K11**	**M22S-D-R-K11**	**M22M-D-R-K11**
Green	NO	**M22-D-G-K10**	**M22S-D-G-K10**	**M22M-D-G-K10**
	NC	**M22-D-G-K01**	**M22S-D-G-K01**	**M22M-D-G-K01**
	2NO	**M22-D-G-K20**	**M22S-D-G-K20**	**M22M-D-G-K20**
	2NC	**M22-D-G-K02**	**M22S-D-G-K02**	**M22M-D-G-K02**
	1NO-1NC	**M22-D-G-K11**	**M22S-D-G-K11**	**M22M-D-G-K11**

Note

① All NC contact blocks are positively driven contact. ⊖

1

Non-Illuminated Pushbuttons, Flush, Momentary

M22-D-G

M22S-D-G

M22M-D-G

Operators Only ①

Button Color	Inscription	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	—	**M22-D-S**	**M22S-D-S**	**M22M-D-S**
Red	—	**M22-D-R**	**M22S-D-R**	**M22M-D-R**
	STOP	**M22-D-R-GB0**	**M22S-D-R-GB0**	—
	◎	**M22-D-R-X0**	**M22S-D-R-X0**	**M22M-D-R-X0**
Green	—	**M22-D-G**	**M22S-D-G**	**M22M-D-G**
	START	**M22-D-G-GB1**	**M22S-D-G-GB1**	**M22M-D-G-GB1**
	①	**M22-D-G-X1**	**M22S-D-G-X1**	**M22M-D-G-X1**
White	—	**M22-D-W**	**M22S-D-W**	**M22M-D-W**
Blue	—	**M22-D-B**	**M22S-D-B**	**M22M-D-B**
Yellow	—	**M22-D-Y**	**M22S-D-Y**	**M22M-D-Y**
—	—	**M22-D-X-SRG** ②	**M22S-D-X-SRG** ②	**M22M-D-X-SRG** ②
	—	**M22-D-X-SWRGYB** ③	**M22S-D-X-SWRGYB** ③	**M22M-D-X-SWRGYB** ③

M22-DG-G

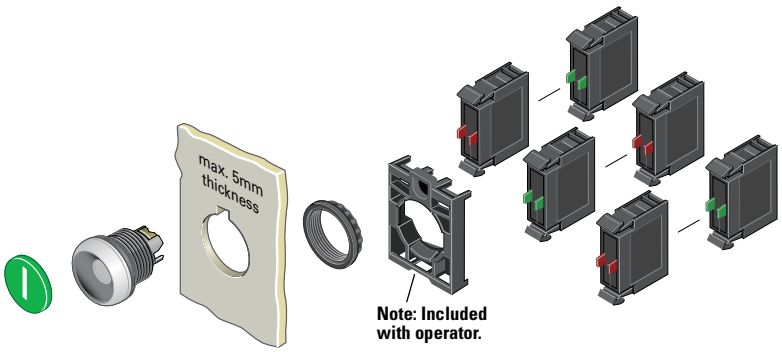
Silver Guarded

Button Color	Inscription	Silver Bezel Catalog Number
Black	—	**M22-DG-S**
Red	—	**M22-DG-R**
Green	—	**M22-DG-G**
White	—	**M22-DG-W**
Blue	—	**M22-DG-B**
Yellow	—	**M22-DG-Y**
—	—	**M22-DG-X-SRG** ②
	—	**M22-DG-X-SWRGYB** ③

Notes

① Includes contact block mounting adapter.
② Buttonless operator comes with three color buttons (black, red, green).
③ Buttonless operator comes with all six color buttons (black, white, red, green, yellow, blue).

Non-Illuminated Pushbuttons, Flush, Momentary



Components

M22-XD-G

Button Plates ①

Color	Inscription	Catalog Number
Black	—	**M22-XD-S** ②
	Custom	**M22-XD-S-ETCH** ③
	STOP	**M22-XD-S-GB0**
	START	**M22-XD-S-GB1**
	CLOSE	**M22-XD-S-GB2**
	UP	**M22-XD-S-GB3**
	DOWN	**M22-XD-S-GB4**
	OFF	**M22-XD-S-GB5**
	ON	**M22-XD-S-GB6**
	TEST	**M22-XD-S-GB9**
	FORWARD	**M22-XD-S-GB15**
	REVERSE	**M22-XD-S-GB16**
	RAISE	**M22-XD-S-GB17**
	LOWER	**M22-XD-S-GB18**
	◎	**M22-XD-S-X0**
	①	**M22-XD-S-X1**
	⑪	**M22-XD-S-X2**
	⊕	**M22-XD-S-X4**
	⊖	**M22-XD-S-X5**
	↑	**M22-XD-S-X7**
Red	—	**M22-XD-R** ②
	Custom	**M22-XD-R-ETCH** ③
	STOP	**M22-XD-R-GB0**
	OFF	**M22-XD-R-GB5**
	◎	**M22-XD-R-X0**
Green	—	**M22-XD-G** ②
	Custom	**M22-XD-G-ETCH** ③
	START	**M22-XD-G-GB1**
	ON	**M22-XD-G-GB6**
	①	**M22-XD-G-X1**
Blue	—	**M22-XD-B** ②
	Custom	**M22-XD-B-ETCH** ③
	RESET	**M22-XD-B-GB14**
	Ⓡ	**M22-XD-B-X6**
White	—	**M22-XD-W** ②
	Custom	**M22-XD-W-ETCH** ③
	START	**M22-XD-W-GB1**
	①	**M22-XD-W-X1**
Yellow	—	**M22-XD-Y** ②
	Custom	**M22-XD-Y-ETCH** ③
Black, red, green	—	**M22-XD-SRG**
Black, white, red, green, yellow, blue	—	**M22-XD-SWRGYB**

Buttonless Operator

Silver Bezel Catalog Number ④: **M22-D-X**

Black Bezel Catalog Number ④: **M22S-D-X**

Metal Bezel Catalog Number ④: **M22M-D-X**

Silver Guarded

Silver Bezel Catalog Number ④: **M22-DG-X**

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ⑤	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑥
	NO	**M22-FK10** ⑥

Notes

① For complete listing of available button plates and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Minimum order quantity of (10).
③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XD-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.
④ Includes contact block mounting adapter.
⑤ All NC contact blocks are positively driven contact. ⊖
⑥ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Non-Illuminated Pushbuttons, Flush, Maintained ①

M22-DR-S

M22S-DR-S

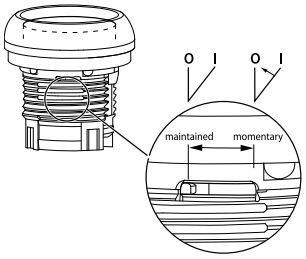
M22M-DR-S

Operators Only ②

Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	**M22-DR-S**	**M22S-DR-S**	**M22M-DR-S**
Red	**M22-DR-R**	**M22S-DR-R**	**M22M-DR-R**
Green	**M22-DR-G**	**M22S-DR-G**	**M22M-DR-G**
White	**M22-DR-W**	**M22S-DR-W**	**M22M-DR-W**
Blue	**M22-DR-B**	**M22S-DR-B**	**M22M-DR-B**
Yellow	**M22-DR-Y**	**M22S-DR-Y**	**M22M-DR-Y**
③	**M22-DR-X-SRG**	**M22S-DR-X-SRG**	**M22M-DR-X-SRG**
④	**M22-DR-X-SWRGYB**	**M22S-DR-X-SWRGYB**	**M22M-DR-X-SWRGYB**

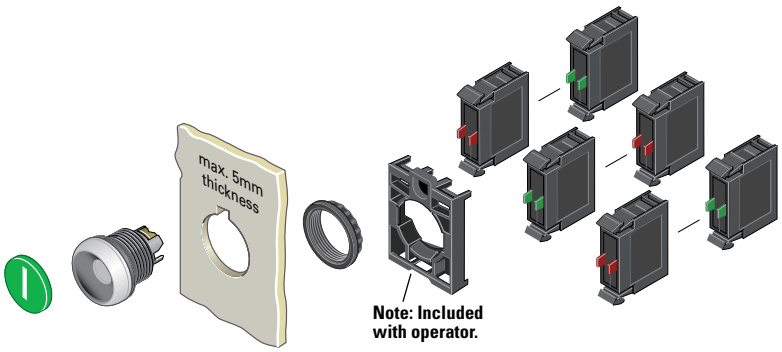
Notes

① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.
② Includes contact block mounting adapter.
③ Buttonless operator comes with three color buttons (black, red, green).
④ Buttonless operator comes with all six color buttons (black, white, red, green, yellow, blue).



Note: This pilot device features a selectable function switch that enables the device to be set to either maintained or momentary operation.

Non-Illuminated Pushbuttons, Flush, Maintained ①



Components

M22-XD-S

Button Plates ②

Color	Inscription	Catalog Number
Black	—	**M22-XD-S** ③
	Custom	**M22-XD-S-ETCH** ④
	STOP	**M22-XD-S-GB0**
	START	**M22-XD-S-GB1**
	CLOSE	**M22-XD-S-GB2**
	UP	**M22-XD-S-GB3**
	DOWN	**M22-XD-S-GB4**
	OFF	**M22-XD-S-GB5**
	ON	**M22-XD-S-GB6**
	TEST	**M22-XD-S-GB9**
	FORWARD	**M22-XD-S-GB15**
	REVERSE	**M22-XD-S-GB16**
	RAISE	**M22-XD-S-GB17**
	LOWER	**M22-XD-S-GB18**
	◎	**M22-XD-S-X0**
	①	**M22-XD-S-X1**
	⑪	**M22-XD-S-X2**
	⊕	**M22-XD-S-X4**
	⊖	**M22-XD-S-X5**
	↑	**M22-XD-S-X7**
Red	—	**M22-XD-R** ③
	Custom	**M22-XD-R-ETCH** ④
	STOP	**M22-XD-R-GB0**
	OFF	**M22-XD-R-GB5**
	◎	**M22-XD-R-X0**
Green	—	**M22-XD-G** ③
	Custom	**M22-XD-G-ETCH** ④
	START	**M22-XD-G-GB1**
	ON	**M22-XD-G-GB6**
	①	**M22-XD-G-X1**
Blue	—	**M22-XD-B** ③
	Custom	**M22-XD-B-ETCH** ④
	RESET	**M22-XD-B-GB14**
	Ⓡ	**M22-XD-B-X6**
White	—	**M22-XD-W** ③
	Custom	**M22-XD-W-ETCH** ④
	START	**M22-XD-W-GB1**
	①	**M22-XD-W-X1**
Yellow	—	**M22-XD-Y** ③
	Custom	**M22-XD-Y-ETCH** ④
Black, red, green	—	**M22-XD-SRG**
Black, white, red, green, yellow, blue	—	**M22-XD-SWRGYB**

Buttonless Operator

Silver Bezel Catalog Number ⑤ — **M22-DR-X**

Black Bezel Catalog Number ⑤ — **M22S-DR-X**

Metal Bezel Catalog Number ⑤ — **M22M-DR-X**

M22-K10

M22-FK01

Contact Blocks ②

Terminal Type	Contact Configuration ⑥	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑦
	NO	**M22-FK10** ⑦

Notes

① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

② For complete listing of available button plates and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

③ Minimum order quantity of (10).

④ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-XD-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

⑤ Includes contact block mounting adapter.

⑥ All NC contact blocks are positively driven contact. ⊖

⑦ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Non-Illuminated Pushbuttons, Extended, Momentary

M22-DH-R-K10

M22S-DH-R-K10

M22M-DH-R-K10

Complete Devices

Button Color	Contact Block Configuration ①	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	NO	**M22-DH-R-K10**	**M22S-DH-R-K10**	**M22M-DH-R-K10**
	NC	**M22-DH-R-K01**	**M22S-DH-R-K01**	**M22M-DH-R-K01**
	2NO	**M22-DH-R-K20**	**M22S-DH-R-K20**	**M22M-DH-R-K20**
	2NC	**M22-DH-R-K02**	**M22S-DH-R-K02**	**M22M-DH-R-K02**
	1NO-1NC	**M22-DH-R-K11**	**M22S-DH-R-K11**	**M22M-DH-R-K11**

M22-DGH-R-K10

Silver Guarded

Button Color	Contact Block Configuration ①	Silver Bezel Catalog Number
Red	NO	**M22-DGH-R-K10**
	NC	**M22-DGH-R-K01**
	2NO	**M22-DGH-R-K20**
	2NC	**M22-DGH-R-K02**
	1NO-1NC	**M22-DGH-R-K11**

M22-DH-R

M22S-DH-R

M22M-DH-R

Operators Only ②

Button Color	Inscription	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	—	**M22-DH-S**	**M22S-DH-S**	**M22M-DH-S**
Red	—	**M22-DH-R**	**M22S-DH-R**	**M22M-DH-R**
	STOP	**M22-DH-R-GB0**	**M22S-DH-R-GB0**	**M22M-DH-R-GB0**
	◎	**M22-DH-R-X0**	**M22S-DH-R-X0**	**M22M-DH-R-X0**
Green	—	**M22-DH-G**	**M22S-DH-G**	**M22M-DH-G**
White	—	**M22-DH-W**	**M22S-DH-W**	**M22M-DH-W**
Blue	—	**M22-DH-B**	**M22S-DH-B**	**M22M-DH-B**
Yellow	—	**M22-DH-Y**	**M22S-DH-Y**	**M22M-DH-Y**
③	—	**M22-DH-X-SRG**	**M22S-DH-X-SRG**	**M22M-DH-X-SRG**
④	—	**M22-DH-X-SWRGYB**	**M22S-DH-X-SWRGYB**	**M22M-DH-X-SWRGYB**

M22-DGH-R-K10

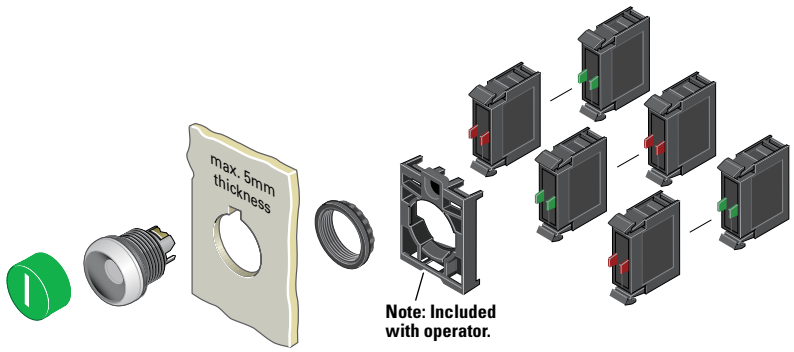
Silver Guarded

Button Color	Inscription	Silver Bezel Catalog Number
Black	—	**M22-DGH-S**
Red	—	**M22-DGH-R**
	STOP	**M22-DGH-R-GB0**
	◎	**M22-DGH-R-X0**
Green	—	**M22-DGH-G**
White	—	**M22-DGH-W**
Blue	—	**M22-DGH-B**
Yellow	—	**M22-DGH-Y**

Notes

① All NC contact blocks are positively driven contact. ⊖
② Includes contact block mounting adapter.
③ Buttonless operator comes with three color buttons (black, red, green).
④ Buttonless operator comes with all six color buttons (black, white, red, green, yellow, blue).

Non-Illuminated Pushbuttons, Extended, Momentary



Components

M22-XDH-R

Button Plates ①

Color	Inscription	Catalog Number
Black	—	**M22-XDH-S** ②
	Custom	**M22-XDH-S-ETCH** ③
	STOP	**M22-XDH-S-GB0**
	START	**M22-XDH-S-GB1**
	CLOSE	**M22-XDH-S-GB2**
	UP	**M22-XDH-S-GB3**
	DOWN	**M22-XDH-S-GB4**
	OFF	**M22-XDH-S-GB5**
	ON	**M22-XDH-S-GB6**
	TEST	**M22-XDH-S-GB9**
	FORWARD	**M22-XDH-S-GB15**
	REVERSE	**M22-XDH-S-GB16**
	RAISE	**M22-XDH-S-GB17**
	LOWER	**M22-XDH-S-GB18**
	◎	**M22-XDH-S-X0**
	①	**M22-XDH-S-X1**
	⑪	**M22-XDH-S-X2**
	⊕	**M22-XDH-S-X4**
	⊖	**M22-XDH-S-X5**
	⑦	**M22-XDH-S-X7**
Red	—	**M22-XDH-R** ②
	Custom	**M22-XDH-R-ETCH** ③
	STOP	**M22-XDH-R-GB0**
	OFF	**M22-XDH-R-GB5**
	◎	**M22-XDH-R-X0**
Green	—	**M22-XDH-G** ②
	Custom	**M22-XDH-G-ETCH** ③
	START	**M22-XDH-G-GB1**
	ON	**M22-XDH-G-GB6**
	①	**M22-XDH-G-X1**
Blue	—	**M22-XDH-B** ②
	Custom	**M22-XDH-B-ETCH** ③
	RESET	**M22-XDH-B-GB14**
	Ⓡ	**M22-XDH-B-X6**
White	—	**M22-XDH-W** ②
	Custom	**M22-XDH-W-ETCH** ③
	START	**M22-XDH-W-GB1**
	①	**M22-XDH-W-X1**
Yellow	—	**M22-XDH-Y** ②
	Custom	**M22-XDH-Y-ETCH** ③
Black, red, green	—	**M22-XDH-SRG**
Black, white, red, green, yellow, blue	—	**M22-XDH-SWRGYB**

Buttonless Operator

Silver Bezel Catalog Number ④: **M22-D-X**

Black Bezel Catalog Number ④: **M22S-D-X**

Metal Bezel Catalog Number ④: **M22M-D-X**

Silver Guarded

Silver Bezel Catalog Number ④: **M22-DG-X**

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ⑤	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑥
	NO	**M22-FK10** ⑥

Notes

① For complete listing of available button plates and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Minimum order quantity of (10).
③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XDH-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.
④ Includes contact block mounting adapter.
⑤ All NC contact blocks are positively driven contact. ⊖
⑥ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Non-Illuminated Pushbuttons, Extended, Maintained ①

M22-DRH-W

M22S-DRH-W

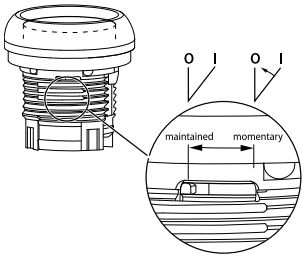
M22M-DRH-W

Operators Only ②

Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	**M22-DRH-S**	**M22S-DRH-S**	**M22M-DRH-S**
Red	**M22-DRH-R**	**M22S-DRH-R**	**M22M-DRH-R**
Green	**M22-DRH-G**	**M22S-DRH-G**	**M22M-DRH-G**
White	**M22-DRH-W**	**M22S-DRH-W**	**M22M-DRH-W**
Blue	**M22-DRH-B**	**M22S-DRH-B**	**M22M-DRH-B**
Yellow	**M22-DRH-Y**	**M22S-DRH-Y**	**M22M-DRH-Y**
③	**M22-DRH-X-SRG**	**M22S-DRH-X-SRG**	**M22M-DRH-X-SRG**
④	**M22-DRH-X-SWRGYB**	**M22S-DRH-X-SWRGYB**	**M22M-DRH-X-SWRGYB**

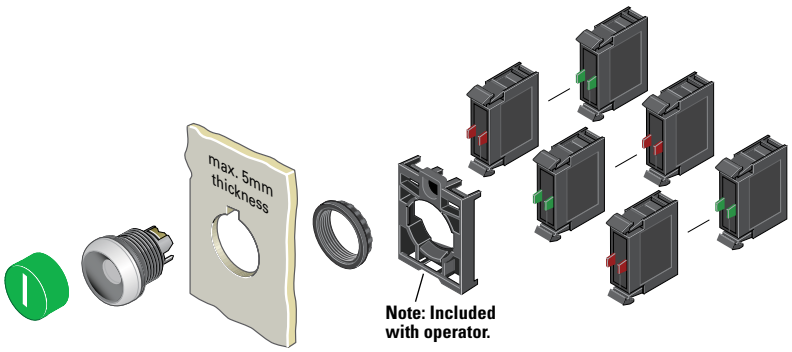
Notes

① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.
② Includes contact block mounting adapter.
③ Buttonless operator comes with three color buttons (black, red, green).
④ Buttonless operator comes with all six color buttons (black, white, red, green, yellow, blue).



Note: This pilot device features a selectable function switch that enables the device to be set to either maintained or momentary operation.

Non-Illuminated Pushbuttons, Extended, Maintained ①



Components

M22-XDH-W

Button Plates ②

Color	Inscription	Catalog Number
Black	—	**M22-XDH-S** ③
	Custom	**M22-XDH-S-ETCH** ④
	STOP	**M22-XDH-S-GB0**
	START	**M22-XDH-S-GB1**
	CLOSE	**M22-XDH-S-GB2**
	UP	**M22-XDH-S-GB3**
	DOWN	**M22-XDH-S-GB4**
	OFF	**M22-XDH-S-GB5**
	ON	**M22-XDH-S-GB6**
	TEST	**M22-XDH-S-GB9**
	FORWARD	**M22-XDH-S-GB15**
	REVERSE	**M22-XDH-S-GB16**
	RAISE	**M22-XDH-S-GB17**
	LOWER	**M22-XDH-S-GB18**
	◎	**M22-XDH-S-X0**
	①	**M22-XDH-S-X1**
	⑪	**M22-XDH-S-X2**
	⊕	**M22-XDH-S-X4**
	⊖	**M22-XDH-S-X5**
	↑	**M22-XDH-S-X7**
Red	—	**M22-XDH-R** ③
	Custom	**M22-XDH-R-ETCH** ④
	STOP	**M22-XDH-R-GB0**
	OFF	**M22-XDH-R-GB5**
	◎	**M22-XDH-R-X0**
Green	—	**M22-XDH-G** ③
	Custom	**M22-XDH-G-ETCH** ④
	START	**M22-XDH-G-GB1**
	ON	**M22-XDH-G-GB6**
	①	**M22-XDH-G-X1**
Blue	—	**M22-XDH-B** ③
	Custom	**M22-XDH-B-ETCH** ④
	RESET	**M22-XDH-B-GB14**
	Ⓡ	**M22-XDH-B-X6**
White	—	**M22-XDH-W** ③
	Custom	**M22-XDH-W-ETCH** ④
	START	**M22-XDH-W-GB1**
	①	**M22-XDH-W-X1**
Yellow	—	**M22-XDH-Y** ③
	Custom	**M22-XDH-Y-ETCH** ④
Black, red, green	—	**M22-XDH-SRG**
Black, white, red, green, yellow, blue	—	**M22-XDH-SWRGYB**

Buttonless Operator

Silver Bezel Catalog Number ⑤ **M22-DR-X**

Black Bezel Catalog Number ⑤ **M22S-DR-X**

Metal Bezel Catalog Number ⑤ **M22M-DR-X**

M22-K10

M22-FK01

Contact Blocks ②

Terminal Type	Contact Configuration ⑥	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑦
	NO	**M22-FK10** ⑦

Notes

① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

② For complete listing of available button plates and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

③ Minimum order quantity of (10).

④ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-XDH-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

⑤ Includes contact block mounting adapter.

⑥ All NC contact blocks are positively driven contact. ⊖

⑦ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Catalog Number Selection

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

Illuminated Pushbuttons

M22 – DRL – R – GB0 – K10 – 230R

Bezel
- **M22** = Silver
- **M22S** = Black
- **M22M** = Metal

Operator Type
- **DL** = Illuminated flush momentary
- **DLH** = Illuminated extended momentary
- **DGL** = Illuminated flush momentary with guard ①
- **DRL** = Illuminated flush maintained
- **DGLH** = Illuminated extended momentary with guard ①
- **DRLH** = Illuminated extended maintained

① Silver bezel only.

Lens Color
- **W** = White
- **R** = Red
- **G** = Green
- **Y** = Yellow
- **B** = Blue
- **A** = Amber

Contact Blocks
- **K10** = 1NO
- **K01** = 1NC
- **K20** = 2NO
- **K02** = 2NC
- **K11** = 1NO-1NC
- **K30** = 3NO
- **K03** = 3NC
- **K21** = 2NO-1NC
- **K12** = 1NO-2NC

Light Units

12–30 Vac/Vdc
- **W** = White
- **R** = Red
- **G** = Green
- **B** = Blue

85–264 Vac
- **230W** = White
- **230R** = Red
- **230G** = Green
- **230B** = Blue

Inscription
- **GB0** = STOP
- **GB1** = START
- **GB2** = CLOSE
- **GB3** = UP
- **GB4** = DOWN
- **GB5** = OFF
- **GB6** = ON
- **GB14** = RESET
- **GB15** = FORWARD
- **GB16** = REVERSE
- **X0** = ⓞ
- **X1** = ⓘ
- **X4** = ⊕
- **X5** = ⊖
- **X6** = Ⓡ

Product Selection

Illuminated Pushbuttons, Flush, Momentary

M22-DL-G-K01-G

M22S-DL-G-K01-G

M22M-DL-G-K01-G

Complete Devices

Button Color	Contact Block Configuration ①	Light Unit Voltage	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	NC	12–30 Vac/Vdc	**M22-DL-R-K01-R**	**M22S-DL-R-K01-R**	**M22M-DL-R-K01-R**
	NC	85–264 Vac	**M22-DL-R-K01-230R**	**M22S-DL-R-K01-230R**	**M22M-DL-R-K01-230R**
	2NC	12–30 Vac/Vdc	**M22-DL-R-K02-R**	**M22S-DL-R-K02-R**	**M22M-DL-R-K02-R**
	2NC	85–264 Vac	**M22-DL-R-K02-230R**	**M22S-DL-R-K02-230R**	**M22M-DL-R-K02-230R**
	1NO/1NC	12–30 Vac/Vdc	**M22-DL-R-K11-R**	**M22S-DL-R-K11-R**	**M22M-DL-R-K11-R**
	1NO/1NC	85–264 Vac	**M22-DL-R-K11-230R**	**M22S-DL-R-K11-230R**	**M22M-DL-R-K11-230R**
Green	NO	12–30 Vac/Vdc	**M22-DL-G-K10-G**	**M22S-DL-G-K10-G**	**M22M-DL-G-K10-G**
	NO	85–264 Vac	**M22-DL-G-K10-230G**	**M22S-DL-G-K10-230G**	**M22M-DL-G-K10-230G**
	2NO	12–30 Vac/Vdc	**M22-DL-G-K20-G**	**M22S-DL-G-K20-G**	**M22M-DL-G-K20-G**
	2NO	85–264 Vac	**M22-DL-G-K20-230G**	**M22S-DL-G-K20-230G**	**M22M-DL-G-K20-230G**
	1NO/1NC	12–30 Vac/Vdc	**M22-DL-G-K11-G**	**M22S-DL-G-K11-G**	**M22M-DL-G-K11-G**
	1NO/1NC	85–264 Vac	**M22-DL-G-K11-230G**	**M22S-DL-G-K11-230G**	**M22M-DL-G-K11-230G**
White	NO	12–30 Vac/Vdc	**M22-DL-W-K10-W**	**M22S-DL-W-K10-W**	—
	NO	85–264 Vac	**M22-DL-W-K10-230W**	**M22S-DL-W-K10-230W**	**M22M-DL-W-K10-230W**
	2NO	12–30 Vac/Vdc	**M22-DL-W-K20-W**	**M22S-DL-W-K20-W**	—
	2NO	85–264 Vac	**M22-DL-W-K20-230W**	**M22S-DL-W-K20-230W**	**M22M-DL-W-K20-230W**
	1NO/1NC	12–30 Vac/Vdc	**M22-DL-W-K11-W**	**M22S-DL-W-K11-W**	—
	1NO/1NC	85–264 Vac	**M22-DL-W-K11-230W**	**M22S-DL-W-K11-230W**	**M22M-DL-W-K11-230W**

Note

① All NC contact blocks are positively driven contact. ⊖

1

Illuminated Pushbuttons, Flush, Momentary

M22-DL-G

M22S-DL-G

M22M-DL-G

Operators Only ①

Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	**M22-DL-R**	**M22S-DL-R**	**M22M-DL-R**
Green	**M22-DL-G**	**M22S-DL-G**	**M22M-DL-G**
White	**M22-DL-W**	**M22S-DL-W**	**M22M-DL-W**
Blue	**M22-DL-B**	**M22S-DL-B**	**M22M-DL-B**
Yellow	**M22-DL-Y**	**M22S-DL-Y**	**M22M-DL-Y**
Amber	**M22-DL-A**	**M22S-DL-A**	**M22M-DL-A**

M22-DGL-G

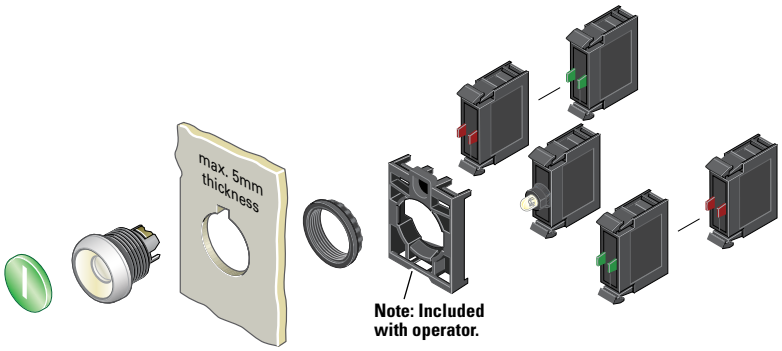
Silver Guarded

Button Color	Silver Bezel Catalog Number
Red	**M22-DGL-R**
Green	**M22-DGL-G**
White	**M22-DGL-W**
Blue	**M22-DGL-B**
Yellow	**M22-DGL-Y**

Note

① Includes contact block mounting adapter.

Illuminated Pushbuttons, Flush, Momentary



Components

M22-XDL-G

Button Lenses ①

Color	Inscription	Catalog Number
Red	—	**M22-XDL-R** ②
	Custom	**M22-XDL-R-ETCH** ③
	STOP	**M22-XDL-R-GB0**
	OFF	**M22-XDL-R-GB5**
	◎	**M22-XDL-R-X0**
Green	—	**M22-XDL-G** ②
	Custom	**M22-XDL-G-ETCH** ③
	START	**M22-XDL-G-GB1**
	ON	**M22-XDL-G-GB6**
	Ⓘ	**M22-XDL-G-X1**
Blue	—	**M22-XDL-B** ②
	Custom	**M22-XDL-B-ETCH** ③
	RESET	**M22-XDL-B-GB14**
	Ⓡ	**M22-XDL-B-X6**
White	—	**M22-XDL-W** ②
	Custom	**M22-XDL-W-ETCH** ③
Yellow	—	**M22-XDL-Y** ②
	Custom	**M22-XDL-Y-ETCH** ③
Amber	—	**M22-XDL-A**
	Custom	**M22-XDL-A-ETCH**

M22-DL-X

M22S-DL-X

M22M-DL-X

Buttonless Operator

Silver Bezel Catalog Number ④	Black Bezel Catalog Number ④	Metal Bezel Catalog Number ④
M22-DL-X	**M22S-DL-X**	**M22M-DL-X**

M22-DGL-X

Silver Guarded

Silver Bezel Catalog Number ④
M22-DGL-X

M22-LED-W

M22-FLED-_

Light Units ①

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/Yellow	24 Vdc	**M22-FLED-RG** ⑤
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ⑤

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ⑥	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑦
	NO	**M22-FK10** ⑦

Notes

① For complete listing of available button lenses, light units and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Minimum order quantity of (10).
③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XDL-R-ETCH; Order Notes: Mark with symbol X91, Line item #_.
④ Includes contact block mounting adapter.
⑤ Please see color input key on **Page V7-T1-114**.
⑥ All NC contact blocks are positively driven contact. ⊖
⑦ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

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Illuminated Pushbuttons, Flush, Maintained ①

M22-DRL-W-K10-W

M22S-DRL-W-K10-W

M22M-DRL-W-K10-W

Complete Devices

Button Color	Contact Block Configuration ②	Light Unit Voltage	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
White	NO	12–30 Vac/Vdc	**M22-DRL-W-K10-W**	**M22S-DRL-W-K10-W**	**M22M-DRL-W-K10-W**
	NO	85–264 Vac	**M22-DRL-W-K10-230W**	**M22S-DRL-W-K10-230W**	**M22M-DRL-W-K10-230W**
	NC	12–30 Vac/Vdc	**M22-DRL-W-K01-W**	**M22S-DRL-W-K01-W**	**M22M-DRL-W-K01-W**
	NC	85–264 Vac	**M22-DRL-W-K01-230W**	**M22S-DRL-W-K01-230W**	**M22M-DRL-W-K01-230W**
	2NO	12–30 Vac/Vdc	**M22-DRL-W-K20-W**	**M22S-DRL-W-K20-W**	**M22M-DRL-W-K20-W**
	2NO	85–264 Vac	**M22-DRL-W-K20-230W**	**M22S-DRL-W-K20-230W**	**M22M-DRL-W-K20-230W**
	2NC	12–30 Vac/Vdc	**M22-DRL-W-K02-W**	**M22S-DRL-W-K02-W**	**M22M-DRL-W-K02-W**
	2NC	85–264 Vac	**M22-DRL-W-K02-230W**	**M22S-DRL-W-K02-230W**	**M22M-DRL-W-K02-230W**
	1NO/1NC	12–30 Vac/Vdc	**M22-DRL-W-K11-W**	**M22S-DRL-W-K11-W**	**M22M-DRL-W-K11-W**
	1NO/1NC	85–264 Vac	**M22-DRL-W-K11-230W**	**M22S-DRL-W-K11-230W**	**M22M-DRL-W-K11-230W**

M22-DRL-W

M22S-DRL-W

M22M-DRL-W

Operators Only ③

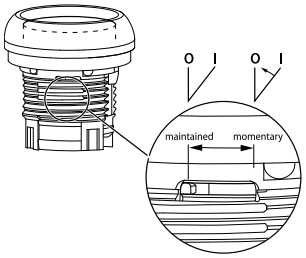
Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	**M22-DRL-R**	**M22S-DRL-R**	**M22M-DRL-R**
Green	**M22-DRL-G**	**M22S-DRL-G**	**M22M-DRL-G**
White	**M22-DRL-W**	**M22S-DRL-W**	**M22M-DRL-W**
Blue	**M22-DRL-B**	**M22S-DRL-B**	**M22M-DRL-B**
Yellow	**M22-DRL-Y**	**M22S-DRL-Y**	**M22M-DRL-Y**
Amber	**M22-DRL-A**	**M22S-DRL-A**	**M22M-DRL-A**

Notes

① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

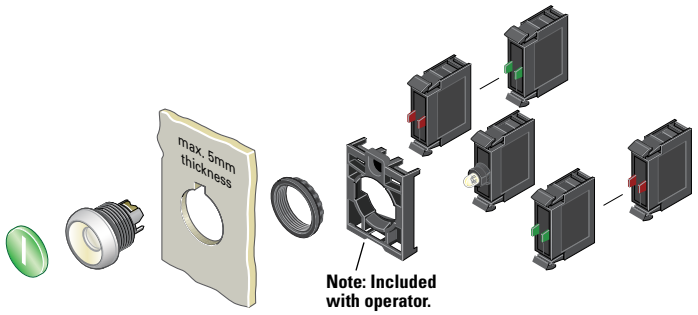
② All NC contact blocks are positively driven contact. ⊖

③ Includes contact block mounting adapter.



Note: This pilot device features a selectable function switch that enables the device to be set to either maintained or momentary operation.

Illuminated Pushbuttons, Flush, Maintained ①



Components

M22-XDL-W

Button Lenses ②

Color	Inscription	Catalog Number
Red	—	**M22-XDL-R** ③
	Custom	**M22-XDL-R-ETCH** ④
	STOP	**M22-XDL-R-GB0**
	OFF	**M22-XDL-R-GB5**
	◎	**M22-XDL-R-X0**
Green	—	**M22-XDL-G** ③
	Custom	**M22-XDL-G-ETCH** ④
	START	**M22-XDL-G-GB1**
	ON	**M22-XDL-G-GB6**
	⏽	**M22-XDL-G-X1**
Blue	—	**M22-XDL-B** ③
	Custom	**M22-XDL-B-ETCH** ④
	RESET	**M22-XDL-B-GB14**
	Ⓡ	**M22-XDL-B-X6**
White	—	**M22-XDL-W** ③
	Custom	**M22-XDL-W-ETCH** ④
Yellow	—	**M22-XDL-Y** ③
	Custom	**M22-XDL-Y-ETCH** ④
Amber	—	**M22-XDL-A**
	Custom	**M22-XDL-A-ETCH**

M22-DRL-X

M22S-DRL-X

M22M-DRL-X

Buttonless Operator

Silver Bezel Catalog Number ⑤	Black Bezel Catalog Number ⑤	Metal Bezel Catalog Number ⑤
M22-DRL-X	**M22S-DRL-X**	**M22M-DRL-X**

M22-LED-W

M22-FLED-_

Light Units ②

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/Yellow	24 Vdc	**M22-FLED-RG** ⑥
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ⑥

M22-K10

M22-FK01

Contact Blocks ②

Terminal Type	Contact Configuration ⑦	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑧
	NO	**M22-FK10** ⑧

Notes

① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.
② For complete listing of available button lenses, light units and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
③ Minimum order quantity of (10).
④ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-XDL-R-ETCH; Order Notes: Mark with symbol X91, Line item #_.
⑤ Includes contact block mounting adapter.
⑥ Please see color input key on **Page V7-T1-114**.
⑦ All NC contact blocks are positively driven contact. ⊖
⑧ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Illuminated Pushbuttons, Extended, Momentary

M22-DLH-R-K11-R

M22S-DLH-R-K11-R

Complete Devices

Button Color	Contact Block Configuration ①	Light Unit Voltage	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	1NO/1NC	12–30 Vac/Vdc	**M22-DLH-R-K11-R**	**M22S-DLH-R-K11-R**	**M22M-DLH-R-K11-R**
	1NO/1NC	85–264 Vac	**M22-DLH-R-K11-230R**	**M22S-DLH-R-K11-230R**	**M22M-DLH-R-K11-230R**
Green	2NO	12–30 Vac/Vdc	**M22-DLH-G-K20-G**	**M22S-DLH-G-K20-G**	**M22M-DLH-G-K20-G**
	2NO	85–264 Vac	**M22-DLH-G-K20-230G**	**M22S-DLH-G-K20-230G**	**M22M-DLH-G-K20-230G**
White	2NO	12–30 Vac/Vdc	**M22-DLH-W-K20-W**	**M22S-DLH-W-K20-W**	**M22M-DLH-W-K20-W**
	2NO	85–264 Vac	**M22-DLH-W-K20-230W**	**M22S-DLH-W-K20-230W**	**M22M-DLH-W-K20-230W**

Complete Press-to-Test Units

Button Color	Light Unit Voltage	Silver Bezel Catalog Number	Black Bezel Catalog Number
Red	12–30 Vac/Vdc	**M22-T-R-R**	**M22S-T-R-R**
Blue		**M22-T-B-B**	**M22S-T-B-B**
Yellow		**M22-T-Y-W**	**M22S-T-Y-W**
Green		**M22-T-G-G**	**M22S-T-G-G**
White		**M22-T-W-W**	**M22S-T-W-W**
Red	85–264 Vac	**M22-T-R-230R**	**M22S-T-R-230R**
Blue		**M22-T-R-230B**	**M22S-T-B-230B**
Yellow		**M22-T-Y-230W**	**M22S-T-Y-230W**
Green		**M22-T-G-230G**	**M22S-T-G-230G**
White		**M22-T-W-230W**	**M22S-T-W-230W**

M22-DLH-R

M22S-DLH-R

M22M-DLH-R

Operators Only ②

Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	**M22-DLH-R**	**M22S-DLH-R**	**M22M-DLH-R**
Green	**M22-DLH-G**	**M22S-DLH-G**	**M22M-DLH-G**
White	**M22-DLH-W**	**M22S-DLH-W**	**M22M-DLH-W**
Blue	**M22-DLH-B**	**M22S-DLH-B**	**M22M-DLH-B**
Yellow	**M22-DLH-Y**	**M22S-DLH-Y**	**M22M-DLH-Y**
Amber	**M22-DLH-A**	**M22S-DLH-A**	**M22M-DLH-A**

M22-DGLH-R

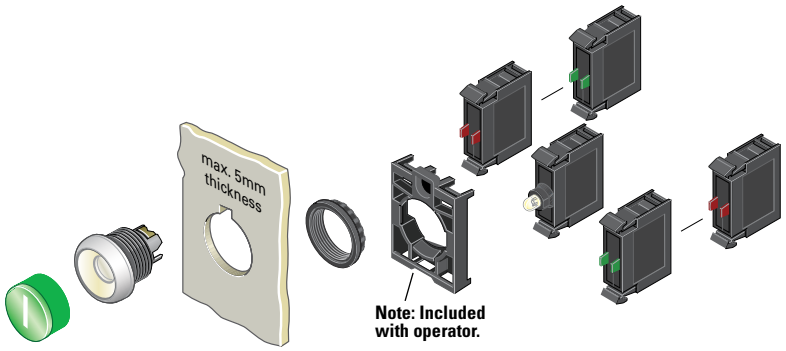
Silver Guarded

Button Color	Silver Bezel Catalog Number
Red	**M22-DGLH-R**
Green	**M22-DGLH-G**
White	**M22-DGLH-W**
Blue	**M22-DGLH-B**
Yellow	**M22-DGLH-Y**

Notes

① All NC contact blocks are positively driven contact. ⊖
② Includes contact block mounting adapter.

Illuminated Pushbuttons, Extended, Momentary



Components

M22-XDH-R

Button Lenses ①

Color	Inscription	Catalog Number
Red	—	**M22-XDLH-R** ②
	Custom	**M22-XDLH-R-ETCH** ③
	STOP	**M22-XDLH-R-GB0**
	OFF	**M22-XDLH-R-GB5**
	◎	**M22-XDLH-R-X0**
Green	—	**M22-XDLH-G** ②
	Custom	**M22-XDLH-G-ETCH** ③
	START	**M22-XDLH-G-GB1**
	ON	**M22-XDLH-G-GB6**
	Ⓘ	**M22-XDLH-G-X1**
Blue	—	**M22-XDLH-B** ②
	Custom	**M22-XDLH-B-ETCH** ③
	RESET	**M22-XDLH-B-GB14**
	Ⓡ	**M22-XDLH-B-X6**
White	—	**M22-XDLH-W** ②
	Custom	**M22-XDLH-W-ETCH** ③
Yellow	—	**M22-XDLH-Y** ②
	Custom	**M22-XDLH-Y-ETCH** ③
Amber	—	**M22-XDLH-A**
	Custom	**M22-XDLH-A-ETCH**

M22-DL-X

M22S-DL-X

M22M-DL-X

M22-DGL-X

Buttonless Operator

Silver Bezel Catalog Number ④	Black Bezel Catalog Number ④	Metal Bezel Catalog Number ④
M22-DL-X	**M22S-DL-X**	**M22M-DL-X**

Silver Guarded

Silver Bezel Catalog Number ④
M22-DGL-X

M22-LED-W

M22-FLED-_

Light Units ①

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/Yellow	24 Vdc	**M22-FLED-RG** ⑤
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ⑤

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ⑥	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑦
	NO	**M22-FK10** ⑦

Notes

① For complete listing of available button lenses, light units and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Minimum order quantity of (10).
③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XDH-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.
④ Includes contact block mounting adapter.
⑤ Please see color input key on **Page V7-T1-114**.
⑥ All NC contact blocks are positively driven contact. ⊖
⑦ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Illuminated Pushbuttons, Extended, Maintained ①

M22-DRLH-W

M22S-DRLH-W

M22M-DRLH-W

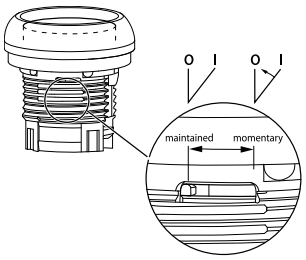
Operators Only ②

Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	**M22-DRLH-R**	**M22S-DRLH-R**	**M22M-DRLH-R**
Green	**M22-DRLH-G**	**M22S-DRLH-G**	**M22M-DRLH-G**
White	**M22-DRLH-W**	**M22S-DRLH-W**	**M22M-DRLH-W**
Blue	**M22-DRLH-B**	**M22S-DRLH-B**	**M22M-DRLH-B**
Yellow	**M22-DRLH-Y**	**M22S-DRLH-Y**	**M22M-DRLH-Y**
Amber	**M22-DRLH-A**	**M22S-DRLH-A**	**M22M-DRLH-A**

Notes

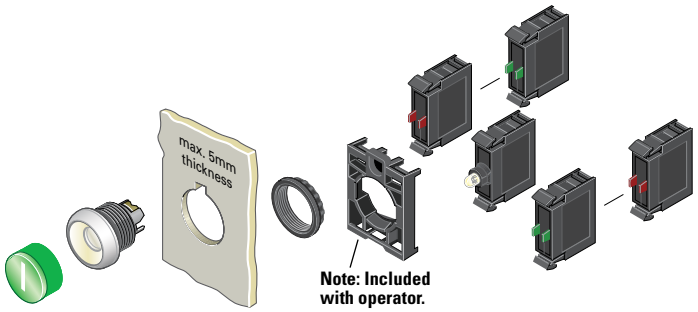
① Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

② Includes contact block mounting adapter.



Note: This pilot device features a selectable function switch that enables the device to be set to either maintained or momentary operation.

Illuminated Pushbuttons, Extended, Maintained [1]



Components

M22-XDLH-W

Button Lenses [2]

Color	Inscription	Catalog Number
Red	—	**M22-XDLH-R** [3]
	Custom	**M22-XDLH-R-ETCH** [4]
	STOP	**M22-XDLH-R-GB0**
	OFF	**M22-XDLH-R-GB5**
	◎	**M22-XDLH-R-X0**
Green	—	**M22-XDLH-G** [3]
	Custom	**M22-XDLH-G-ETCH** [4]
	START	**M22-XDLH-G-GB1**
	ON	**M22-XDLH-G-GB6**
	ⓘ	**M22-XDLH-G-X1**
Blue	—	**M22-XDLH-B** [3]
	Custom	**M22-XDLH-B-ETCH** [4]
	RESET	**M22-XDLH-B-GB14**
	Ⓡ	**M22-XDLH-B-X6**
White	—	**M22-XDLH-W** [3]
	Custom	**M22-XDLH-W-ETCH** [4]
Yellow	—	**M22-XDLH-Y** [3]
	Custom	**M22-XDLH-Y-ETCH** [4]
Amber	—	**M22-XDLH-A**
	Custom	**M22-XDLH-A-ETCH**

M22-DRL-X

M22S-DRL-X

M22M-DRL-X

Buttonless Operator

Silver Bezel Catalog Number [5]	Black Bezel Catalog Number [5]	Metal Bezel Catalog Number [5]
M22-DRL-X	**M22S-DRL-X**	**M22M-DRL-X**

M22-LED-W

M22-FLED-_

Light Units [2]

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/Yellow	24 Vdc	**M22-FLED-RG** [6]
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** [6]

M22-K10

M22-FK01

Contact Blocks [2]

Terminal Type	Contact Configuration [7]	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** [8]
	NO	**M22-FK10** [8]

Notes

[1] Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.
[2] For complete listing of available button lenses, light units and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
[3] Minimum order quantity of (10).
[4] When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XDLH-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.
[5] Includes contact block mounting adapter.
[6] Please see color input key on **Page V7-T1-114**.
[7] All NC contact blocks are positively driven contact. ⊖
[8] Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Indicating Lights

Product Description

Eaton's M22 indicating lights use the combination of a durable, bright LED unit and modern lenses designed specifically for this type of LED to create a bright and visible indicating light.

As with the pushbuttons, the indicating light lenses can be laser engraved. Indicating lights can be ordered as complete devices, including lens and LED unit, or as modular components.

Features

- Customizable laser engraving on all lenses
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- Lenses designed specifically for LED illumination
- Modular construction makes assembly fast and simplifies stocking of components and complete devices
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP67, IP69K
- NEMA 4X, 13

Catalog Number Selection

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

Indicating Lights

M22 - L – B – GB8 – B

Operator Type	Lens Color	Plate Inscription	Light Units	
			12–30 Vac/Vdc	85–264 Vac
M22-L = Flush indicating light	**W** = White	**ETCH** = Custom ①	**W** = White	**230W** = White
	R = Red	**GB5** = OFF	**R** = Red	**230R** = Red
	G = Green	**GB6** = ON	**G** = Green	**230G** = Green
	Y = Yellow	**GB8** = FAULT	**B** = Blue	**230B** = Blue
	B = Blue	**GB15** = FORWARD		
		GB16 = REVERSE		

Note: Light unit should match color of lens. Use white light unit with yellow lens.

① When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-L-B-ETCH; Order Notes: Mark with symbol X91, Line item #_.

Product Selection

Indicating Lights, Flush

M22-L-R-R

Complete Devices

Lens Color	Light Color	Light Unit Voltage	Catalog Number
White	White	12–30 Vac/Vdc	**M22-L-W-W**
Red	Red		**M22-L-R-R**
Green	Green		**M22-L-G-G**
Yellow	White		**M22-L-Y-W**
Blue	Blue		**M22-L-B-B**
Amber	White		**M22-L-A-W**
White	White	85–264 Vac	**M22-L-W-230W**
Red	Red		**M22-L-R-230R**
Green	Green		**M22-L-G-230G**
Yellow	White		**M22-L-Y-230W**
Blue	Blue		**M22-L-B-230B**
Amber	White		**M22-L-A-230W**

Operators Only ①

M22-L-R

Lens Color	Catalog Number
Flat	
White	**M22-L-W**
Red	**M22-L-R**
Green	**M22-L-G**
Yellow	**M22-L-Y**
Blue	**M22-L-B**
Amber	**M22-L-A**

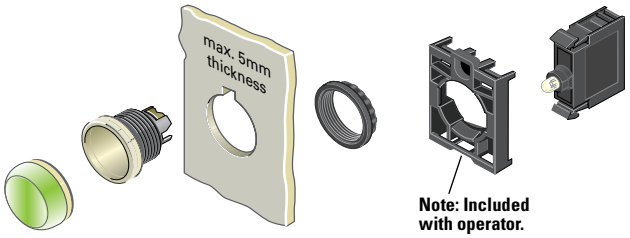
M22-LH-R

Lens Color	Catalog Number
Conical	
White	**M22-LH-W**
Red	**M22-LH-R**
Green	**M22-LH-G**
Yellow	**M22-LH-Y**
Blue	**M22-LH-B**
Amber	**M22-LH-A**

Note

① Includes contact block mounting adapter.

Indicating Lights, Flush



Components

M22-XL-R

Lenses ①

Color	Inscription	Catalog Number
Flat		
Red	—	**M22-XL-R** ②
	Custom	**M22-XL-R-ETCH** ③
	OFF	**M22-XL-R-GB5**
Green	—	**M22-XL-G** ②
	Custom	**M22-XL-G-ETCH** ③
	ON	**M22-XL-G-GB6**
	REVERSE	**M22-XL-G-GB16**
Blue	—	**M22-XL-B** ②
	Custom	**M22-XL-B-ETCH** ③
	FAULT	**M22-XL-B-GB8**
White	—	**M22-XL-W** ②
	Custom	**M22-XL-W-ETCH** ③
	OFF	**M22-XL-W-GB5**
	ON	**M22-XL-W-GB6**
	FAULT	**M22-XL-W-GB8**
	FORWARD	**M22-XL-W-GB15**
Yellow	—	**M22-XL-Y** ②
	Custom	**M22-XL-Y-ETCH** ③
Amber	—	**M22-XL-A** ②
	Custom	**M22-XL-A-ETCH** ③
Conical		
Red	—	**M22-XLH-R**
Green	—	**M22-XLH-G**
Blue	—	**M22-XLH-B**
White	—	**M22-XLH-W**
Yellow	—	**M22-XLH-Y**
Amber	—	**M22-XLH-A**

M22-LED-W

M22-FLED-_

Light Units ①④

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/ Yellow	24 Vdc	**M22-FLED-RG** ⑤
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ⑤

Notes

① For complete listing of available lenses and light units, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Minimum order quantity of (10).
③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XL-R-ETCH; Order Notes: Mark with symbol X91, Line item #_.
④ Select the same color LED element as lens color; for yellow and amber lenses, choose a white LED.
⑤ Please see color input key on **Page V7-T1-114**.

M22-L-X

Lensless Indicating Light

Catalog Number
M22-L-X

1

Emergency Stops

Product Description

Eaton's M22 emergency stops are a durable and reliable solution to a variety of e-stop applications. With standard push-pull, as well as twist-to-release and key-release, illuminated options and red or black operators, the M22 e-stop is a robust solution. As with all operators, they can be ordered as a ready to install complete device or as modular components for the perfect fit.

Features

- Push-pull and twist to release options available as well as illuminated and keyed release
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- More than 100,000 mechanical operations
- Capable of communicating via ASi protocol with ASi adapter modules
- Suitable for use in safety applications up to Category-4 or Sil-3

Protection Type

- IP67, IP69K (IP66 key-release)
- NEMA 4X, 13

Catalog Number Selection

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

Emergency Stops

M22 – PVT – MS2 – K10 – 230R

Operator Color

M22 = Silver
M22S = Black

Operator Type

PV = Non-illuminated push-pull emergency stop
PV45P = Non-illuminated 45 mm emergency stop
PV60P = Non-illuminated 60 mm emergency stop
PV45P-MPI = Non-illuminated mechanical indication, 45 mm
PV60P-MPI = Non-illuminated mechanical indication, 60 mm
PVT = Non-illuminated twist-to-release emergency stop
PVT45P = Non-illuminated twist-to-release 45 mm emergency stop
PVT60P = Non-illuminated twist-to-release 60 mm emergency stop
PVT45P-MPI = Non-illuminated twist-to-release with mechanical indication, 45 mm
PVT60P-MPI = Non-illuminated twist-to-release with mechanical indication, 60 mm
PVS = Non-illuminated keyed release (red operator only)
PVS45P = Non-illuminated keyed release 45 mm (red only)
PVS60P = Non-illuminated keyed release 60 mm (red only)
PVL = Illuminated push-pull emergency stop
PVLT = Illuminated twist-to-release emergency stop
PVLT45P = Illuminated twist-to-release 45 mm emergency stop
PVLT60P = Illuminated twist-to-release 60 mm emergency stop

Key Release Code

Blank = MS1
MS2 = MS2
MS3 = MS3
MS4 = MS4
MS5 = MS5
MS6 = MS6
MS7 = MS7
MS8 = MS8
RS = Ronis (45 and 60 mm only)

Contact Blocks

K10 = NO
K10P = NO, early-make
K01 = NC
K01D = NC, late-break
CK10 = NO
CK01 = NC
CK01D = NC, late-break
Ck20 = 2NO
CK02 = 2NC
CK11 = NO-NC

Light Units

12–30 Vac/Vdc
W = White
R = Red
G = Green
B = Blue
85–264 Vac
230W = White
230R = Red
230G = Green
230B = Blue

Product Selection

Non-Illuminated and Illuminated Emergency Stops

M22-PV-K01

M22-PVL-K01-R

Complete Devices

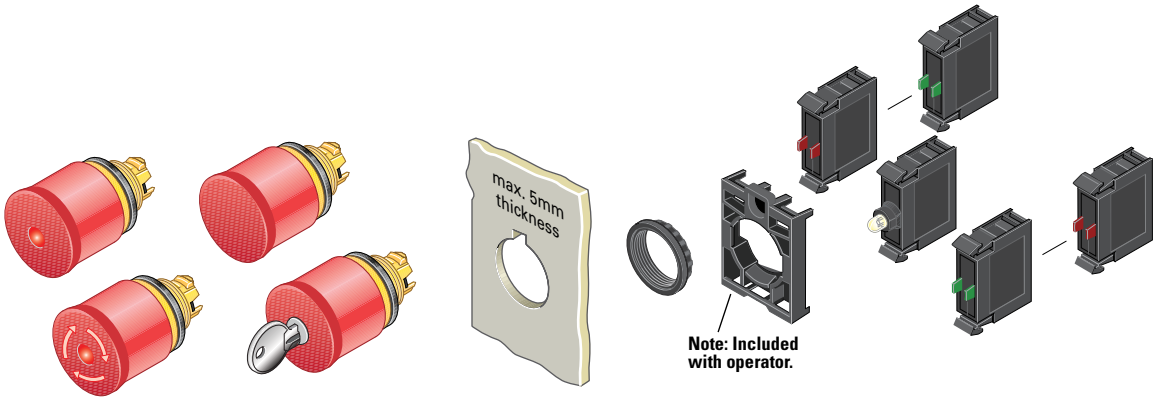
Type	Button Color	LED Color	Contact Block Configuration [1]	Light Unit Voltage	Catalog Number
Non-Illuminated					
Push-pull	Red	—	NC	—	**M22-PV-K01**
			2NC		**M22-PV-K02**
			1NO-2NC		**M22-PV-K12**
Twist-to-release	Red	—	NC	—	**M22-PVT-K01**
			2NC		**M22-PVT-K02**
			1NO-2NC		**M22-PVT-K12**
Key release	Red	—	NC	—	**M22-PVS-K01**
			2NC		**M22-PVS-K02**
			1NO-2NC		**M22-PVS-K12**
Illuminated					
Push-pull	Red	Red	NC	12–30 Vac/Vdc	**M22-PVL-K01-R**
			2NC		**M22-PVL-K02-R**
			1NO-2NC		**M22-PVL-K12-R**
			NC	85–264 Vac	**M22-PVL-K01-230R**
			2NC		**M22-PVL-K02-230R**
			1NO-2NC		**M22-PVL-K12-230R**
Twist-to-release	Red	Red	NC	12–30 Vac/Vdc	**M22-PVLT-K01-R**
			2NC		**M22-PVLT-K02-R**
			1NO-2NC		**M22-PVLT-K12-R**
			NC	85–264 Vac	**M22-PVLT-K01-230R**
			2NC		**M22-PVLT-K02-230R**
			1NO-2NC		**M22-PVLT-K12-230R**

Note

[1] All NC contact blocks are positively driven contact. ⊖

1

Non-Illuminated and Illuminated Emergency Stops



Components

M22-PVL

Push-Pull Emergency Stops

Illumination/Indication	Actuator Size	Catalog Number
None	35 mm	**M22-PV**
	45 mm	**M22-PV45P**
	60 mm	**M22-PV60P**
LED illumination	35 mm	**M22-PVL**
	45 mm	**M22-PVL45P**
	60 mm	**M22-PVL60P**
Mechanical indication	45 mm	**M22-PV45P-MPI**
	60 mm	**M22-PV60P-MPI**

M22-PVT45P-MPI

Twist-to-Release Emergency Stops

Illumination/Indication	Actuator Size	Catalog Number
None	35 mm	**M22-PVT**
	45 mm	**M22-PVT45P**
	60 mm	**M22-PVT60P**
LED illumination	35 mm	**M22-PVLT**
	45 mm	**M22-PVLT45P**
	60 mm	**M22-PVLT60P**
Mechanical indication	45 mm	**M22-PVT45P-MPI**
	60 mm	**M22-PVT60P-MPI**

M22S-PVLT

Machine Stop Operators (Black) ①

Illumination	Type	Actuator Size	Catalog Number
Non-illuminated	Push-pull	35 mm	**M22S-PV**
	Twist-to-release	35 mm	**M22S-PVT**
LED illumination	Push-pull	35 mm	**M22S-PVL**
	Twist-to-release	35 mm	**M22S-PVLT**

M22-PVS60P-MS1

Key Release Emergency Stops ②

Actuator Size	Key Code	Catalog Number
35 mm	MS1	**M22-PVS** ③
	MS2	**M22-PVS-MS2**
	MS3	**M22-PVS-MS3**
	MS4	**M22-PVS-MS4**
	MS5	**M22-PVS-MS5**
	MS6	**M22-PVS-MS6**
	MS7	**M22-PVS-MS7**
	MS8	**M22-PVS-MS8**
45 mm	MS1	**M22-PVS45P**
	MS2	**M22-PVS45P-MS2**
	MS3	**M22-PVS45P-MS3**
	MS4	**M22-PVS45P-MS4**
	MS5	**M22-PVS45P-MS5**
	MS6	**M22-PVS45P-MS6**
	MS7	**M22-PVS45P-MS7**
	MS8	**M22-PVS45P-MS8**
	Ronis	**M22-PVS45P-RS**
60 mm	MS1	**M22-PVS60P**
	MS2	**M22-PVS60P-MS2**
	MS3	**M22-PVS60P-MS3**
	MS4	**M22-PVS60P-MS4**
	MS5	**M22-PVS60P-MS5**
	MS6	**M22-PVS60P-MS6**
	MS7	**M22-PVS60P-MS7**
	MS8	**M22-PVS60P-MS8**
	Ronis	**M22-PVS60P-RS**

Notes

① Includes contact block mounting adapter.

② Key included. For identical locks and keys, use the same key code. One key is included with actuator; additional keys are available as accessories.

③ Includes Key Code MS1.

Maximum number of contacts: four M22-(C)K01,…10, or two M22-(C)K02,…20, …11.
Refer to IL or technical data sheet for more information.

Contact Blocks [1]

M22-K10

Terminal Type	Mounting Location [2]	Contact Configuration [3]	Catalog Number
Screw	Front	NO	**M22-K10**
		NO, early-make	**M22-K10P**
		NC	**M22-K01**
		NC, late-break	**M22-K01D**
		NC [4]	**M22-K01PV6**
		SMCB, NC	**M22-K01SMC10**
		SMCB, 2NC	**M22-K02SMC10**
	Base	SMCB, NC	**M22-KC01SMC10**
		SMCB, 2NC	**M22-KC02SMC10**

M22-K01SMC10

Self-monitoring (1NC and 1NO in series)	Front	1NC	**M22-K01SMC10**
		2NC	**M22-K02SMC10**
	Base	1NC	**M22-KC01SMC10**
		2NC	**M22-KC02SMC10**

FK01SMC10

Self-monitoring spring-cage		NC	**M22-FK01SMC10**
		3NC	**M22-AFK03SMC10**

M22-FK01

Spring-cage	Front	NO	**M22-CK10**
		NC	**M22-CK01**
		NC, late-break	**M22-CK01D**
		2NO	**M22-CK20**
		2NC	**M22-CK02**
		NO-NC	**M22-CK11**
		NC	**M22-FK01** [5]
		NO	**M22-FK10** [5]

Light Units [1]

M22-LED-W

M22-FLED-_

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red	12–30 Vac/Vdc	**M22-LED-R**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red	85–264 Vac	**M22-LED230-R**
Screw	White	207–264 Vac	**M22-LED230H-W**
	Red	207–264 Vac	**M22-LED230H-R**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red	12–30 Vac/Vdc	**M22-FLED-R**

M22-ES-MS1

Extra Keys [6]

For Key Code	Catalog Number
MS1	**M22-ES-MS1**
MS2	**M22-ES-MS2**
MS3	**M22-ES-MS3**
MS4	**M22-ES-MS4**
MS5	**M22-ES-MS5**
MS6	**M22-ES-MS6**
MS7	**M22-ES-MS7**
MS8	**M22-ES-MS8**

Accessories

M22-XGPV

M22G-XGPV

M22-MGTA

M22-PL-PV

M22-XPV60-Y-120

Description	Voltage	Catalog Number
Yellow guard ring	—	**M22-XGPV**
Gray guard ring	—	**M22G-XGPV**
Rectangular guard	—	**M22-MGTA**
Sealing shroud	—	**M22-PL-PV**
Illuminated ring	24 Vac/Vdc	**M22-XPV60-Y-24**
	120 Vac	**M22-XPV60-Y-120**
	230 Vac	**M22-XPV60-Y-230**

Notes

[1] For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
[2] Self-monitoring contact blocks (SMCB type) cannot be used with illuminated emergency stops.
[3] All NC contact blocks are positively driven contact. ⊖
[4] Allows up to six contact blocks to be utilized, For use only with only M22-PV_.
[5] Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.
[6] For use with key release operators only. One key included with operator.

Maximum number of contacts: four M22-(C)K01,…10, or two M22-(C)K02,…20, …11.
Refer to IL or technical data sheet for more information.

1

Selector Switches

Contents

Description	*Page*
Selector Switches	
Non-Illuminated Switches	**V7-T1-79**
Illuminated Switches	**V7-T1-84**
Key Operated	**V7-T1-88**

Selector Switches

Product Description

Eaton's M22 selector switch line offers an almost endless variety of options in maintained/momentary, key-removal and illuminated devices. The coding adapters used for maintained/momentary and key removal positions make the M22 stand out from competitive devices. By simply adding or removing a coding adapter from inside the operator, the end-user can change the function of the button. Operator options include standard knob, rotary head, illuminated and keyed versions. As with all operators, they can be ordered as a ready to install complete device or as modular components to meet application specific requirements.

Features

- Adding or removing coding adapters allows for field convertibility of maintained/momentary and key removal positions
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- More than 100,000 mechanical operations
- Coding adapter options make assembly fast and simplify stocking of different configurations of selector switches
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP66
- NEMA 4X, 13

1

Catalog Number Selection

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

Non-Illuminated Selector Switches

M22 – WRK _ – X91 – K10

Bezel
- **M22** = Silver
- **M22S** = Black
- **M22M** = Metal

Handle Type ①
- **W** = Momentary rotary
- **WK** = Momentary knob
- **WKV** = Maintained V-position knob
- **WR** = Maintained rotary
- **WRK** = Maintained knob

① All momentary selector switches can be converted in the field to maintained operation with the removal of a color-coded adapter.

Number of Positions
- **Blank** = Two-position
- **3** = Three-position
- **4** = Four-position

Inscription ②
- **X91** = AUTO-HAND
- **X92** = II-I

② Rotary type only.

Contact Blocks
- **K10** = NO
- **K10P** = NO, early-make

Options
- **K11** = NO-NC
- **K22** = 2NO-2NC
- **K20** = 2NO
- **K02** = 2NC

1

Product Selection

Non-Illuminated Selector Switches

M22-WKV-K10

M22M-WKV-K10

Complete Devices, Knob Type ①

Type	Switching Position	Contact Block Configuration ②	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Two-position	Maintained 40°	NO	**M22-WRK-K10**	**M22S-WRK-K10**	**M22M-WRK-K10**
		1NO-1NC	**M22-WRK-K11**	**M22S-WRK-K11**	**M22M-WRK-K11**
		2NO-2NC	**M22-WRK-K22**	**M22S-WRK-K22**	**M22M-WRK-K22**
	Maintained V 60°	NO	**M22-WKV-K10**	**M22S-WKV-K10**	**M22M-WKV-K10**
		1NO-1NC	**M22-WKV-K11**	**M22S-WKV-K11**	**M22M-WKV-K11**
		2NO-2NC	**M22-WKV-K22**	**M22S-WKV-K22**	**M22M-WKV-K22**
Three-position	Maintained 0 60° I II 60°	2NO	**M22-WRK3-K20**	**M22S-WRK3-K20**	**M22M-WRK3-K20**
		2NO-2NC	**M22-WRK3-K22**	**M22S-WRK3-K22**	**M22M-WRK3-K22**

Notes

① Includes contact block mounting adapter.

② All NC contact blocks are positively driven contact. ⊖

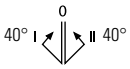
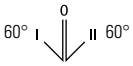
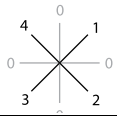
Non-Illuminated Selector Switches

Components

M22-WK

M22M-WK

Operators Only, Knob Type ①

Type	Switching Position	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Two-position	Momentary ②	**M22-WK**	**M22S-WK**	**M22M-WK**
	Maintained	**M22-WRK**	**M22S-WRK**	**M22M-WRK**
	Maintained V	**M22-WKV**	**M22S-WKV**	**M22M-WKV**
Three-position	Momentary ② 	**M22-WK3**	**M22S-WK3**	**M22M-WK3**
	Maintained 	**M22-WRK3**	**M22S-WRK3**	**M22M-WRK3**
	Maintained, return from left	**M22-WRK3-2**	**M22S-WRK3-2**	**M22M-WRK3-2**
	Maintained, return from right	**M22-WRK3-1**	**M22S-WRK3-1**	**M22M-WRK3-1**
Four-position	Maintained 	**M22-WRK4**	**M22S-WRK4**	**M22M-WRK4**

Notes

① Includes contact block mounting adapter.

② Momentary selector switches can be converted in the field to maintained operation with the removal of a color coded adapter. See **Page V7-T1-118**.

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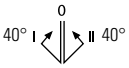
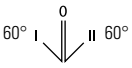
Non-Illuminated Selector Switches

Components

M22S-WR3-X94

Operators Only, Rotary Type ①

Type	Switching Position	Inscription	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Two-position	Momentary ②	I-O	**M22-W**	**M22S-W**	**M22M-W**
	Maintained	I-O	**M22-WR**	**M22S-WR**	**M22M-WR**
		Custom	**M22-WR-ETCH** ③	**M22S-WR-ETCH** ③	**M22M-WR-ETCH** ③
		AUTO-HAND	**M22-WR-X91**	**M22S-WR-X91**	**M22M-WR-X91**
		II-I	**M22-WR-X92**	**M22S-WR-X92**	**M22M-WR-X92**
Three-position	Momentary ② 	I-O-II	**M22-W3**	**M22S-W3**	**M22M-W3**
	Maintained 	I-O-II	**M22-WR3**	**M22S-WR3**	**M22M-WR3**
		Custom	**M22-WR3-ETCH** ③	**M22S-WR3-ETCH** ③	**M22M-WR3-ETCH** ③
		AUTO-O-MAN	**M22-WR3-X94**	**M22S-WR3-X94**	**M22M-WR3-X94**
Four-position	Maintained	0-1-0-2-0-3-0-4	**M22-WR4**	**M22S-WR4**	**M22M-WR4**

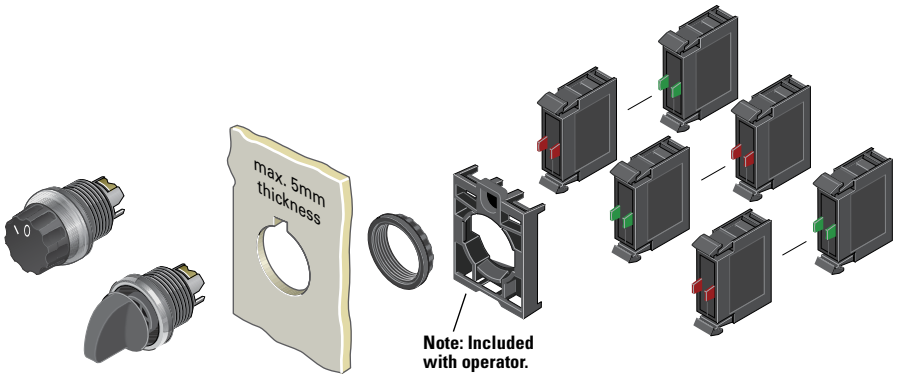
Notes

① Includes contact block mounting adapter.

② Momentary selector switches can be converted in the field to maintained operation with the removal of a color coded adapter. See **Page V7-T1-118**.

③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-WR3-ETCH; Order Notes: Mark with symbol X88, Line item #_.

Non-Illuminated Selector Switches



Components

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ②	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ③
	NO	**M22-FK10** ③

Accessories

	Description	Catalog Number
M22-XW	Plunger bridge ④	**M22-XW**
M22-XWS	Key cover	**M22-XWS**
M22-XC-R	Key withdraw adapter ⑤	**M22-XC-R**
M22-XC-Y	Coding adapter	**M22-XC-Y**
M22-XGWK	Guard ring	**M22-XGWK**

Notes

① For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

② All NC contact blocks are positively driven contact. ⊖

③ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

④ Plunger needed to actuate center-mounted contact blocks. Used for non-illuminated three-position selector switches only.

⑤ Enables a keyed selector switch to be set to user-selected key withdraw position.

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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.

Illuminated Selector Switches

M22 – WLK – R – K10 – R

Bezel
M22 = Silver
M22S = Black
M22M = Metal

Handle Type
WLK = Illuminated knob type momentary, two-position
WLKV = Illuminated Knob type momentary, V-position
WLK3 = Illuminated knob type momentary, three-position

Handle Color
W = White
R = Red
G = Green
Y = Yellow
B = Blue

Contact Blocks	
K10 = 1NO	**K30** = 3NO
K01 = 1NC	**K03** = 3NC
K20 = 2NO	**K21** = 2NO-1NC
K02 = 2NC	**K12** = 1NO-2NC
K11 = 1NO-1NC	

Light Units
12–30 Vac/Vdc
W = White
R = Red
G = Green
B = Blue
85–264 Vac
230W = White
230R = Red
230G = Green
230B = Blue

Product Selection

Illuminated Selector Switches

Components

M22-WLK-W

Operators Only, Knob Type ①

Type	Switching Position	Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Two-position	Momentary ② 40°	White	**M22-WLK-W**	**M22S-WLK-W**	**M22M-WLK-W**
		Red	**M22-WLK-R**	**M22S-WLK-R**	**M22M-WLK-R**
		Green	**M22-WLK-G**	**M22S-WLK-G**	**M22M-WLK-G**
		Yellow	**M22-WLK-Y**	**M22S-WLK-Y**	**M22M-WLK-Y**
		Blue	**M22-WLK-B**	**M22S-WLK-B**	**M22M-WLK-B**
	Maintained 40°	White	**M22-WRLK-W**	**M22S-WRLK-W**	**M22M-WRLK-W**
		Red	**M22-WRLK-R**	**M22S-WRLK-R**	**M22M-WRLK-R**
		Green	**M22-WRLK-G**	**M22S-WRLK-G**	**M22M-WRLK-G**
		Yellow	**M22-WRLK-Y**	**M22S-WRLK-Y**	**M22M-WRLK-Y**
		Blue	**M22-WRLK-B**	**M22S-WRLK-B**	**M22M-WRLK-B**
	Maintained V 60°	White	**M22-WLKV-W**	**M22S-WLKV-W**	**M22M-WLKV-W**
		Red	**M22-WLKV-R**	**M22S-WLKV-R**	**M22M-WLKV-R**
		Green	**M22-WLKV-G**	**M22S-WLKV-G**	**M22M-WLKV-G**
		Yellow	**M22-WLKV-Y**	**M22S-WLKV-Y**	**M22M-WLKV-Y**
		Blue	**M22-WLKV-B**	**M22S-WLKV-B**	**M22M-WLKV-B**

Notes

① Includes contact block mounting adapter.

② Momentary selector switches can be converted in the field to maintained operation with the removal of a color coded adapter. See **Page V7-T1-118**.

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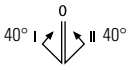
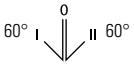
Illuminated Selector Switches

Components

M22-WLK3-W

Operators Only, Knob Type ①

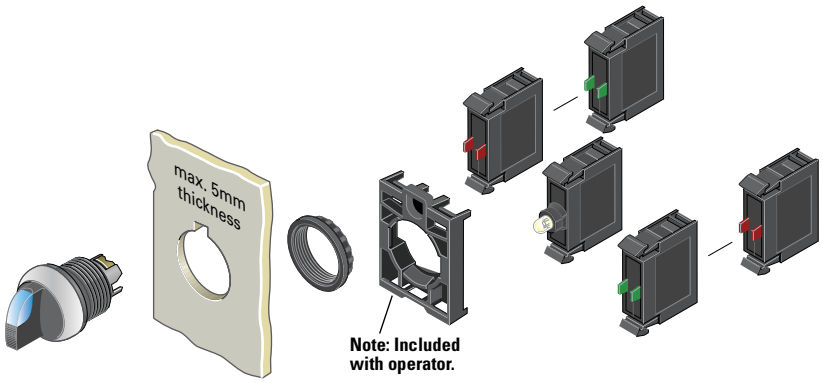
Type	Switching Position	Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Three-position	Momentary ② 	White	**M22-WLK3-W**	**M22S-WLK3-W**	**M22M-WLK3-W**
		Red	**M22-WLK3-R**	**M22S-WLK3-R**	**M22M-WLK3-R**
		Green	**M22-WLK3-G**	**M22S-WLK3-G**	**M22M-WLK3-G**
		Yellow	**M22-WLK3-Y**	**M22S-WLK3-Y**	**M22M-WLK3-Y**
		Blue	**M22-WLK3-B**	**M22S-WLK3-B**	**M22M-WLK3-B**
	Maintained 	White	**M22-WRLK3-W**	**M22S-WRLK3-W**	**M22M-WRLK3-W**
		Red	**M22-WRLK3-R**	**M22S-WRLK3-R**	**M22M-WRLK3-R**
		Green	**M22-WRLK3-G**	**M22S-WRLK3-G**	**M22M-WRLK3-G**
		Yellow	**M22-WRLK3-Y**	**M22S-WRLK3-Y**	**M22M-WRLK3-Y**
		Blue	**M22-WRLK3-B**	**M22S-WRLK3-B**	**M22M-WRLK3-B**
	Maintained, return from right	White	**M22-WRLK3-1-W**	**M22S-WRLK3-1-W**	**M22M-WRLK3-1-W**
		Red	**M22-WRLK3-1-R**	**M22S-WRLK3-1-R**	**M22M-WRLK3-1-R**
		Green	**M22-WRLK3-1-G**	**M22S-WRLK3-1-G**	**M22M-WRLK3-1-G**
		Yellow	**M22-WRLK3-1-Y**	**M22S-WRLK3-1-Y**	**M22M-WRLK3-1-Y**
		Blue	**M22-WRLK3-1-B**	**M22S-WRLK3-1-B**	**M22M-WRLK3-1-B**
	Maintained, return from left	White	**M22-WRLK3-2-W**	**M22S-WRLK3-2-W**	**M22M-WRLK3-2-W**
		Red	**M22-WRLK3-2-R**	**M22S-WRLK3-2-R**	**M22M-WRLK3-2-R**
		Green	**M22-WRLK3-2-G**	**M22S-WRLK3-2-G**	**M22M-WRLK3-2-G**
		Yellow	**M22-WRLK3-2-Y**	**M22S-WRLK3-2-Y**	**M22M-WRLK3-2-Y**
		Blue	**M22-WRLK3-2-B**	**M22S-WRLK3-2-B**	**M22M-WRLK3-2-B**

Notes

① Includes contact block mounting adapter.

② Momentary selector switches can be converted in the field to maintained operation with the removal of a color coded adapter. See **Page V7-T1-118**.

Illuminated Selector Switches



M22-LED-W

M22-FLED-_

Light Units ①

Terminal Type	LED Color ②	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/Yellow	24 Vdc	**M22-FLED-RG** ③
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ③

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ④	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑤
	NO	**M22-FK10** ⑤

Accessories

	Description	Catalog Number
M22-XW	Plunger bridge ⑥	**M22-XW**
M22-XWS	Key cover	**M22-XWS**
M22-XC-R	Key withdraw adapter ⑦	**M22-XC-R**
M22-XC-Y	Coding adapter	**M22-XC-Y**
M22-XGWK	Guard ring	**M22-XGWK**

Notes

① For complete listing of available light units and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Select the same color LED element as lens color; for yellow lens, choose a white LED. Select a white lens if utilizing multi-color LED, M22-FLED-RG or M22-FLED-RGB.
③ Please see color input key on **Page V7-T1-114**.
④ All NC contact blocks are positively driven contact. ⊖
⑤ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.
⑥ Plunger needed to actuate center-mounted contact blocks. Used for non-illuminated three-position selector switches only.
⑦ Enables a keyed selector switch to be set to user-selected key withdraw position.

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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.

Key-Operated Selector Switches

M22 – WS – MS2 – A1

Bezel	Handle Type	Key Code	Key Removal Position
M22 = Silver **M22S** = Black **M22M** = Metal	**WS** = Two-position, momentary **WS3** = Three-position, momentary **WRS** = Two-position, maintained **WRS3** = Three-position, maintained	**Blank** = MS1 **MS2** = MS2 **MS3** = MS3 **MS4** = MS4 **MS5** = MS5 **MS6** = MS6 **MS7** = MS7 **MS8** = MS8	Refer to coding adapter assembly and functional test guide on **Page V7-T1-118**.

Product Selection

Key-Operated Selector Switches ①②

Components

M22-WS

M22S-WRS

Operators Only ③

Type	Switching Position	Key Removal Position	Key Code	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Two-position	Momentary ④ 40°	Return from right, key removable left	MS1	**M22-WS**	**M22S-WS**	**M22M-WS**
			MS2	**M22-WS-MS2**	**M22S-WS-MS2**	**M22M-WS-MS2**
			MS3	**M22-WS-MS3**	**M22S-WS-MS3**	**M22M-WS-MS3**
			MS4	**M22-WS-MS4**	**M22S-WS-MS4**	**M22M-WS-MS4**
			MS5	**M22-WS-MS5**	**M22S-WS-MS5**	**M22M-WS-MS5**
			MS6	**M22-WS-MS6**	**M22S-WS-MS6**	**M22M-WS-MS6**
			MS7	**M22-WS-MS7**	**M22S-WS-MS7**	**M22M-WS-MS7**
			MS8	**M22-WS-MS8**	**M22S-WS-MS8**	**M22M-WS-MS8**
Two-position	Maintained 40°	Key removable left	MS1	**M22-WRS-A1**	**M22S-WRS-A1**	**M22M-WRS-A1**
			MS2	**M22-WRS-MS2-A1**	**M22S-WRS-MS2-A1**	**M22M-WRS-MS2-A1**
			MS3	**M22-WRS-MS3-A1**	**M22S-WRS-MS3-A1**	**M22M-WRS-MS3-A1**
			MS4	**M22-WRS-MS4-A1**	**M22S-WRS-MS4-A1**	**M22M-WRS-MS4-A1**
			MS5	**M22-WRS-MS5-A1**	**M22S-WRS-MS5-A1**	**M22M-WRS-MS5-A1**
			MS6	**M22-WRS-MS6-A1**	**M22S-WRS-MS6-A1**	**M22M-WRS-MS6-A1**
			MS7	**M22-WRS-MS7-A1**	**M22S-WRS-MS7-A1**	**M22M-WRS-MS7-A1**
			MS8	**M22-WRS-MS8-A1**	**M22S-WRS-MS8-A1**	**M22M-WRS-MS8-A1**
		Key removable left/right	MS1	**M22-WRS**	**M22S-WRS**	**M22M-WRS**
			MS2	**M22-WRS-MS2**	**M22S-WRS-MS2**	**M22M-WRS-MS2**
			MS3	**M22-WRS-MS3**	**M22S-WRS-MS3**	**M22M-WRS-MS3**
			MS4	**M22-WRS-MS4**	**M22S-WRS-MS4**	**M22M-WRS-MS4**
			MS5	**M22-WRS-MS5**	**M22S-WRS-MS5**	**M22M-WRS-MS5**
			MS6	**M22-WRS-MS6**	**M22S-WRS-MS6**	**M22M-WRS-MS6**
			MS7	**M22-WRS-MS7**	**M22S-WRS-MS7**	**M22M-WRS-MS7**
			MS8	**M22-WRS-MS8**	**M22S-WRS-MS8**	**M22M-WRS-MS8**

Notes

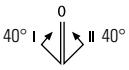
① Includes one key.
② Key removal positions can be modified in the field using coding adapters; see chart on **Page V7-T1-118**.
③ Includes contact block mounting adapter.
④ Momentary selector switches can be converted in the field to maintained operation with the removal of a color coded adapter. See **Page V7-T1-118**.

Key-Operated Selector Switches ①②
Components

M22-WS3-X93

M22M-WS3-X93

Operators Only, continued ③

Type	Switching Position	Key Removal Position	Key Code	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Three-position	Momentary ④ 	Return from left/right, key removable center	MS1	**M22-WS3**	**M22S-WS3**	**M22M-WS3**
			MS2	**M22-WS3-MS2**	**M22S-WS3-MS2**	**M22M-WS3-MS2**
			MS3	**M22-WS3-MS3**	**M22S-WS3-MS3**	**M22M-WS3-MS3**
			MS4	**M22-WS3-MS4**	**M22S-WS3-MS4**	**M22M-WS3-MS4**
			MS5	**M22-WS3-MS5**	**M22S-WS3-MS5**	**M22M-WS3-MS5**
			MS6	**M22-WS3-MS6**	**M22S-WS3-MS6**	**M22M-WS3-MS6**
			MS7	**M22-WS3-MS7**	**M22S-WS3-MS7**	**M22M-WS3-MS7**
			MS8	**M22-WS3-MS8**	**M22S-WS3-MS8**	**M22M-WS3-MS8**
Three-position	Maintained	Key removable left/center/right	MS1	**M22-WRS3-A1**	**M22S-WRS3-A1**	**M22M-WRS3-A1**
			MS2	**M22-WRS3-MS2-A1**	**M22S-WRS3-MS2-A1**	**M22M-WRS3-MS2-A1**
			MS3	**M22-WRS3-MS3-A1**	**M22S-WRS3-MS3-A1**	**M22M-WRS3-MS3-A1**
			MS4	**M22-WRS3-MS4-A1**	**M22S-WRS3-MS4-A1**	**M22M-WRS3-MS4-A1**
			MS5	**M22-WRS3-MS5-A1**	**M22S-WRS3-MS5-A1**	**M22M-WRS3-MS5-A1**
			MS6	**M22-WRS3-MS6-A1**	**M22S-WRS3-MS6-A1**	**M22M-WRS3-MS6-A1**
			MS7	**M22-WRS3-MS7-A1**	**M22S-WRS3-MS7-A1**	**M22M-WRS3-MS7-A1**
			MS8	**M22-WRS3-MS8-A1**	**M22S-WRS3-MS8-A1**	**M22M-WRS3-MS8-A1**
		Key removable center/left	MS1	**M22-WRS3-A2**	**M22S-WRS3-A2**	**M22M-WRS3-A2**
			MS2	**M22-WRS3-MS2-A2**	**M22S-WRS3-MS2-A2**	**M22M-WRS3-MS2-A2**
			MS3	**M22-WRS3-MS3-A2**	**M22S-WRS3-MS3-A2**	**M22M-WRS3-MS3-A2**
			MS4	**M22-WRS3-MS4-A2**	**M22S-WRS3-MS4-A2**	**M22M-WRS3-MS4-A2**
			MS5	**M22-WRS3-MS5-A2**	**M22S-WRS3-MS5-A2**	**M22M-WRS3-MS5-A2**
			MS6	**M22-WRS3-MS6-A2**	**M22S-WRS3-MS6-A2**	**M22M-WRS3-MS6-A2**
			MS7	**M22-WRS3-MS7-A2**	**M22S-WRS3-MS7-A2**	**M22M-WRS3-MS7-A2**
			MS8	**M22-WRS3-MS8-A2**	**M22S-WRS3-MS8-A2**	**M22M-WRS3-MS8-A2**
		Key removable center/right	MS1	**M22-WRS3-A3**	**M22S-WRS3-A3**	**M22M-WRS3-A3**
			MS2	**M22-WRS3-MS2-A3**	**M22S-WRS3-MS2-A3**	**M22M-WRS3-MS2-A3**
			MS3	**M22-WRS3-MS3-A3**	**M22S-WRS3-MS3-A3**	**M22M-WRS3-MS3-A3**
			MS4	**M22-WRS3-MS4-A3**	**M22S-WRS3-MS4-A3**	**M22M-WRS3-MS4-A3**
			MS5	**M22-WRS3-MS5-A3**	**M22S-WRS3-MS5-A3**	**M22M-WRS3-MS5-A3**
			MS6	**M22-WRS3-MS6-A3**	**M22S-WRS3-MS6-A3**	**M22M-WRS3-MS6-A3**
			MS7	**M22-WRS3-MS7-A3**	**M22S-WRS3-MS7-A3**	**M22M-WRS3-MS7-A3**
			MS8	**M22-WRS3-MS8-A3**	**M22S-WRS3-MS8-A3**	**M22M-WRS3-MS8-A3**
		Key removable left/right	MS1	**M22-WRS3**	**M22S-WRS3**	**M22M-WRS3**
			MS2	**M22-WRS3-MS2**	**M22S-WRS3-MS2**	**M22M-WRS3-MS2**
			MS3	**M22-WRS3-MS3**	**M22S-WRS3-MS3**	**M22M-WRS3-MS3**
			MS4	**M22-WRS3-MS4**	**M22S-WRS3-MS4**	**M22M-WRS3-MS4**
			MS5	**M22-WRS3-MS5**	**M22S-WRS3-MS5**	**M22M-WRS3-MS5**
			MS6	**M22-WRS3-MS6**	**M22S-WRS3-MS6**	**M22M-WRS3-MS6**
			MS7	**M22-WRS3-MS7**	**M22S-WRS3-MS7**	**M22M-WRS3-MS7**
			MS8	**M22-WRS3-MS8**	**M22S-WRS3-MS8**	**M22M-WRS3-MS8**

Notes

① Includes one key.

② Key removal positions can be modified in the field using coding adapters; see chart on **Page V7-T1-118**.

③ Includes contact block mounting adapter.

④ Momentary selector switches can be converted in the field to maintained operation with the removal of a color coded adapter. See **Page V7-T1-118**.

1

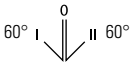
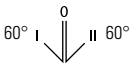
Key-Operated Selector Switches [1][2]

Components

M22-WS3-X93

M22M-WS3-X93

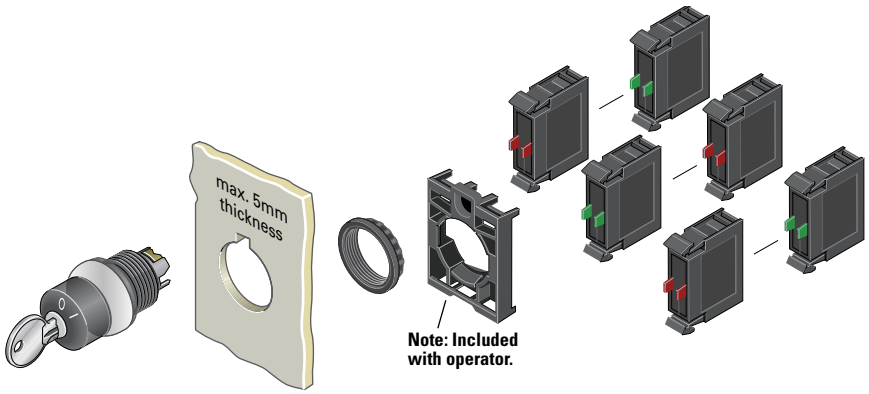
Operators Only, continued [3]

Type	Switching Position	Key Removal Position	Key Code	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Three-position	Maintained 	Return from left, key removable center	MS1	**M22-WRS3-A7**	**M22S-WRS3-A7**	**M22M-WRS3-A7**
			MS2	**M22-WRS3-MS2-A7**	**M22S-WRS3-MS2-A7**	**M22M-WRS3-MS2-A7**
			MS3	**M22-WRS3-MS3-A7**	**M22S-WRS3-MS3-A7**	**M22M-WRS3-MS3-A7**
			MS4	**M22-WRS3-MS4-A7**	**M22S-WRS3-MS4-A7**	**M22M-WRS3-MS4-A7**
			MS5	**M22-WRS3-MS5-A7**	**M22S-WRS3-MS5-A7**	**M22M-WRS3-MS5-A7**
			MS6	**M22-WRS3-MS6-A7**	**M22S-WRS3-MS6-A7**	**M22M-WRS3-MS6-A7**
			MS7	**M22-WRS3-MS7-A7**	**M22S-WRS3-MS7-A7**	**M22M-WRS3-MS7-A7**
			MS8	**M22-WRS3-MS8-A7**	**M22S-WRS3-MS8-A7**	**M22M-WRS3-MS8-A7**
		Return from left, key removable center/right	MS1	**M22-WRS3-A6**	**M22S-WRS3-A6**	**M22M-WRS3-A6**
			MS2	**M22-WRS3-MS2-A6**	**M22S-WRS3-MS2-A6**	**M22M-WRS3-MS2-A6**
			MS3	**M22-WRS3-MS3-A6**	**M22S-WRS3-MS3-A6**	**M22M-WRS3-MS3-A6**
			MS4	**M22-WRS3-MS4-A6**	**M22S-WRS3-MS4-A6**	**M22M-WRS3-MS4-A6**
			MS5	**M22-WRS3-MS5-A6**	**M22S-WRS3-MS5-A6**	**M22M-WRS3-MS5-A6**
			MS6	**M22-WRS3-MS6-A6**	**M22S-WRS3-MS6-A6**	**M22M-WRS3-MS6-A6**
			MS7	**M22-WRS3-MS7-A6**	**M22S-WRS3-MS7-A6**	**M22M-WRS3-MS7-A6**
			MS8	**M22-WRS3-MS8-A6**	**M22S-WRS3-MS8-A6**	**M22M-WRS3-MS8-A6**
Three-position	Maintained 	Return from right, key removable left/center	MS1	**M22-WRS3-A4**	**M22S-WRS3-A4**	**M22M-WRS3-A4**
			MS2	**M22-WRS3-MS2-A4**	**M22S-WRS3-MS2-A4**	**M22M-WRS3-MS2-A4**
			MS3	**M22-WRS3-MS3-A4**	**M22S-WRS3-MS3-A4**	**M22M-WRS3-MS3-A4**
			MS4	**M22-WRS3-MS4-A4**	**M22S-WRS3-MS4-A4**	**M22M-WRS3-MS4-A4**
			MS5	**M22-WRS3-MS5-A4**	**M22S-WRS3-MS5-A4**	**M22M-WRS3-MS5-A4**
			MS6	**M22-WRS3-MS6-A4**	**M22S-WRS3-MS6-A4**	**M22M-WRS3-MS6-A4**
			MS7	**M22-WRS3-MS7-A4**	**M22S-WRS3-MS7-A4**	**M22M-WRS3-MS7-A4**
			MS8	**M22-WRS3-MS8-A4**	**M22S-WRS3-MS8-A4**	**M22M-WRS3-MS8-A4**
		Return from right, key removable center	MS1	**M22-WRS3-A5**	**M22S-WRS3-A5**	**M22M-WRS3-A5**
			MS2	**M22-WRS3-MS2-A5**	**M22S-WRS3-MS2-A5**	**M22M-WRS3-MS2-A5**
			MS3	**M22-WRS3-MS3-A5**	**M22S-WRS3-MS3-A5**	**M22M-WRS3-MS3-A5**
			MS4	**M22-WRS3-MS4-A5**	**M22S-WRS3-MS4-A5**	**M22M-WRS3-MS4-A5**
			MS5	**M22-WRS3-MS5-A5**	**M22S-WRS3-MS5-A5**	**M22M-WRS3-MS5-A5**
			MS6	**M22-WRS3-MS6-A5**	**M22S-WRS3-MS6-A5**	**M22M-WRS3-MS6-A5**
			MS7	**M22-WRS3-MS7-A5**	**M22S-WRS3-MS7-A5**	**M22M-WRS3-MS7-A5**
			MS8	**M22-WRS3-MS8-A5**	**M22S-WRS3-MS8-A5**	**M22M-WRS3-MS8-A5**

Notes

[1] Includes one key.
[2] Key removal positions can be modified in the field using coding adapters; see chart on **Page V7-T1-118**.
[3] Includes contact block mounting adapter.

Key-Operated Selector Switches



Components

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ②	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ③
	NO	**M22-FK10** ③

M22-ES-MS1

Extra Keys

Key Code	Catalog Number
MS1	**M22-ES-MS1**
MS2	**M22-ES-MS2**
MS3	**M22-ES-MS3**
MS4	**M22-ES-MS4**
MS5	**M22-ES-MS5**
MS6	**M22-ES-MS6**
MS7	**M22-ES-MS7**
MS8	**M22-ES-MS8**

Accessories

	Description	Catalog Number
M22-XW	Plunger bridge ④	**M22-XW**
M22-XWS	Key cover	**M22-XWS**
M22-XC-R	Key withdraw adapter ⑤	**M22-XC-R**
M22-XC-Y	Coding adapter	**M22-XC-Y**
M22-XGWK	Guard ring	**M22-XGWK**

Notes

① For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

② All NC contact blocks are positively driven contact. ⊖

③ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

④ Plunger needed to actuate center-mounted contact blocks. Used for non-illuminated three-position selector switches only.

⑤ Enables a keyed selector switch to be set to user-selected key withdraw position.

1

Mushroom Head Pushbuttons

Product Description

Eaton's M22 mushroom head operators are a durable and unique way to include standard pushbutton functionality. Like the standard pushbutton line, the maintained pushbuttons are field convertible to momentary. They also offer laser engraving and a robust five million mechanical operations on the standard momentary operator. As with all operators, they can be ordered as a ready to install complete device or as modular components.

Features

- Field convertible from maintained to momentary (available on maintained pushbuttons only)
- Customizable laser engraving on all buttons
- More than five million mechanical operations on momentary and one million on maintained pushbuttons
- Modular construction makes assembly fast and simplifies stocking of components and complete devices
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP67, IP69K
- NEMA 4X, 13

1

Catalog Number Selection

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

Mushroom Head Pushbuttons

M22 – DP – R – GB4 – K01

Bezel
M22 = Silver
M22S = Black
M22M = Metal

Operator Type
DP = Non-illuminated momentary mushroom head pushbutton
DRP = Non-illuminated maintained mushroom head pushbutton

Operator Color
R = Red
S = Black
G = Green
Y = Yellow

Plate Inscription	
ETCH = Custom ①	**X0** = ◎
GB0 = STOP	**X1** = ⓘ
GB1 = START	**X4** = ⊕
GB3 = UP	**X5** = ⊖
GB4 = DOWN	**X6** = Ⓡ
GB5 = OFF	**X7** = ⓣ
GB6 = ON	
GB15 = FORWARD	
GB16 = REVERSE	

Contact Blocks
K01 = NC
K10 = NO
K11 = NO-NC
K12 = 1NO-2NC

① When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-DP-R-ETCH; Order Notes: Mark with symbol X91, Line item #_.

1

Product Selection

Mushroom Head Pushbuttons, Momentary ①

M22-DP-R-K01

M22S-DP-R-K01

M22M-DP-R-K01

Complete Devices

Button Color	Contact Block Configuration ②	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	NC	**M22-DP-R-K01**	**M22S-DP-R-K01**	**M22M-DP-R-K01**
	2NC	**M22-DP-R-K02**	**M22S-DP-R-K02**	**M22M-DP-R-K02**
	1NO-2NC	**M22-DP-R-K12**	**M22S-DP-R-K12**	**M22M-DP-R-K12**
	1NO-1NC	**M22-DP-R-K11**	**M22S-DP-R-K11**	**M22M-DP-R-K11**

M22-DP-G

M22S-DP-G

M22M-DP-G

Operators Only ②

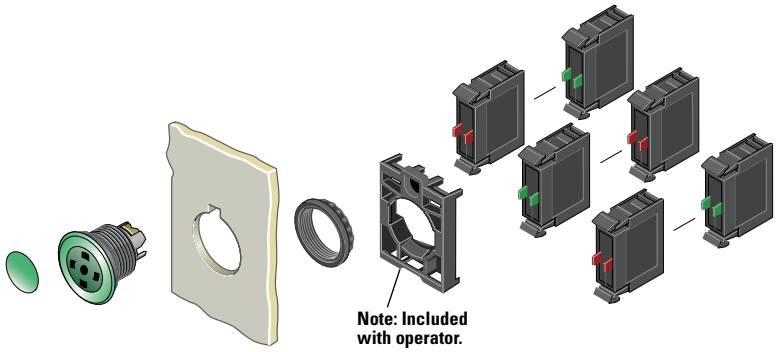
Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	**M22-DP-S**	**M22S-DP-S**	**M22M-DP-S**
Red	**M22-DP-R**	**M22S-DP-R**	**M22M-DP-R**
Green	**M22-DP-G**	**M22S-DP-G**	**M22M-DP-G**
Yellow	**M22-DP-Y**	**M22S-DP-Y**	**M22M-DP-Y**

Notes

① 35 mm diameter mushroom head button.

② Includes contact block mounting adapter. ⊖

Non-Illuminated Mushroom Head Pushbuttons, Momentary ①



Components

M22-XDP-G

Mushroom Head Plates

Color	Inscription	Catalog Number
Black	—	**M22-XDP-S** ②
	Custom	**M22-XDP-S-ETCH** ③
	STOP	**M22-XDP-S-GB0**
	START	**M22-XDP-S-GB1**
	FORWARD	**M22-XDP-S-GB15**
	REVERSE	**M22-XDP-S-GB16**
	UP	**M22-XDP-S-GB3**
	DOWN	**M22-XDP-S-GB4**
	OFF	**M22-XDP-S-GB5**
	ON	**M22-XDP-S-GB6**
	◎	**M22-XDP-S-X0**
	⏽	**M22-XDP-S-X1**
	⊕	**M22-XDP-S-X4**
	⊖	**M22-XDP-S-X5**
	⏽	**M22-XDP-S-X7**
Red	—	**M22-XDP-R** ②
	Custom	**M22-XDP-R-ETCH** ③
	STOP	**M22-XDP-R-GB0**
	OFF	**M22-XDP-R-GB5**
	◎	**M22-XDP-R-X0**
Green	—	**M22-XDP-G** ②
	Custom	**M22-XDP-G-ETCH** ③
	START	**M22-XDP-G-GB1**
	ON	**M22-XDP-G-GB6**
	◎	**M22-XDP-G-X0**
	⏽	**M22-XDP-G-X1**
White	—	**M22-XDP-W** ②
	Custom	**M22-XDP-W-ETCH** ③
Yellow	—	**M22-XDP-Y** ②
	Custom	**M22-XDP-Y-ETCH** ③

M22-DP-G-X

Insertless Mushroom Head Operators

Bezel	Color	Catalog Number
Silver	Black	**M22-DP-S-X**
	Red	**M22-DP-R-X**
	Green	**M22-DP-G-X**
	Yellow	**M22-DP-Y-X**
Black	Black	**M22S-DP-S-X**
	Red	**M22S-DP-R-X**
	Green	**M22S-DP-G-X**
	Yellow	**M22S-DP-Y-X**
Metal	Black	**M22M-DP-S-X**
	Red	**M22M-DP-R-X**
	Green	**M22M-DP-G-X**
	Yellow	**M22M-DP-Y-X**

M22-K10

M22-FK01

Contact Blocks ④

Terminal Type	Contact Configuration ⑤	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑥
	NO	**M22-FK10** ⑥

Notes

① 35 mm diameter mushroom head button.
② Minimum order quantity of (10).
③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XDP-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.
④ For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
⑤ All NC contact blocks are positively driven contact. ⊖
⑥ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Product Selection

Non-Illuminated Mushroom Head Pushbuttons, Maintained ①②

M22-DRP-R-K01

M22S-DRP-R-K01

M22M-DRP-R-K01

Complete Devices

Button Color	Contact Block Configuration ③	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Red	NC	**M22-DRP-R-K01**	**M22S-DRP-R-K01**	**M22M-DRP-R-K01**
	2NC	**M22-DRP-R-K02**	**M22S-DRP-R-K02**	**M22M-DRP-R-K02**
	1NO-2NC	**M22-DRP-R-K12**	**M22S-DRP-R-K12**	**M22M-DRP-R-K12**
	1NO-1NC	**M22-DRP-R-K11**	**M22S-DRP-R-K11**	**M22M-DRP-R-K11**

M22-DRP-G

M22S-DRP-G

M22M-DRP-G

Operators Only

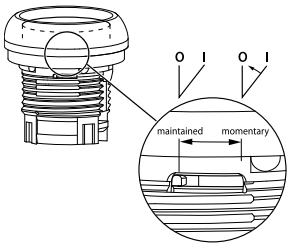
Button Color	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Black	**M22-DRP-S**	**M22S-DRP-S**	**M22M-DRP-S**
Red	**M22-DRP-R**	**M22S-DRP-R**	**M22M-DRP-R**
Green	**M22-DRP-G**	**M22S-DRP-G**	**M22M-DRP-G**
Yellow	**M22-DRP-Y**	**M22S-DRP-Y**	**M22M-DRP-Y**

Notes

① 35 mm diameter mushroom head button.

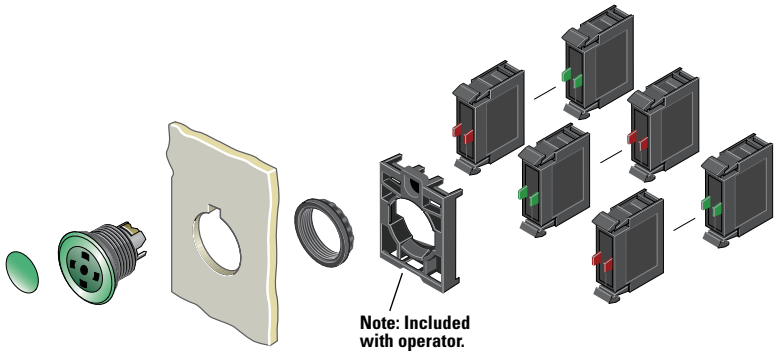
② Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

③ All NC contact blocks are positively driven contact. ⊖



Note: This pilot device features a selectable function switch that enables the device to be set to either maintained or momentary operation.

Non-Illuminated Mushroom Head Pushbuttons, Maintained ①②



Components

M22-XDP-G

Mushroom Head Plates ③

Color	Inscription	Catalog Number
Black	—	**M22-XDP-S** ④
	Custom	**M22-XDP-S-ETCH** ⑤
	STOP	**M22-XDP-S-GB0**
	START	**M22-XDP-S-GB1**
	FORWARD	**M22-XDP-S-GB15**
	REVERSE	**M22-XDP-S-GB16**
	UP	**M22-XDP-S-GB3**
	DOWN	**M22-XDP-S-GB4**
	OFF	**M22-XDP-S-GB5**
	ON	**M22-XDP-S-GB6**
	◎	**M22-XDP-S-X0**
	⏽	**M22-XDP-S-X1**
	⊕	**M22-XDP-S-X4**
	⊖	**M22-XDP-S-X5**
	⏽	**M22-XDP-S-X7**
Red	—	**M22-XDP-R** ④
	Custom	**M22-XDP-R-ETCH** ⑤
	STOP	**M22-XDP-R-GB0**
	OFF	**M22-XDP-R-GB5**
	◎	**M22-XDP-R-X0**
Green	—	**M22-XDP-G** ④
	Custom	**M22-XDP-G-ETCH** ⑤
	START	**M22-XDP-G-GB1**
	ON	**M22-XDP-G-GB6**
	◎	**M22-XDP-G-X0**
	⏽	**M22-XDP-G-X1**
White	—	**M22-XDP-W** ④
	Custom	**M22-XDP-W-ETCH** ⑤
Yellow	—	**M22-XDP-Y** ④
	Custom	**M22-XDP-Y-ETCH** ⑤

M22-DRP-G-X

Insertless Mushroom Head Operators

Bezel	Color	Catalog Number
Silver	Black	**M22-DRP-S-X**
	Red	**M22-DRP-R-X**
	Green	**M22-DRP-G-X**
	Yellow	**M22-DRP-Y-X**
Black	Black	**M22S-DRP-S-X**
	Red	**M22S-DRP-R-X**
	Green	**M22S-DRP-G-X**
	Yellow	**M22S-DRP-Y-X**
Metal	Black	**M22M-DRP-S-X**
	Red	**M22M-DRP-R-X**
	Green	**M22M-DRP-G-X**
	Yellow	**M22M-DRP-Y-X**

M22-K10

M22-FK01

Contact Blocks ③

Terminal Type	Contact Configuration ⑥	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑦
	NO	**M22-FK10** ⑦

Notes

① 35 mm diameter mushroom head button.

② Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

③ For complete listing of available button plates and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

④ Minimum order quantity of (10).

⑤ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-XDP-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

⑥ All NC contact blocks are positively driven contact. ⊖

⑦ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Double Pushbuttons

Product Description

Eaton's M22 double pushbutton line is perfect for applications such as motor and pump starting, as well as anytime space is limited. In addition to the two buttons that fit in one 22 mm hole is the integrated white indicating light between them. These three operators allow for multiple functions to occur in a single space. Green/red, black/white and black/black color options along with laser engraving allow for further custom applications.

Features

- Flush and extended, as well as color options allow for the perfect combination button
- Integrated indicating light adds even more functionality in one standard 22 mm hole
- Customizable laser engraving on all buttons
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- More than 200,000 mechanical operations
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP66
- NEMA 4X, 13

Catalog Number Selection

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

Double Pushbuttons

M22 – DDL – GR – GB5 – K10 – G

Bezel
M22 = Silver
M22S = Black

Operator Type
DDL = Extended buttons and light
DDLF = Flush buttons and light
DDLM = Extended bottom button

Button Plate Color	Top	Bottom
GR =	Green	Red
WS =	White	Black
S =	Black	Black

Inscription
GB0 = STOP
GB1 = START
GB3 = UP
GB4 = DOWN
GB5 = OFF
GB6 = ON
GB14 = RESET
GB15 = FORWARD
GB16 = REVERSE
X0 = ◎
X1 = ⏻
X5 = ⊕
X5 = ⊖
X6 = Ⓡ
X7 = ⏻
X5 = ⊘

Contact Blocks	
K10 = 1NO	**K30** = 3NO
K01 = 1NC	**K03** = 3NC
K20 = 2NO	**K21** = 2NO-1NC
K02 = 2NC	**K12** = 1NO-2NC
K11 = 1NO-1NC	

Light Units
12–30 Vac/Vdc
W = White
R = Red
G = Green
B = Blue
85–264 Vac
230W = White
230R = Red
230G = Green
230B = Blue

Product Selection

Components

Double Pushbuttons, Extended Pushbuttons and Center Light, Momentary

Operators Only [1]

	Bezel	Color Top	Bottom	Inscription Top	Bottom	Catalog Number
M22-DDL-GR-GB1-GB0	Silver	Green	Red	—	—	**M22-DDL-GR**
				Custom	Custom	**M22-DDL-GR-ETCH** [2]
				ⓘ	◎	**M22-DDL-GR-X1-X0**
				START	STOP	**M22-DDL-GR-GB1-GB0**
		White	Black	—	—	**M22-DDL-WS**
				Custom	Custom	**M22-DDL-WS-ETCH** [2]
				ⓘ	◎	**M22-DDL-WS-X1-X0**
				START	STOP	**M22-DDL-WS-GB1-GB0**
		Black	Black	—	—	**M22-DDL-S**
				Custom	Custom	**M22-DDL-S-ETCH** [2]
				—	—	**M22-DDL-S-X4-X5**
				ⓘ	ⓘ	**M22-DDL-S-X7-X7**
M22S-DDL-GR-X1-X0	Black	Green	Red	—	—	**M22S-DDL-GR**
				Custom	Custom	**M22S-DDL-GR-ETCH** [2]
				ⓘ	◎	**M22S-DDL-GR-X1-X0**
				START	STOP	**M22S-DDL-GR-GB1-GB0**
		White	Black	—	—	**M22S-DDL-WS**
				Custom	Custom	**M22S-DDL-WS-ETCH** [2]
				ⓘ	◎	**M22S-DDL-WS-X1-X0**
				START	STOP	**M22S-DDL-WS-GB1-GB0**
		Black	Black	—	—	**M22S-DDL-S**
				Custom	Custom	**M22S-DDL-S-ETCH** [2]
				⊕	—	**M22S-DDL-S-X4-X5**
				ⓘ	ⓘ	**M22S-DDL-S-X7-X7**

Notes

[1] Includes contact block mounting adapter.

[2] When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-DDL-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

1

Double Pushbuttons, Flush Top Pushbuttons and Center Light, Momentary

Operators Only ①

	Bezel	Color Top	Bottom	Inscription Top	Bottom	Catalog Number
M22-DDLF-GR	Silver	Green	Red	—	—	**M22-DDLF-GR**
				Custom	Custom	**M22-DDLF-GR-ETCH** ②
		White	Black	—	—	**M22-DDLF-WS**
				Custom	Custom	**M22-DDLF-WS-ETCH** ②
		Green	Red	ⓘ	◎	**M22-DDLF-GR-X1-X0**
		White	Black	ⓘ	◎	**M22-DDLF-WS-X1-X0**
M22S-DDLF-GR-X1-X0	Black	Green	Red	—	—	**M22S-DDLF-GR**
				Custom	Custom	**M22S-DDLF-GR-ETCH** ②
		White	Black	—	—	**M22S-DDLF-WS**
				Custom	Custom	**M22S-DDLF-WS-ETCH** ②
		Green	Red	ⓘ	◎	**M22S-DDLF-GR-X1-X0**
		White	Black	ⓘ	◎	**M22S-DDLF-WS-X1-X0**

Double Pushbuttons, Flush Top Pushbutton and Center Light, Extended Bottom Pushbutton, Momentary

Operators Only ①

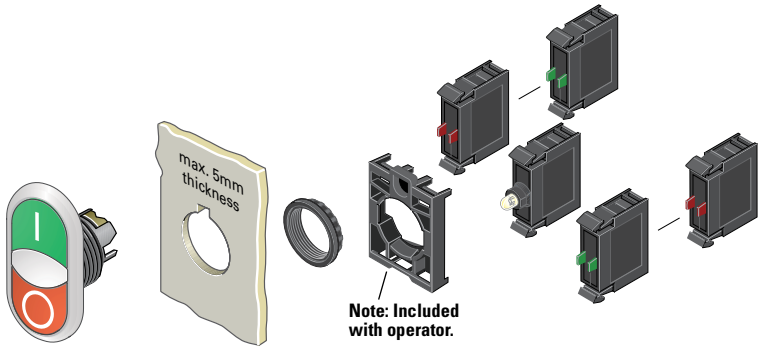
	Bezel	Color Top	Bottom	Inscription Top	Bottom	Catalog Number
M22-DDLM-GR	Silver	Green	Red	—	—	**M22-DDLM-GR**
				Custom	Custom	**M22-DDLM-GR-ETCH** ②
		White	Black	—	—	**M22-DDLM-WS**
				Custom	Custom	**M22-DDLM-WS-ETCH** ②
		Green	Red	ⓘ	◎	**M22-DDLM-GR-X1-X0**
		White	Black	ⓘ	◎	**M22-DDLM-WS-X1-X0**
M22-DDLM-GR-X1-X0	Black	Green	Red	—	—	**M22S-DDLM-GR**
				Custom	Custom	**M22S-DDLM-GR-ETCH** ②
		White	Black	—	—	**M22S-DDLM-WS**
				Custom	Custom	**M22S-DDLM-WS-ETCH** ②
		Green	Red	ⓘ	◎	**M22S-DDLM-GR-X1-X0**
		White	Black	ⓘ	◎	**M22S-DDLM-WS-X1-X0**

Notes

① Includes contact block mounting adapter.

② When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-DDLM-GR-ETCH; Order Notes: Mark with symbol X91, Line item #_.

Double Pushbuttons



M22-LED-W

M22-FLED-_

Light Units ①

Terminal Type	LED Color	Light Unit Voltage	Catalog Number
Screw	White	12–30 Vac/Vdc	**M22-LED-W**
	Red		**M22-LED-R**
	Green		**M22-LED-G**
	Blue		**M22-LED-B**
Screw	White	85–264 Vac	**M22-LED230-W**
	Red		**M22-LED230-R**
	Green		**M22-LED230-G**
	Blue		**M22-LED230-B**
Spring-cage	White	12–30 Vac/Vdc	**M22-FLED-W**
	Red		**M22-FLED-R**
	Green		**M22-FLED-G**
	Blue		**M22-FLED-B**
	Red/Green/ Yellow	24 Vdc	**M22-FLED-RG** ②
	Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ②

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ③	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ④
	NO	**M22-FK10** ④

Notes

① For complete listing of available light units and contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.
② Please see color input key on **Page V7-T1-114**.
③ All NC contact blocks are positively driven contact. ⊖
④ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

1

Four-Way Pushbuttons

Product Description

Eaton's M22 four-way pushbutton is a truly unique offering. A four-way pushbutton offers four different buttons mounted in a single 22 mm hole. This is ideal not only for an application with limited space, but also directional applications (when ordered with the four arrow engraving option). Another unique option is the interlocked version, which prevents two opposite buttons from being actuated at the same time.

Features

- Four buttons in one operator allows for increased functionality in limited space
- Optional interlocking option, which prevents two buttons from being actuated at the same time
- Customizable laser engraving on all buttons for directional or other applications
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP66

Catalog Number Selection

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

Four-Way Pushbuttons

M22 – D4 – S – X7 – K01

Bezel
M22 = Silver
M22S = Black

Button Color
S = Black

Inscription
ETCH = Custom ①
X7 = ⓘ⊖ⓘ⊖

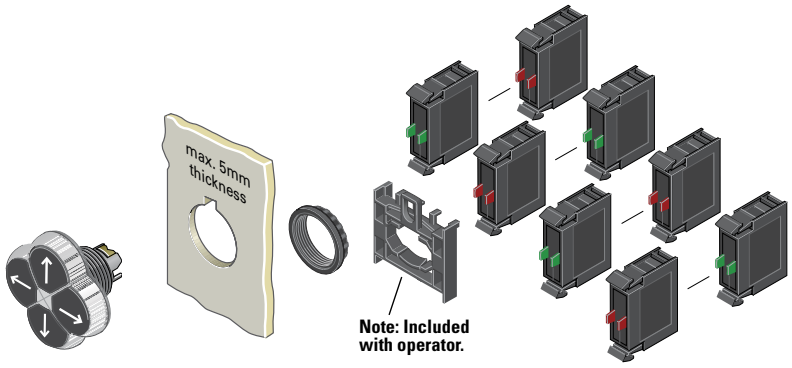
① When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-D4-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

Contact Blocks	
K10 = 1NO	**K30** =3NO
K01 = 1NC	**K03** =3NC
K20 = 2NO	**K21** =2NO-1NC
K02 = 2NC	**K12** =1NO-2NC
K11 = 1NO-1NC	

Operator Type
D4 = Four-way pushbutton, momentary, non-interlocked
DI4 = Four-way pushbutton, momentary, interlocked

Product Selection

Four-Way Pushbuttons, Momentary



Components

M22-D4-S-X7

Operators Only ①

Type	Bezel	Color	Inscription	Catalog Number
Non-interlocked	Silver	Black	—	**M22-D4-S**
			Custom	**M22-D4-S-ETCH** ③
			Directional arrows	**M22-D4-S-X7**
	Black	Black	—	**M22S-D4-S**
			Custom	**M22S-D4-S-ETCH** ③
			Directional arrows	**M22S-D4-S-X7**
Interlocked	Silver	Black	—	**M22-DI4-S**
			Custom	**M22-DI4-S-ETCH** ③
			Directional arrows	**M22-DI4-S-X7**
	Black	Black	—	**M22S-DI4-S**
			Custom	**M22S-DI4-S-ETCH** ③
			Directional arrows	**M22S-DI4-S-X7**

M22-K10

M22-FK01

Contact Blocks ①②

Terminal Type	Contact Configuration ④	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ⑤
	NO	**M22-FK10** ⑤

Notes

① Includes contact block mounting adapter.

② For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

③ When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-D4-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

④ All NC contact blocks are positively driven contact. ⊖

⑤ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

Joysticks

Product Description

Eaton's M22 joystick line comes in a wide variety of options. From vertical and horizontal two-position switches to the maintained four-position, these operators fit a variety of applications. An additional option, two switch points, allows for eight isolated circuits to be actuated individually on a single operator.

Features

- Available in four-position and two-position
- Two switch point option allows for two contacts in each direction (up to eight total contacts in one operator)
- Capable of communicating via ASi protocol with ASi adapter modules

Protection Type

- IP66

Product Selection

Joysticks

Components

M22-WJ2H

M22M-WJ2H

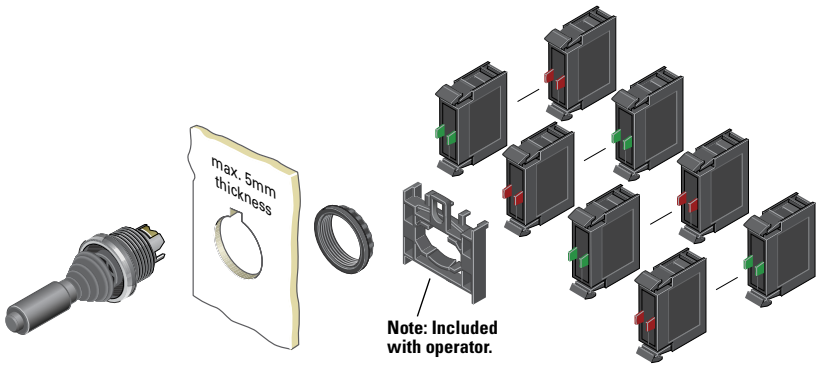
Operators ①

Number of Directions	Switching Position	Silver Bezel Catalog Number	Black Bezel Catalog Number	Metal Bezel Catalog Number
Two-position horizontal	Momentary	**M22-WJ2H**	**M22S-WJ2H**	**M22M-WJ2H**
Two switch points		**M22-WJ2H-2P**	**M22S-WJ2H-2P**	**M22M-WJ2H-2P**
Two-position horizontal	Maintained	**M22-WRJ2H**	**M22S-WRJ2H**	**M22M-WRJ2H**
Two-position vertical	Momentary	**M22-WJ2V**	**M22S-WJ2V**	**M22M-WJ2V**
Two switch points		**M22-WJ2V-2P**	**M22S-WJ2V-2P**	**M22M-WJ2V-2P**
Two-position vertical	Maintained	**M22-WRJ2V**	**M22S-WRJ2V**	**M22M-WRJ2V**
Four-position	Momentary	**M22-WJ4**	**M22S-WJ4**	**M22M-WJ4**
Two switch points		**M22-WJ4-2P**	**M22S-WJ4-2P**	**M22M-WJ4-2P**
Four-position	Maintained	**M22-WRJ4**	**M22S-WRJ4**	**M22M-WRJ4**

Note

① Includes contact block mounting adapter.

Joysticks



M22-K10

M22-FK01

Contact Blocks ①②

Terminal Type	Contact Configuration ③	Catalog Number
Screw	NO	**M22-K10**
	NO, early-make	**M22-K10P**
	NC	**M22-K01**
	NC, late-break	**M22-K01D**
Spring-cage	NO	**M22-CK10**
	NC	**M22-CK01**
	NC, late-break	**M22-CK01D**
	2NO	**M22-CK20**
	2NC	**M22-CK02**
	NO-NC	**M22-CK11**
	NC	**M22-FK01** ④
	NO	**M22-FK10** ④

Notes

① Includes contact block mounting adapter.

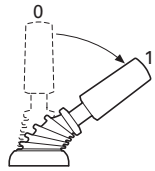
② For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

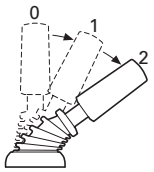
③ All NC contact blocks are positively driven contact. ⊖

④ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

Joystick with Double Contact

The joystick allows the control of up to four directions of movement on machines. Different variants of the joystick have two/four-positions and other variants have two settings for each position. This allows, for example, two-speed settings for each direction. For this application, a standard normally open contact and an early-make contact are fitted in series. Momentary contact and latching contact versions are available.





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Potentiometers

Product Description

Eaton's M22 potentiometers allow for a ready to use operator in a conveniently sized package. M22 potentiometers include the resistive element, instead of just a knob, and a built in legend surrounding the knob. The slim design, with integrated contacts and the range of resistances available, allows for a quick install.

Features

- Scale markings on the knob allows the operator to be used without an additional legend plate
- Oversized knob option available
- Slim design allows for space saving and simple wiring and installation

Protection Type

- IP66
- NEMA 4X, 13

Product Selection

Potentiometers

M22-R10K

M22M-R10K

Complete Devices

Bezel	Resistance Rk	Catalog Number
Silver	1	**M22-R1K**
	4.7	**M22-R4K7**
	10	**M22-R10K**
	47	**M22-R47K**
	100	**M22-R100K**
	470	**M22-R470K**
Black	1	**M22S-R1K**
	4.7	**M22S-R4K7**
	10	**M22S-R10K**
	47	**M22S-R47K**
	100	**M22S-R100K**
	470	**M22S-R470K**
Metal	1	**M22M-R1K**
	4.7	**M22M-R4K7**
	10	**M22M-R10K**
	47	**M22M-R47K**
	100	**M22M-R100K**
	470	**M22M-R470K**
Oversized Knob		
Silver	1	**M22-R1K-RH**
	4.7	**M22-R4K7-RH**
	10	**M22-R10K-RH**
	47	**M22-R47K-RH**
	100	**M22-R100K-RH**
	470	**M22-R470K-RH**
Black	1	**M22S-R1K-RH**
	4.7	**M22S-R4K7-RH**
	10	**M22S-R10K-RH**
	47	**M22S-R47K-RH**
	100	**M22S-R100K-RH**
	470	**M22S-R470K-RH**
Metal	1	**M22M-R1K-RH**
	4.7	**M22M-R4K7-RH**
	10	**M22M-R10K-RH**
	47	**M22M-R47K-RH**
	100	**M22M-R100K-RH**
	470	**M22M-R470K-RH**

Acoustic Devices

Product Description

Eaton's M22 acoustic devices are a simple and aesthetic way to add a buzzer or indicator to any application. Fitting in the same 22 mm hole, these devices can be ordered in continuous or pulsed tone and with or without the IP40 enclosure.

Features

- Continuous or pulsed tone available
- 83 dB / 10 cm decibel rating
- Slim design allows for space saving and simple wiring and installation

Protection Type

- IP40
- NEMA 12

Product Selection

Acoustic Devices

M22-AMC-XAM

Complete Devices

Description	Decibel Rating	Catalog Number
Indicator with buzzer, black continuous tone, 18–30 Vac/Vdc	83 dB/ 10 cm	**M22-AMC-XAM**
Indicator with buzzer, black pulsed tone, 18–30 Vac/Vdc	83 dB/ 10 cm	**M22-AMC-XAMP**

M22-XAM

Buzzers

Description	Decibel Rating	Catalog Number
Indicator without buzzer, black	83 dB/ 10 cm	**M22-AMC**
Buzzer only, continuous tone, 18–30 Vac/Vdc	83 dB/ 10 cm	**M22-XAM**
Buzzer only, pulsed tone, 18–30 Vac/Vdc	83 dB/ 10 cm	**M22-XAMP**

Through-the-Door Operators

Product Description

Eaton's M22 through-the-door operators use the same familiar flush pushbutton look with the addition of a cut-to-length rod that allows for a simple reset operator.

Features

- Customizable laser engraving on all buttons
- More than five million mechanical operations
- Pushrod can be cut to length

Protection Type

- IP67, IP69K
- NEMA 4X, 13

Product Selection

Through-the-Door Operators ①

M22-DZ-B-X6

Complete Devices

Color	Inscription	Catalog Number
Blue	—	**M22-DZ-B**
	RESET	**M22-DZ-B-GB14**
	Ⓡ	**M22-DZ-B-X6**
Red	—	**M22-DZ-R**
	◎	**M22-DZ-R-X0**
	STOP	**M22-DZ-R-GB0**

M22-DZ-X

Buttonless Operator

Bezel	Catalog Number
Silver	**M22-DZ-X**
Metal	**M22M-DZ-X**

M22-XD-B

Button Plates ②

Color	Inscription	Catalog Number
Blue	—	**M22-XD-B** ③
	RESET	**M22-XD-B-GB14**
	Ⓡ	**M22-XD-B-X6**
Red	—	**M22-XD-R** ③
	◎	**M22-XD-R-X0**
	STOP	**M22-XD-R-GB0**

Bulkhead Interfaces

Product Description

Eaton's M22 bulkhead interfaces are another unique offering in the M22 line. This device allows for a secure connection to any USB or RJ45 connected device within an enclosure or panel. With an IP65 rating when closed, these devices are not only convenient, but robust and reliable.

Features

- Convenient and safe way to make a data connection to inside of the panel without opening the panel door

Protection Type

- IP65 when closed, IP20 when connected

Product Selection

Bulkhead Interfaces

M22-USB-SA

USB Socket ④⑤

Used for USB connection plug IP65 when closed, IP20 when connected.

Bezel	Catalog Number
Silver	**M22-USB-SA**

M22-RJ45-SA

RJ45 Socket ⑥

Used for RJ45 Ethernet connection IP65 when closed, IP20 when connected.

Bezel	Catalog Number
Silver	**M22-RJ45-SA**

Notes

① The pushrod is 3.24 in long and can be cut to length.
② Any combination of plate color and inscription is available.
③ Minimum order quantity of (10).
④ USB interface is complete with 2-ft-long USB cable.
⑤ USB interface is UL Listed, CSA approved and USB 3.0.
⑥ RJ45 interface is an eight-wire connector.

1

ASi Adapter Modules

Product Description

Eaton's M22 ASi adapter modules add functionality to every operator in the M22 line. These devices can be connected to any operator that uses contact blocks or LED units. The simple snap-on design allows for a quick integration of an entire application of operators to a communicating network.

Features

- Allows compatible operators to communicate on an ASi network
- Not only can the status of a contact block be read, but LEDs can be illuminated by an ASi adapter
- ASi adapters simply clip on to the back of the contact blocks and LEDs
- Insulation displacement connectors allow for installation of adapters without any tools
- Two integrated LEDs indicate status of communications

Protection Type

- IP20

Product Selection

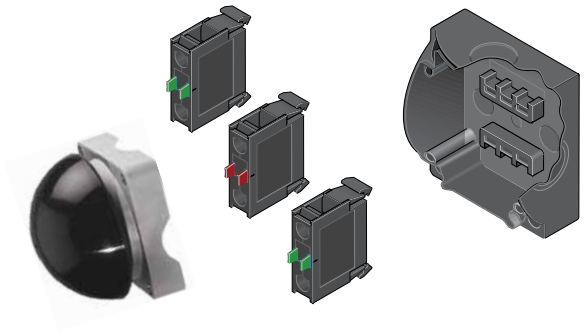
ASi Adapter Modules

M22-ASI

Complete Devices

Description	Catalog Number
ASi adapter module	**M22-ASI**
ASi adapter module for base mounting	**M22-ASI-C**
ASi adapter module for E-stop	**M22-ASI-S**
ASi adapter module for E-stop base mounting	**M22-ASI-CS**

Palm Switches



Product Description

Eaton's M22 palm switches are an oversized button that mount directly to an enclosure base. This allows for a standalone button that can be mounted anywhere. The enclosure uses base-mounted contact blocks, which allows for quick wiring and mounting. The palm switches come in momentary or maintained versions. As with other M22 operators, the palm switches are available as complete devices, including the enclosure and contact blocks or as modular components.

Features

- Oversized operator in black, red and yellow color options
- Button integrated directly into an enclosure
- Base mounting contact blocks allow for simple wiring and installation
- More than one million mechanical operations on momentary and 100,000 on maintained operators

Protection Type

- IP67, IP69K
- NEMA 4X, 13

Catalog Number Selection

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

Palm Switches, Type 4X/13 Enclosure

FAK – S – KC10 – I

Operator Type	Operator Color	Contact Blocks	Enclosure Top Color
FAK = Palm switch	**S** = Black **R** = Red **Y** = Yellow	**KC10** = NO **KC01** = NC **CKC10** = NO **CKC01** = NC	**I** = Gray **IY** = Yellow

Product Selection

Complete Devices

Operator, Base and Contact Blocks ①

	Button Color	Contact Block Configuration ②	Catalog Number
FAK-S-KC11-I	**Momentary**		
	Black	1NO-1NC	**FAK-S-KC11-I**
	Red	1NO-1NC	**FAK-R-KC11-I**
	Yellow	1NO-1NC	**FAK-Y-KC11-I**
FAK-R-V-KC01-IY	**Maintained**		
	Red	NC	**FAK-R-V-KC01-IY**
		2NC	**FAK-R-V-KC02-IY**
		1NO-2NC	**FAK-R-V-KC12-IY**
		1NO-1NC	**FAK-R-V-KC11-IY**

Notes

① For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

② All NC contact blocks are positively driven contact. ⊖

Components

FAK-S

Operators Only

Type	Button Color	Catalog Number
Momentary	Black	**FAK-S**
	Red	**FAK-R**
	Yellow	**FAK-Y**
Maintained	Red	**FAK-R-V-Y**

FAK-IU

Palm Switch Enclosure Base

Catalog Number
FAK-IU

M22-K10

M22-FK01

Contact Blocks ①

Terminal Type	Contact Configuration ②	Catalog Number
Screw	NO	**M22-KC10**
	NC	**M22-KC01**
Spring-cage	NO	**M22-CKC10**
	NC	**M22-CKC01**
	NC	**M22-FK01** ③
	NO	**M22-FK10** ③

Notes

① For complete listing of available contact blocks, see Accessories, **Pages V7-T1-111** to **V7-T1-116**.

② All NC contact blocks are positively driven contact. ⊖

③ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

Accessories

M22-XD-S

M22-XDH-R

M22-XDP-G

Button Plates

Color	Inscription	Catalog Number Flush Pushbutton	Catalog Number Extended Pushbutton	Catalog Number Mushroom Head Button
Black	—	**M22-XD-S**	**M22-XDH-S**	**M22-XDP-S**
White	—	**M22-XD-W**	**M22-XDH-W**	**M22-XDP-W**
Red	—	**M22-XD-R**	**M22-XDH-R**	**M22-XDP-R**
Green	—	**M22-XD-G**	**M22-XDH-G**	**M22-XDP-G**
Yellow	—	**M22-XD-Y**	**M22-XDH-Y**	**M22-XDP-Y**
Blue	—	**M22-XD-B**	**M22-XDH-B**	—
Black, white, red, green, yellow, blue	—	**M22-XD-SWRGYB**	**M22-XDH-SWRGYB**	—
Black, red, green	—	**M22-XD-SRG**	**M22-XDH-SRG**	—
Black	Custom	**M22-XD-S-ETCH**	**M22-XDH-S-ETCH**	**M22-XDP-S-ETCH**
White	Custom	**M22-XD-W-ETCH**	**M22-XDH-W-ETCH**	**M22-XDP-W-ETCH**
Red	Custom	**M22-XD-R-ETCH**	**M22-XDH-R-ETCH**	**M22-XDP-R-ETCH**
Green	Custom	**M22-XD-G-ETCH**	**M22-XDH-G-ETCH**	**M22-XDP-G-ETCH**
Yellow	Custom	**M22-XD-Y-ETCH**	**M22-XDH-Y-ETCH**	**M22-XDP-Y-ETCH**
Blue	Custom	**M22-XD-B-ETCH**	**M22-XDH-B-ETCH**	—
Black	STOP	**M22-XD-S-GB0**	**M22-XDH-S-GB0**	**M22-XDP-S-GB0**
Red	STOP	**M22-XD-R-GB0**	**M22-XDH-R-GB0**	**M22-XDP-R-GB0**
Black	START	**M22-XD-S-GB1**	**M22-XDH-S-GB1**	**M22-XDP-S-GB1**
White	START	**M22-XD-W-GB1**	**M22-XDH-W-GB1**	—
Green	START	**M22-XD-G-GB1**	**M22-XDH-G-GB1**	**M22-XDP-G-GB1**
Black	CLOSE	**M22-XD-S-GB2**	**M22-XDH-S-GB2**	—
Black	UP	**M22-XD-S-GB3**	**M22-XDH-S-GB3**	**M22-XDP-S-GB3**
Black	DOWN	**M22-XD-S-GB4**	**M22-XDH-S-GB4**	**M22-XDP-S-GB4**
Black	OFF	**M22-XD-S-GB5**	**M22-XDH-S-GB5**	**M22-XDP-S-GB5**
Red	OFF	**M22-XD-R-GB5**	**M22-XDH-R-GB5**	**M22-XDP-R-GB5**
Black	ON	**M22-XD-S-GB6**	**M22-XDH-S-GB6**	**M22-XDP-S-GB6**
Green	ON	**M22-XD-G-GB6**	**M22-XDH-G-GB6**	**M22-XDP-G-GB6**
Black	TEST	**M22-XD-S-GB9**	**M22-XDH-S-GB9**	—
Blue	RESET	**M22-XD-B-GB14**	**M22-XDH-B-GB14**	—
Black	FORWARD	**M22-XD-S-GB15**	**M22-XDH-S-GB15**	**M22-XDP-S-GB15**
Black	REVERSE	**M22-XD-S-GB16**	**M22-XDH-S-GB16**	**M22-XDP-S-GB16**
Black	RAISE	**M22-XD-S-GB17**	**M22-XDH-S-GB17**	—
Black	LOWER	**M22-XD-S-GB18**	**M22-XDH-S-GB18**	—
Black	◎	**M22-XD-S-X0**	**M22-XDH-S-X0**	**M22-XDP-S-X0**
Red	◎	**M22-XD-R-X0**	**M22-XDH-R-X0**	**M22-XDP-R-X0**
Green	◎	—	—	**M22-XDP-G-X0**
Black	①	**M22-XD-S-X1**	**M22-XDH-S-X1**	**M22-XDP-S-X1**
White	①	**M22-XD-W-X1**	**M22-XDH-W-X1**	—
Green	①	**M22-XD-G-X1**	**M22-XDH-G-X1**	**M22-XDP-G-X1**
Black	⏸	**M22-XD-S-X2**	**M22-XDH-S-X2**	—
Green	⏸	**M22-XD-G-X2**	**M22-XDH-G-X2**	—
Black	⊕	**M22-XD-S-X4**	**M22-XDH-S-X4**	**M22-XDP-S-X4**
Black	⊖	**M22-XD-S-X5**	**M22-XDH-S-X5**	**M22-XDP-S-X5**
Blue	Ⓡ	**M22-XD-B-X6**	**M22-XDH-B-X6**	—
Black	↑	**M22-XD-S-X7**	**M22-XDH-S-X7**	**M22-XDP-S-X7**
Black	↑	**M22-XD-S-X8**	**M22-XDH-S-X8**	—
Black	See ① below	**M22-XD-S-X9**	**M22-XDH-S-X9**	—
Black	See ① below	**M22-XD-S-X10**	**M22-XDH-S-X10**	—
Black	See ① below	**M22-XD-S-X11**	**M22-XDH-S-X11**	—
Black	See ① below	**M22-XD-S-X12**	**M22-XDH-S-X12**	—
Black	See ① below	**M22-XD-S-X13**	**M22-XDH-S-X13**	—
Black	See ① below	**M22-XD-S-X14**	**M22-XDH-S-X14**	—
Black	See ① below	**M22-XD-S-X15**	**M22-XDH-S-X15**	—
Black	See ① below	**M22-XD-S-X16**	**M22-XDH-S-X16**	—
Black	See ① below	**M22-XD-S-X17**	**M22-XDH-S-X17**	—

Note

① Refer to the Symbols Library, (see **Pages V7-T1-129** to **V7-T1-136**), for symbol image.

M22-XDLH-W

M22-XDL-G

Button Lenses

Color	Inscription	Catalog Number Flush	Catalog Number Extended
White	—	**M22-XDL-W**	**M22-XDLH-W**
Red	—	**M22-XDL-R**	**M22-XDLH-R**
Green	—	**M22-XDL-G**	**M22-XDLH-G**
Yellow	—	**M22-XDL-Y**	**M22-XDLH-Y**
Blue	—	**M22-XDL-B**	**M22-XDLH-B**
White	Custom	**M22-XDL-W-ETCH**	**M22-XDLH-W-ETCH**
Red	Custom	**M22-XDL-R-ETCH**	**M22-XDLH-R-ETCH**
Green	Custom	**M22-XDL-G-ETCH**	**M22-XDLH-G-ETCH**
Yellow	Custom	**M22-XDL-Y-ETCH**	**M22-XDLH-Y-ETCH**
Blue	Custom	**M22-XDL-B-ETCH**	**M22-XDLH-B-ETCH**
Red	STOP	**M22-XDL-R-GB0**	**M22-XDLH-R-GB0**
Green	START	**M22-XDL-G-GB1**	**M22-XDLH-G-GB1**
Red	OFF	**M22-XDL-R-GB5**	**M22-XDLH-R-GB5**
Green	ON	**M22-XDL-G-GB6**	**M22-XDLH-G-GB6**
Blue	RESET	**M22-XDL-B-GB14**	**M22-XDLH-B-GB14**
Red	ⓞ	**M22-XDL-R-X0**	**M22-XDLH-R-X0**
Green	ⓘ	**M22-XDL-G-X1**	**M22-XDLH-G-X1**
Blue	Ⓡ	**M22-XDL-B-X6**	**M22-XDLH-B-X6**

Mounting Adapters

		Description	Catalog Number
M22-A		Contact block mounting adapter	**M22-A**
M22-A4		Contact block mounting adapter, four-position (for use with four-way pushbuttons, joysticks and four-position selector switches only).	**M22-A4**
M22-LS		Allows mounting of M22 pushbuttons to LS-Titan limit switch bodies (for the full LS-Titan catalog section, see **PG08301004E**).	**M22-LS**

M22-K10

M22-FK01

Contact Blocks

Mounting Location	Terminal Type	Contact Configuration ①	Package Qty.	Catalog Number
Front	Screw	NO	1	**M22-K10**
		NO	25	**M22-K10-B25**
		NO	100	**M22-K10-B100**
		NO, early-make	1	**M22-K10P**
		NC	1	**M22-K01**
		NC	25	**M22-K01-B25**
		NC	100	**M22-K01-B100**
		NC, late-break	1	**M22-K01D**
		SMCB, NC	1	**M22-K01SMC10**
		SMCB, 2NC	1	**M22-K02SMC10**
Base		NO	1	**M22-KC10**
		NO	25	**M22-KC10-B25**
		NO	100	**M22-KC10-B100**
		NC	1	**M22-KC01**
		NC	25	**M22-KC01-B25**
		NC	100	**M22-KC01-B100**
		SMCB, NC	1	**M22-KC01SMC10**
		SMCB, 2NC	1	**M22-KC02SMC10**
Front	Spring-cage	NO	1	**M22-CK10**
		NC	1	**M22-CK01**
		NC, late-break	1	**M22-CK01D**
		2NO ②	1	**M22-CK20**
		2NC ②	1	**M22-CK02**
		NO-NC ②	1	**M22-CK11**
		NC	20	**M22-FK01** ③
		NO	20	**M22-FK10** ③
Base		NO	1	**M22-CKC10**
		NC	1	**M22-CKC01**

Notes

① All NC contact blocks are positively driven contact. ⊖

② Not stackable.

③ Additional contacts may not be stacked behind M22-F type contact blocks, M22-F can be stacked behind standard M22 contacts only.

M22-LED-W

M22-FLED-_

Light Units

Terminal Type	Mounting Location	LED Color	Light Unit Voltage	Catalog Number
Screw	Front	White	12–30 Vac/Vdc	**M22-LED-W**
		Red		**M22-LED-R**
		Green		**M22-LED-G**
		Blue		**M22-LED-B**
		White	85–264 Vac	**M22-LED230-W**
		Red		**M22-LED230-R**
		Green		**M22-LED230-G**
		Blue		**M22-LED230-B**
		White	207–264 Vac	**M22-LED230H-W**
		Red		**M22-LED230H-R**
		Green		**M22-LED230H-G**
		Blue		**M22-LED230H-B**
	Base	White	12–30 Vac/Vdc	**M22-LEDC-W**
		Red		**M22-LEDC-R**
		Green		**M22-LEDC-G**
		Blue		**M22-LEDC-B**
		White	85–264 Vac	**M22-LEDC230-W**
		Red		**M22-LEDC230-R**
		Green		**M22-LEDC230-G**
		Blue		**M22-LEDC230-B**
		White	207–264 Vac	**M22-LEDC230H-W**
		Red		**M22-LEDC230H-R**
		Green		**M22-LEDC230H-G**
		Blue		**M22-LEDC230H-B**
Spring-cage	Front	White	12–30 Vac/Vdc	**M22-CLED-W**
		Red		**M22-CLED-R**
		Green		**M22-CLED-G**
		Blue		**M22-CLED-B**
		White	85–264 Vac	**M22-CLED230-W**
		Red		**M22-CLED230-R**
		Green		**M22-CLED230-G**
		Blue		**M22-CLED230-B**
	Base	White	12–30 Vac/Vdc	**M22-CLEDC-W**
		Red		**M22-CLEDC-R**
		Green		**M22-CLEDC-G**
		Blue		**M22-CLEDC-B**
		White	85–264 Vac	**M22-CLEDC230-W**
		Red		**M22-CLEDC230-R**
		Green		**M22-CLEDC230-G**
		Blue		**M22-CLEDC230-B**
	Front	White	12–30 Vac/Vdc	**M22-FLED-W**
		Red		**M22-FLED-R**
		Green		**M22-FLED-G**
		Blue		**M22-FLED-B**
		Red/Green/Yellow	24 Vdc	**M22-FLED-RG** ①
		Red, Green, Blue, Yellow, White, Violet, Turquoise		**M22-FLED-RGB** ①

M22-XLED60

LED Resistor and Test Elements

Terminal Type	Mounting Location	Element Type	Voltage	Catalog Number
Screw	Front	Resistor ②③	42–60 Vac/Vdc	**M22-XLED60**
			220 Vdc	**M22-XLED220**
		Test	12–240 Vac/Vdc	**M22-XLED-T**
			85–264 Vac	**M22-XLED230-T**

Notes

① Please see color input key on **Page V7-T1-114**.
② Resistor units to be used with 12–30V light units.
③ Refer to **IL04716002E** for use of resistor elements in series for higher DC voltage.

Multi-Color LED Input Guide

Catalog Number		Terminal Color X1 +R	X2 +G	X3 +B	X4 GND
M22-FLED-RG	Red	■	—	—	■
	Green	—	■	—	■
	Yellow	■	■	—	■
M22-FLED-RGB	Red	■	—	—	■
	Green	—	■	—	■
	Yellow	■	■	—	■
	White	■	■	■	■
	Blue	—	—	■	■
	Violet	■	—	■	■
	Turquoise	—	■	■	■

Legend Plate Holders and Inserts, Pushbuttons and Double Pushbuttons ①

	Description	Inscription	Catalog Number
M22S-ST-X	Legend plate holder, without legend plate insert, for pushbuttons	—	**M22S-ST-X**
	Legend plate holder, without legend plate insert, for double pushbuttons	—	**M22S-STDD-X**
M22-XST-GB0	Legend plate insert	—	**M22-XST**
		Custom	**M22-XST-ETCH** ②
		STOP	**M22-XST-GB0**
		START	**M22-XST-GB1**
		OFF	**M22-XST-GB5**
		ON	**M22-XST-GB6**
		RUN	**M22-XST-GB7**
		FAULT	**M22-XST-GB8**
		OFF ON	**M22-XST-GB10**
		MAN. AUTO	**M22-XST-GB11**
		MAN. O AUTO	**M22-XST-GB12**
		HAND AUTO	**M22-XST-D11**
		HAND O AUTO	**M22-XST-D12**
		1	**M22-XST-X52**
		2	**M22-XST-X53**
		O I	**M22-XST-X88**
		O - I	**M22-XST-X89**
		I O II	**M22-XST-X93**

Notes

① Legend plates are IP66 and NEMA 4X/13.

② When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes.
For example, M22-XD-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

Example

To order a legend plate for a pushbutton with non-standard markings (FORWARD):

1. Select legend plate holder—M22S-ST-X.
2. Select legend plate insert—M22-XST-ETCH.
3. Select FORWARD from the Symbols Library, **Pages V7-T1-129** to **V7-T1-136**, identified by GB15 suffix.
4. Indicate on the order form in the order notes—suffix GB15, line item # ___ .

Legend Plates, Complete ①

		Description	Inscription	Catalog Number
M22S-ST-GB0	For use with pushbuttons and indicating lights	Legend plate holder with insert	STOP	**M22S-ST-GB0**
			START	**M22S-ST-GB1**
			OFF	**M22S-ST-GB5**
			ON	**M22S-ST-GB6**
			RUN	**M22S-ST-GB7**
			FAULT	**M22S-ST-GB8**
			1	**M22S-ST-X52**
			2	**M22S-ST-X53**
	Selector switches	—	OFF ON	**M22S-ST-GB10**
			MAN. AUTO	**M22S-ST-GB11**
			MAN. O AUTO	**M22S-ST-GB12**
			HAND AUTO	**M22S-ST-D11**
			HAND O AUTO	**M22S-ST-D12**
			O I	**M22S-ST-X88**
			O - I	**M22S-ST-X89**
			I O II	**M22S-ST-X93**
M22-XZK	Emergency-stop operators	Rectangular yellow legend plate	—	**M22-XZK**
			Custom	**M22-XZK-ETCH** ②
			EMERGENCY-STOP	**M22-XZK-GB99**
M22-XYK		Square yellow legend plate	—	**M22-XYK**
			—	**M22-XYK-ETCH** ②
			EMERGENCY-STOP four-language	**M22-XYK1**
			EMERGENCY-STOP (top and bottom)	**M22-XYK5**
		Round yellow legend plate, 90 mm	—	**M22-XAK**
			Custom	**M22-XAK-ETCH** ②
			EMERGENCY-STOP four-language	**M22-XAK1**
			EMERGENCY-STOP (top and bottom)	**M22-XAK5**
M22-XBK1		Round yellow legend plate, 60 mm	—	**M22-XBK**
			Custom	**M22-XBK-ETCH** ②
			EMERGENCY-STOP four-language	**M22-XBK1**
			EMERGENCY-STOP (top and bottom)	**M22-XBK5**
M22-XCK1	Four-way pushbutton, joystick and four-position selector switches	Silver square legend plate	—	**M22-XCK**
			Custom	**M22-XCK-ETCH** ②
			Four directional arrows	**M22-XCK1**
			0-1-0-2-0-3-0-4	**M22-XCK2**
			Two directional arrows	**M22-XCK3**

Notes

① Legend plates are IP66 and NEMA 4X/13.

② When ordering, specify inscription per catalog number suffix from the Symbols Library (see **Pages V7-T1-129** to **V7-T1-136**) into the Order Notes. For example, M22-XD-S-ETCH; Order Notes: Mark with symbol X91, Line item #_.

Surface Mounting Enclosures ①

M22-IY1-PG

M22-IY-PG

Description	Catalog Number
Yellow top, black base for emergency-stop operators	**M22-IY1-PG**
One-element enclosure	**M22-I1-PG**
Two-element enclosure	**M22-I2-PG**
Three-element enclosure	**M22-I3-PG**
Four-element enclosure	**M22-I4-PG**
Six-element enclosure	**M22-I6-PG**
M20 connecting screw	**M22-XI**
M20 cord grip	**V-M20**

Flush Mounting Plates, Aluminum

M22-EY1

Finish	Rating	Catalog Number
One Hole		
Yellow paint for emergency-stop operators	—	**M22-EY1**
Gray anodized	IP65	**M22-E1**
Two Holes		
Gray anodized	IP65	**M22-E2**
Three Holes		
Gray anodized	IP65	**M22-E3**
Four Holes		
Gray anodized	IP65	**M22-E4**
Five Holes		
Gray anodized	IP65	**M22-E5**
Six Holes		
Anodized	IP40	**M22-E6**

Shrouds, Plastic

M22-H1

Description	Rating	Catalog Number
One-element	IP55	**M22-H1**
Two-element	IP55	**M22-H2**
Three-element	IP55	**M22-H3**
Four-element	IP40	**M22-H4**
Five-element	IP40	**M22-H5**
Six-element	IP40	**M22-H6**
Mounting plate	—	**M22-XE5**
Plaster keys for flush mounting	—	**M22-UPE**

Selector Switch Accessories

	Description	Catalog Number
M22-XW	Plunger bridge ②	**M22-XW**
M22-XWS	Key cover	**M22-XWS**
M22-XC-R	Key withdraw adapter ③	**M22-XC-R**
M22-XC-Y	Coding adapter	**M22-XC-Y**
M22-XGWK	Guard ring	**M22-XGWK**

Notes

① Requires use of base mounted contact blocks.

② Plunger needed to actuate center-mounted contact blocks. Used for non-illuminated three-position selector switches only.

③ Enables a keyed selector switch to be set to user-selected key withdraw position.

Emergency Stop Operator Accessories

	Description	Voltage	Catalog Number
M22-XGPV	Yellow guard ring	—	**M22-XGPV**
M22G-XGPV	Gray guard ring	—	**M22G-XGPV**
M22-MGTA	Rectangular guard	—	**M22-MGTA**
M22-PL-PV	Sealing shroud	—	**M22-PL-PV**
M22-XPV60-Y-120	Illuminated ring	24 Vac/Vdc	**M22-XPV60-Y-24**
		120 Vac	**M22-XPV60-Y-120**
		230 Vac	**M22-XPV60-Y-230**

Blanking Plugs

M22-B

Color	Catalog Number
Gray	**M22-B**
Black	**M22S-B**

Notching Tool

M22-NT

Punching tool used to produce the cutout for the anti-rotation tab as defined in IEC/EN 60947-5-1.

Description	Unit	Article Number	Catalog Number
St 37 sheet steel: Max. 3 mm thickness Stainless steel: Max. 1.5 mm thickness	1	028144	**M22-NT**

Mounting Accessories

	Description	Catalog Number
M22-TC and M22-TA	Telescopic clip with top-hat rail	**M22-TC**
	Telescopic clip	**M22-TA**
	Telescopic clip extension	**M22-TCV**
M22-IVS	DIN rail mounting adapter	**M22-IVS**
M22-GR	Mounting ring	**M22-GR**
M22-MS	Mounting ring tool	**M22-MS**
M22S-R30	Adapter ring set for 30 mm holes	**M22S-R30**

Protective Diaphragm

M22-T-D and M22-T-DD

For Use with …	Catalog Number
Flush pushbuttons and indicating lights	**M22-T-D**
Double pushbuttons	**M22-T-DD**

Dust Covers

M22-ADC4

Description	Catalog Number
Contact block dust cover	**M22-XKDP**
Operator dust cover, max three contact blocks	**M22-ADC**
Operator dust cover, max four contact blocks	**M22-ADC4**

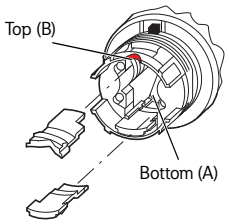
Kits

Description	Catalog Number
Includes one each: M22-XW, M22-XC-R, M22-XC-Y, M22S-B, M22-A, M22-XD-SWRGYB	**M22-KT1**

1

Coding Adapter Guide

Selector Switches



Two-Position Selector Switch

Top (B)	Bottom (A)	Catalog Number	Function
		M22(S)-W(L)(K)	Momentary
		M22(S)-WR(L)(K)	Maintained

Three-Position Selector Switch

Top (B)	Bottom (A)	Catalog Number	Function Left	Right
		M22(S)-W(L)(K)3	Momentary	Momentary
		M22(S)-WR(L)(K)3	Maintained	Maintained
		M22(S)-WR(L)(K)3-1	Maintained	Momentary
		M22(S)-WR(L)(K)3-2	Momentary	Maintained

Two-Position Key-Operated Selector Switch

Top (B)	Bottom (A)	Catalog Number	Center Key Withdraw	Right Function	Key Withdraw
		M22(S)-WS	Yes	Momentary	No
		M22(S)-WRS	Yes	Maintained	Yes
		M22(S)-WRS-A1	Yes	Maintained	No

Three-Position Key-Operated Selector Switch

Top (B)	Bottom (A)	Catalog Number	Left Function	Key Withdraw	Center Key Withdraw	Right Function	Key Withdraw
		M22(S)-WS3	Momentary	No	Yes	Momentary	No
		M22(S)-WRS3	Maintained	Yes	Yes	Maintained	Yes
		M22(S)-WRS3-A1	Maintained	No	Yes	Maintained	No
		M22(S)-WRS3-A2	Maintained	Yes	Yes	Maintained	No
		M22(S)-WRS3-A3	Maintained	No	Yes	Maintained	Yes
		M22(S)-WRS3-A4	Maintained	Yes	Yes	Momentary	No
		M22(S)-WRS3-A5	Maintained	No	Yes	Momentary	No
		M22(S)-WRS3-A6	Momentary	No	Yes	Maintained	Yes
		M22(S)-WRS3-A7	Momentary	No	Yes	Maintained	No

Technical Data and Specifications

Pushbuttons, Indicating Lights, Selector Switches and Emergency-Stop Operators

Description			Momentary Pushbuttons	Maintained Pushbuttons	Indicating Lights, Buzzers and Potentiometers	Emergency-Stop Operators	Selector Switches	Key-Operated Operators	Double Pushbuttons
General									
Standards			IEC/EN 60947 VDE 0660 UL #E29184	IEC/EN 60947 VDE 0660 UL #E29184	IEC/EN 60947 VDE 0660 UL #E29184	IEC/EN 60947 VDE 0660 UL #340491	IEC/EN 60947 VDE 0660 UL #E29184	IEC/EN 60947 VDE 0660 UL #E29184	IEC/EN 60947 VDE 0660 UL #E29184
Lifespan, mechanical	Operations	x 10^6	>5	>1	—	>0.1	>0.1	>0.1	>0.2
Operating frequency	Operations/h		≥3600	≥1800	—	≥600	≥2000	≥100	≥3600
Actuating force		n	≥5	≥5	—	≥50	–	—	≥5
Operating torque (screw terminals)		Nm	—	—	—	—	≥0.3	≥0.5	—
Protection Type									
IP			IP67, IP69K	IP67, IP69K	Indicating lights: IP67, 69K Buzzers: IP40 Potentiometers: IP66	IP67, IP69K	IP66	IP66	IP66
UL type			4X, 13	4X, 13	Indicating lights: 4X/13 Buzzers: 12 Potentiometers: 4X/13	4X, 13	4X, 13	4X, 13	4X, 13
Climatic proofing			Damp heat, constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30						
Ambient temperature, operating		°F (°C)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)
Mounting position			As required	As required	As required	As required	As required	As required	As required
Mechanical shock resistance to IEC 60068-2-27 shock duration 11 ms, half-sinusoidal		g	>30	>30	>30	>50	>30	>30	>30
Terminal Capacities									
Solid		AWG	—	—	20-16	—	—	—	—
		mm^2		—	0.5–1.5	—		—	
Stranded		AWG	—	—	20-16	—	—	—	—
		mm^2		—	0.5–1.5	—		—	
Contacts									
Rated impulse withstand voltage	U_{imp}	Vac	—	—	4000	—	—	—	—
Rated insulation voltage	U_i	V	—	—	2500	—	—	—	—
Overvoltage category/ pollution degree			—	—	III/3	—	—	—	—

Contact Blocks and Light Units

Description			Contact Blocks	LED Light Units
General				
Standards			IEC/EN 60947 VDE 0660 UL #E29184	IEC/EN 60947 VDE 0660 UL #E29184
Lifespan, mechanical	Operations	x 10^6	>5	—
Operating frequency	Operations/h		≥3600	—
Actuating force		n	≥5	—
Operating torque (screw terminals)		Nm	≤0.8	—
Protection Type				
IP			IP20	IP20
UL type			—	—
Climatic proofing			Damp heat, constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30	
Ambient temperature, operating		°F (°C)	–13 to 158 (–25 to 70)	–13 to 158 (–25 to 70)
Mounting position			As required	As required
Mechanical shock resistance to IEC 60068-2-27 shock duration 11 ms, half-sinusoidal		g	>30	>30
Terminal Capacities				
Solid		AWG	18–14	18–14
		mm^2	0.75–2.5	0.75–2.5
Stranded		AWG	20–14	20–14
		mm^2	0.5–2.5	0.5–2.5
Contacts				
Rated impulse withstand voltage	U_{imp}	Vac	6000	6000
Rated insulation voltage	U_i	V	500	500
Overvoltage category/ pollution degree			III/3	III/3
NEMA contact ratings			A600, Q300	—
Current draw			—	5–15 mA
Control Circuit Reliability				
at 24 Vdc/5 mA	H_F	Fault probability	$<10^{-7}$, <1 fault in 10^7 operations	—
at 5 Vdc/1 mA	H_F	Fault probability	$<5 \times 10^{-6}$, <1 fault in 5×10^6 operations	—
Max. Short-Circuit Protective Device				
Fuse	gG/gL	A	10	—
Switching Capacity				
Rated Operational Current				
AC-15				
115V	I_e	A	6	—
230V	I_e	A	6	—
400V	I_e	A	4	—
500V	I_e	A	2	—
DC-13				
24V	I_e	A	3	—
42V	I_e	A	1.7	—
60V	I_e	A	1.2	—
110V	I_e	A	0.6	—
220V	I_e	A	0.3	—
Lifespan, Electrical				
AC-15				
230V/0.5A	Operations	x 10^6	1.6	—
230V/1.0A	Operations	x 10^6	1	—
230V/3.0A	Operations	x 10^6	0.7	—
DV-13				
12V/2.8A	Operations	x 10^6	1.2	—

Contact Element Note: >200 Vac/60 Hz: –25/55°C

Palm Switches

Description			Momentary	Maintained	FAK-R-V-KC11-I
General					
Standards			IEC/EN 60947 VDE 0660	IEC/EN 60947 VDE 0660	IEC/EN 60947 VDE 0660
Lifespan, mechanical	Operations	x 10^6	>1	>0.1	>0.1
Operating frequency	Operations/h		≥3600	≥600	≥600
Actuating force		n	20–40	40–60	15–25
Operating torque		Nm	—	—	—
Degree of protection, IEC/EN 60529		IP	IP67, IP69K	IP67, IP69K	IP65
		UL Type	4X, 13	4X, 13	4X, 13
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30		
Ambient temperature, operating		°F (°C)	–73 to 104 (–25 to 40)	–73 to 104 (–25 to 40)	–73 to 104 (–25 to 40)
Mounting position			As required		
Mechanical shock resistance to IEC 60068-2-27 shock duration 11 ms, half-sinusoidal		g	>15	>15	>15

ASi Adapter Modules

Description		M22-ASI	M22-ASI-C
General			
Standards		IEC/EN 60947, DIN EN 50295	IEC/EN 60947, DIN EN 50295
Radio interference suppression		EN 55011, EN 55022	EN 55011, EN 55022
Limit value class		—	—
Protection type		IP20	IP00
Climatic proofing		Damp heat, constant, to IEC 60068-2-78, cyclical, to IEC 60068-2-30	
Ambient temperature, operating	°F (°C)	–13 to 131 (–25 to 55)	–13 to 131 (–25 to 55)
Shock resistance shock duration 11 ms	g	>30	>30
Vibration to IEC 60068-2-27 (amplitude 1 mm)	Hz	—	—
Dimensions	mm	—	—
Weight	kg	—	—
Mounting		Front mounting	Front mounting
Mounting position		As required	As required
Power Supply			
Rated voltage to AS-interface specification	Vdc	26.5–31.6	26.5–31.6
Connection technique		Yellow plug-in terminal as insulation piercing terminal	Two cables onboard
Power supply		Completely from the AS-interface cable	
Addressing		Via connection to AS-interface cable	
Total power consumption of the AS-interface	mA	≥40	≥40
AS-interface		—	—
Rated operational current at full load	mA	—	—
Rated operational current when idle (no I, O set)	mA	—	—
Status LEDs		POWER AS-interface cable: green LED on the rear side of the element ERROR AS-interface, AS-interface master failure: red LED on the rear side of the element	POWER AS-interface cable: green LED on the board ERROR AS-interface, AS-interface master failure: red LED on the board

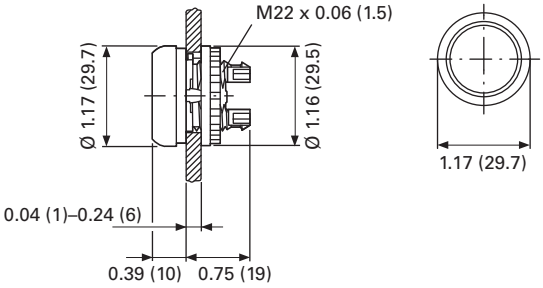
ASi-S Adapter Modules

Description		M22-ASI-S	M22-ASI-CS
Inputs			
Inputs, protected against short-circuit	Number	Two (normally 22V/5 mA)	Two (normally 22V/5 mA)
Voltage range	Vdc	—	—
Rated current per input	mA	—	—
High signal level	V	—	—
Low signal	mA	—	—
Length of connecting cables	cm	—	—
Outputs			
Outputs, protected against short-circuit	Number	One (normally 19V/8 mA)	One (normally 19V/8 mA)
Voltage range	Vdc	—	—
Max. Current Carrying Capacity			
All outputs		—	—
Σ three external outputs		—	—
Length of connecting cables	cm	—	—
Profile		S-3.A.E	S-3.A.E
Specification		2.1	2.1
Addresses	Number	62	62
Emergency-Stop Circuits			
Connection of the AS-interface line		Yellow plug terminal with insulation piercing	Two cables on the circuit board
Power supply		Complete from AS-interface, cable 26.5–31.6 Vdc	Complete from AS-interface, cable 26.5–31.6 Vdc
Fixing		Front mounted	Base mounted
Addressing		Via AS-interface cable	Via AS-interface cable
Max. total current	A	45 mA	45 mA
Ambient temperature, operating	°F (°C)	–13 to 131 (–25 to 55)	–13 to 131 (–25 to 55)
Shock resistance		30g/11 ms as per IEC 60068-2-27	30g/11 ms as per IEC 60068-2-27
Protection type		IP20	IP00
Climatic proofing		Damp heat, constant, to IEC 60068-2-78, cyclical, to IEC 60068-2-30	Damp heat, constant, to IEC 60068-2-78, cyclical, to IEC 60068-2-30
Mounting position		As required	As required
Standards		EN 50178 EN 50 295	EN 50178 EN 50 295
Inputs		Two-channel input (22V/5 mA) (moduled by code sequence) (two break contact sets M22-K01)	Two-channel input (22V/5 mA) (moduled by code sequence) (two break contact sets M22-K01)
Outputs		One output, typically 19V/8 mA, short-circuit proof	One output, typically 19V/8 mA, short-circuit proof
Status Displays			
Power, AS-interface cable		Green LED on the back	Green LED on the back
AS-interface error, AS-interface master failure		Red LED on the back	Red LED on the back
Profile		S-7.B.E	S-7.B.E

Dimensions

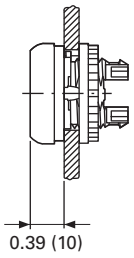
Approximate Dimensions in Inches (mm)

Operators and Indicating Lights

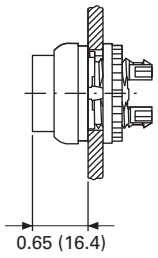


Pushbuttons

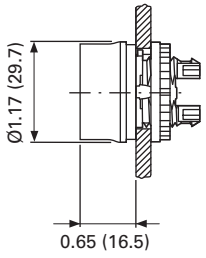
M22…-D-_



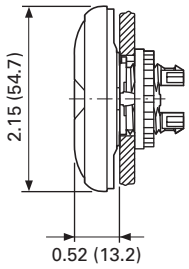
M22…-DH-_



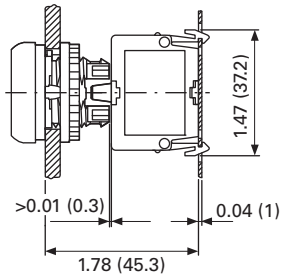
M22-DG(L)-_



M22…-DD-_

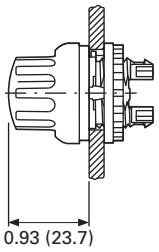


M22-D, Base Mounted

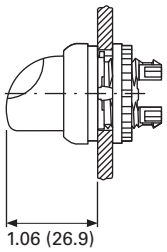


Selector Switches Operators

M22…-W-_

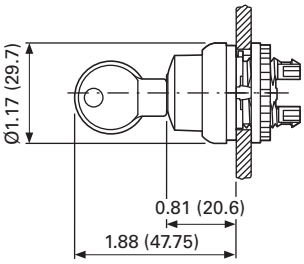


M22…-WL-_



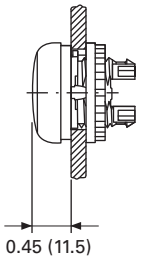
Key-Operated Selector Switches

M22…-W(R)S-_



Indicating Light

M22-L_

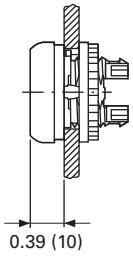


1

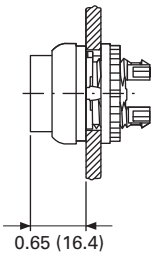
Approximate Dimensions in Inches (mm)

Illuminated Pushbuttons

M22…-DL-_

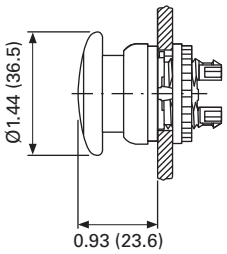


M22…-DLH_



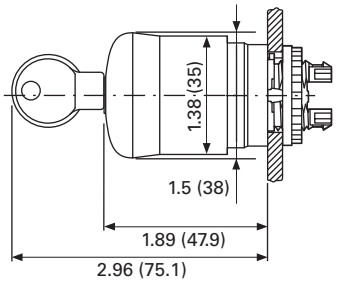
Mushroom Head Pushbutton

M22…-DP-_



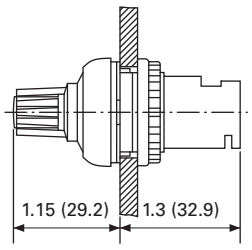
Emergency-Stop Operators

M22-PV_
M22S-PV_
M22-PVL_
M22-PVS_



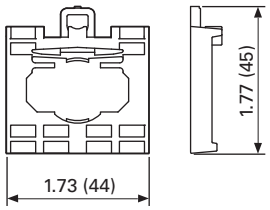
Potentiometer

M22(S)-R_

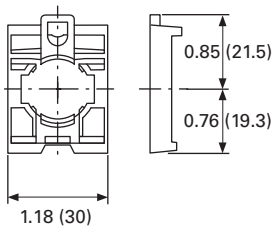


Contact Block Mounting Adapter

M22-A_

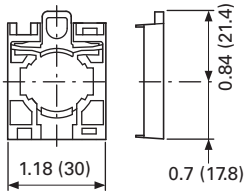


M22S-A…

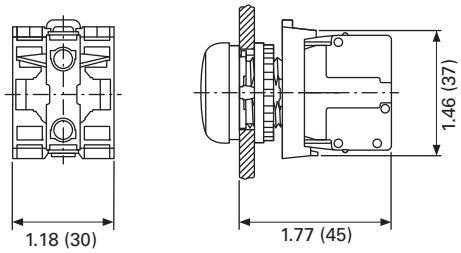


Front Mounted Centering Adapter

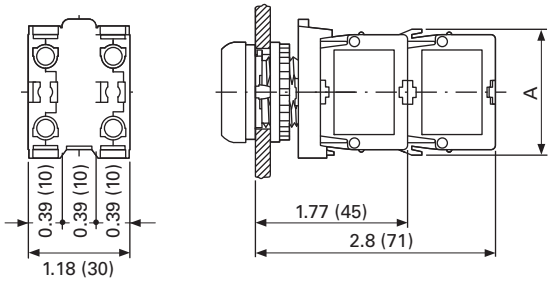
M22-ZA



Front Mounted Indicating Light



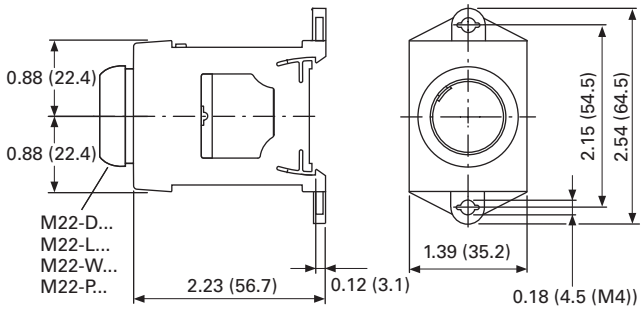
Pushbutton, Complete Devices



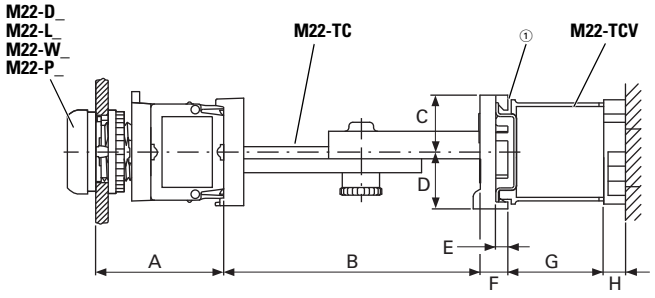
	1 x M22-K_	2 x M22-K_	1 x M22-CK_	2 x M22-CK_
A	1.46 (37.2)	1.46 (37.2)	1.54 (39.0)	1.54 (39.0)

Approximate Dimensions in Inches (mm)

DIN-Rail Mounting Adapter



Pushbuttons and Indicating Lights with M22-TC Telescopic Clip and M22-TVC Extension

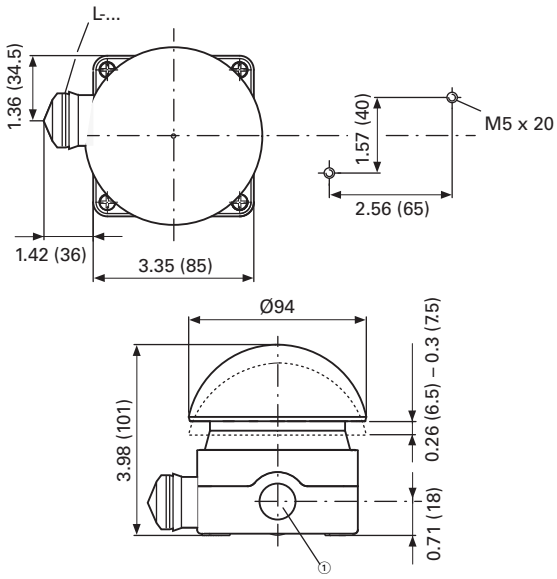


A	B	C	D	E	F	G	H
1.77 (45)	2.36–3.94 (60–100)	0.79 (20)	0.79 (20)	0.18 (4.5)	0.39 (10)	154 (39)	0.39 (10)

① Top-hat rail to IEC/EN 60715.

Palm Switches

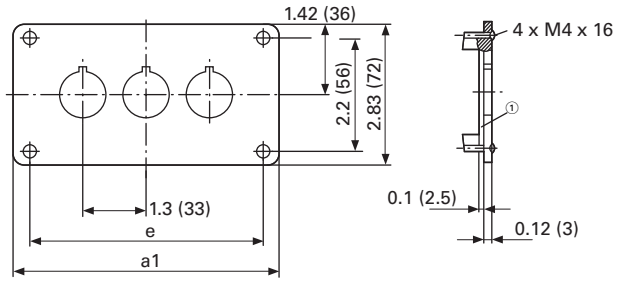
FAK_



① 3 x M20 lateral, 1 x M16 in bottom.

Front Mounted Mounting Plate

M22-E_

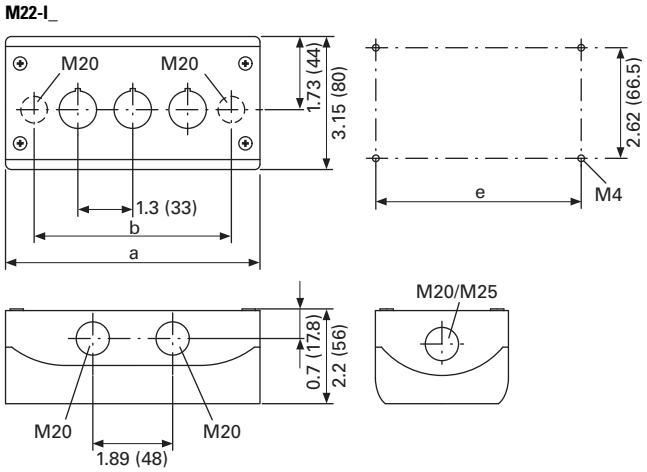


Catalog Number	a1	e
M22-E(Y) ①	2.83 (72)	2.21 (56)
M22-E2	4.13 (105)	3.50 (89)
M22-E3	5.43 (138)	4.80 (122)

Catalog Number	a1	e
M22-E4	6.73 (171)	6.10 (155)
M22-E5	8.03 (204)	7.40 (188)
M22-E6	9.33 (237)	8.70 (221)

Base Mounted Surface Mounting Enclosure

M22-I_



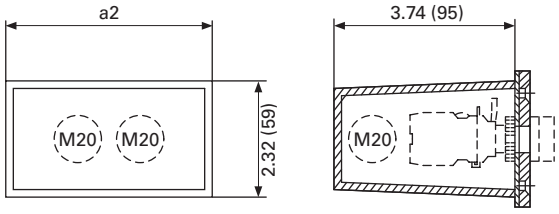
Catalog Number	Mounting Locations	a	b	e	Cable Entries		
M22-I(Y)1	1	2.83 (72.0)	1.68 (42.6)	2.30 (58.5)	2 x M16	3 x M20	2 x M25
M22-I2	2	4.72 (120.0)	3.37 (85.6)	4.19 (106.5)	2 x M20	3 x M20	2 x M25
M22-I3	3	6.02 (153.0)	4.67 (118.6)	5.49 (139.5)	2 x M20	2 x M25	4 x M20
M22-I4	4	7.32 (186.0)	5.97 (151.6)	6.79 (172.5)	2 x M20	2 x M25	4 x M20
M22-I6	6	9.92 (252.0)	8.57 (217.6)	9.39 (238.5)	2 x M20	2 x M25	4 x M20

1

Approximate Dimensions in Inches (mm)

Covers

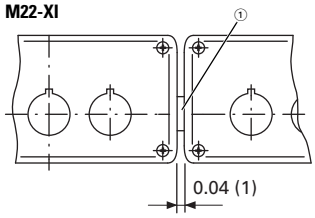
M22-H_



Catalog Number	a2	Cable Entry	Style
M22-H1	1.65 (42)	3 x M20	One-piece
M22-H2	2.95 (75)	4 x M20	
M22-H3	4.25 (108)	4 x M20	
M22-H4	5.55 (141)	4 x M20	Split
M22-H5	6.85 (174)	5 x M20	
M22-HE6	8.15 (207)	6 x M20	

Connecting Screw

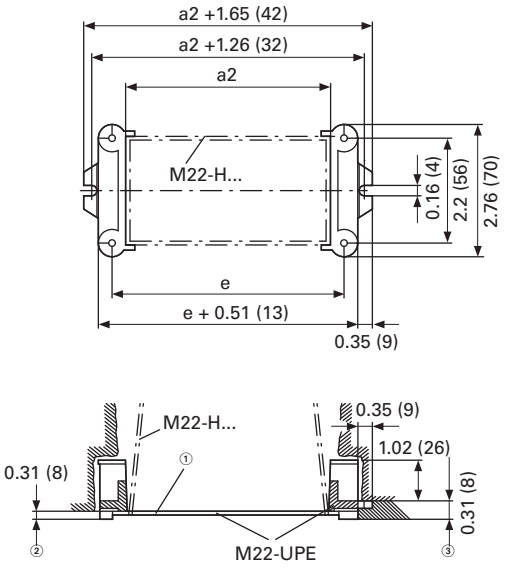
M22-XI



① Gasket.

Shroud with Plaster Keys

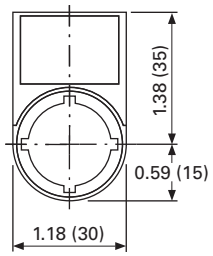
M22-UPE



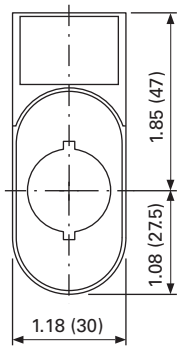
② Box for closing off when plastering.
③ Plaster thickness less than 8 mm.
④ Plaster thickness more than 8 mm.

Legend Plates

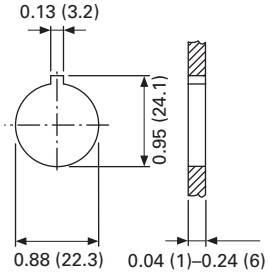
M22S-ST-_



M22S-STDD-X

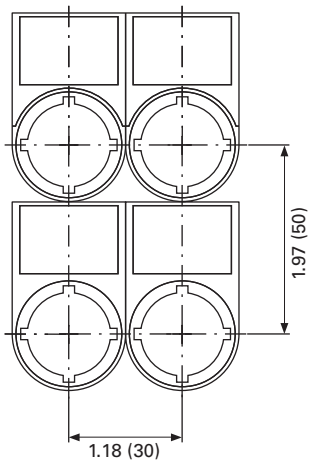


Mounting Hole with Lug Slot

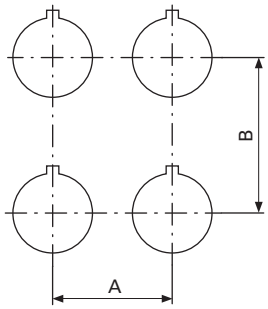


Approximate Dimensions in Inches (mm)

Grid Dimension to IEC/EN 60947

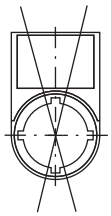


Grid Dimension for Various Combinations



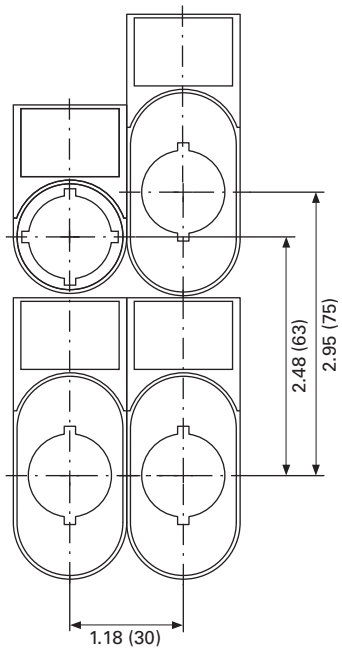
Pushbutton Diaphragm

Pushbutton diaphragm cannot be combined with label mount.

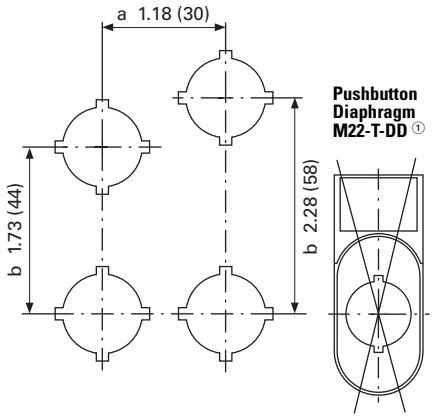


Catalog Number	A ≥	B ≥
M22(S)-_(IEC/EN 60947)	1.18 (30.0)	1.97 (50.0)
RMQ-Titan min.	1.18 (30.0)	1.58 (40.0)
M22-D_ + M22-T-D	1.30 (33.0)	1.58 (40.0)
M22-D(R)P_	1.50 (38.0)	1.58 (40.0)
M22-PV_	1.50 (38.0)	1.58 (40.0)
M22-PV(L) + M22-PL-PV	1.89 (48.0)	2.20 (56.0)
M22-PV(L)(S_) + M22-D_	1.30 (33.0)	1.58 (40.0)
M22-DDL_	1.18 (30.0)	2.17 (55.0)
M22-DDL_ + M22-T-DD	1.30 (33.0)	2.28 (58.0)
M22-ST_	1.18 (30.0)	1.97 (50.0)
M22-STDD_	1.18 (30.0)	2.95 (75.0)
M22-CK_	1.18 (30.0)	1.77 (45.0)
M22-CLED_	1.18 (30.0)	1.77 (45.0)
M22-XAK_	3.54 (90.0)	3.54 (90.0)
M22-XZK_	1.30 (33.0)	2.04 (52.0)
M22-XBK_	2.36 (60.0)	2.36 (60.0)
M22-XYK_	1.97 (50.0)	1.97 (50.0)
M22-D4	2.17 (55.0)	2.17 (55.0)
M22-WR…4	1.97 (50.0)	1.97 (50.0)
M22-W…J4	1.97 (50.0)	1.97 (50.0)

Grid Dimension for M22-DD_



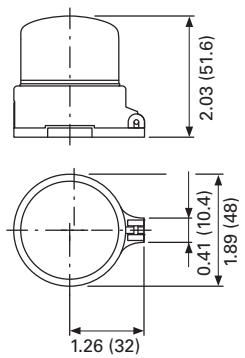
Grid Dimension for M22-DDL_



① Pushbutton diaphragm cannot be combined with label mount.

Emergency Stop Sealing Cover

M22-PL-PV

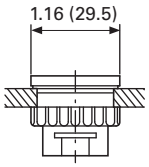


1

Approximate Dimensions in Inches (mm)

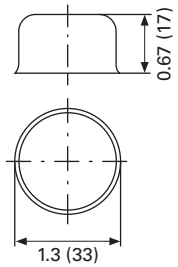
Blanking Plugs

M22…B-_

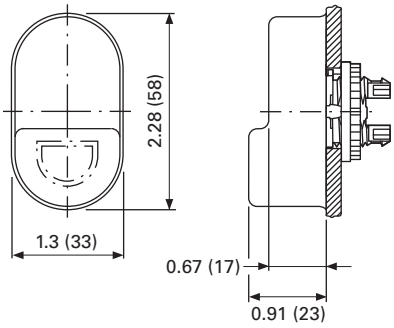


Pushbutton Diaphragm

M22-T-D

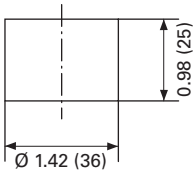


M22-T-D

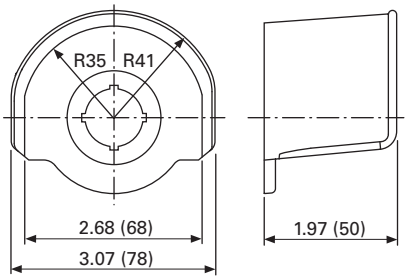


Guard Ring

M22-XGWK

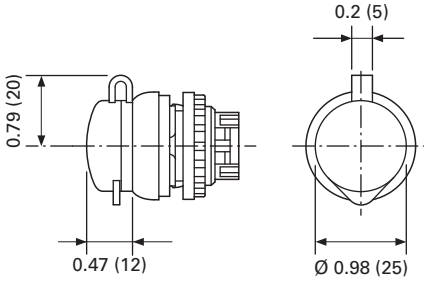


M22-XGPV



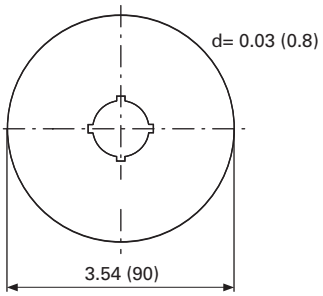
Key Cover

M22-XWS

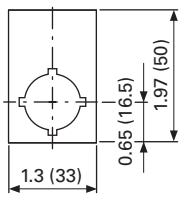


Emergency Stop Legend Plate

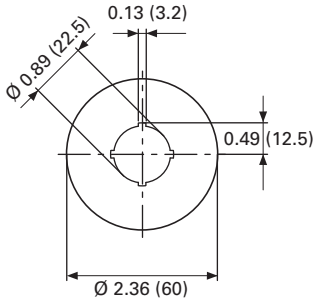
M22-XAK_



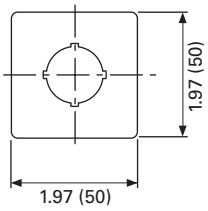
M22-X(Y)ZK_



M22-XBK-_

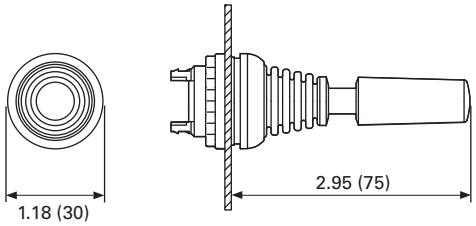


M22-XYK-_



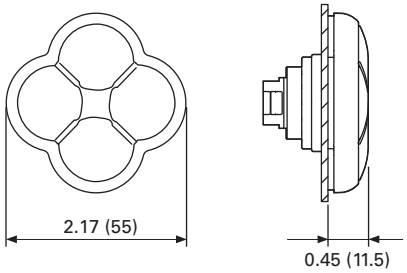
Joystick

M22…W…J_



Four-Way Pushbutton

M22…-D…4-_



Symbols Library

Instructions for Ordering Laser Inscriptions

1. Identify part number to be inscribed.
2. Pick symbol from library and identify suffix code associated with the symbol.
3. Order part number already listed in the catalog with -ETCH suffix.
4. When placing an order by fax or Vistaline on the Web, reference order item number and indicate appropriate suffix code.

Example

To order a green flush button plate with the inscription AUTO HAND:

Order Catalog Number: M22-XD-G-ETCH (see **Page V7-T1-55**).

AUTO HAND inscription is found on **Page V7-T1-133** in the Symbols Library, suffix code is X91.

In the order notes, reference item number and suffix X91.

Letter height 3 mm: max. three lines, max. 12 characters per line.

Letter height 5 mm: max. two lines, max. eight characters per line.

Note: For symbols or text not found in the Symbols Library, please contact the Eaton Technical Resource Center at 1-877-ETN CARE (386-2273) or TRC@eaton.com.

1

Letter Height Specifications: ≤ five characters; letter height = 0.197 in (5 mm). > five characters; letter height = 0.118 in (3 mm).

Text—English

Inscription	Catalog Number Suffix
STOP	GB0
START	GB1
CLOSE	GB2
UP	GB3
DOWN	GB4
OFF	GB5
ON	GB6
RUN	GB7
FAULT	GB8
TEST	GB9
OFF ON	GB10
MAN. AUTO	GB11
MAN. 0 AUTO	GB12
RESET	GB14
FORWARD	GB15
REVERSE	GB16
RAISE	GB17
LOWER	GB18
LEFT	GB19
RIGHT	GB20
BRAKE	GB21
HIGH	GB22
LOW	GB23
FAST	GB24
SLOW	GB25
FASTER	GB26
SLOWER	GB27
OPEN	GB32
PROG	GB62
CALL	GB63
OCCUPIED	GB64
BYPASS 0 1	GB65
BYPASS UP	GB66
EMERGENCY-STOP	GB99

Text—German

Inscription	Catalog Number Suffix
Halt	D0
Start	D1
Zu	D2
Auf	D3
Ab	D4
Aus	D5
En	D6
Betrieb	D7
Störung	D8
Prüfung	D9
Aus Ein	D10
HAND AUTO	D11
HAND 0 AUTO	D12
Antrieb	D13
Entsperren	D14
Vorwärts	D15
Rückwärts	D16
Heben	D17
Senken	D18
Links	D19
Rechts	D20
Bremsen	D21
Hoch	D22
Niedrig	D23
Schnell	D24
Langsam	D25
HAND	D28
AUTO	D29
Einrichten	D30
Tippen	D31
Öffnen	D32
Steuerspannung	D33
Start Automatik	D34
Lampentest	D35
Phasenkontrolle	D36
Alarm	D37
Alarm - Reset	D38
Sammelstörung	D39
Quittieren	D40
Quittierung	D41
Steuerung Ein	D42
Steuerung Aus	D43
Störung quittieren	D44
FÜHLER int. ext.	D72
HEIZUNG 1 2	D73
AUS-BLASEN	D74
SOLLWERT int. ext.	D75
Not-Aus	D99
Not - Aus quittieren	D100

Text Size: 3 mm—Max. eight characters in first line; 10 characters in second line; eight characters in third line.

Text Size: 5 mm—Max. five characters per line.

Letter Height Specifications: ≤ five characters; letter height = 0.197 in (5 mm). > five characters; letter height = 0.118 in (3 mm).

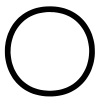
Text—French

Inscription	Catalog Number Suffix
ARRÊT	F0
MARCHE	F1
FERMÉ	F2
MONTÉE	F3
DESCENTE	F4
ARRÊT	F5
MARCHE	F6
EN SERVICE	F7
PANNE	F8
ESSAI	F9
ARRÉT MARCHE	F10
MAN. AUTO	F11
MAN. 0 AUTO	F12
REARM.	F14
AVANT	F15
ARRIÈRE	F16
MONTER	F17
DESCENDRE	F18
GAUCHE	F19
DROITE	F20
DEFAULT	F67
SOUS TENSION	F68
ARRÊT D'URGENCE	F99

Text—Swedish

Inscription	Catalog Number Suffix
STOPP	S0
START	S1
STÄNG	S2
UPP	S3
NED	S4
FRÅN	S5
TILL	S6
KÖR	S7
FEL	S8
PROV	S9
FRAN TILL	S10
MAN. AUTO	S11
MAN. 0 AUTO	S12
ÅTERSTÄLLNING	S14
FRAM	S15
BACK	S16
ÖKA	S17
MINSKA	S18
VÄNSTER	S19
HÖGER	S20
BROMS	S21
HÖG	S22
LÅG	S23
ÖPPNA	S32
IN	S45
UT	S46
NÖDSTOPP	S99

Symbols

Inscription	Catalog Number Suffix
	X0
	X1
	X2
	X3
	X4
	X5
R	X6
	X7
	X8
	X9
	X10
	X11
	X12

Inscription	Catalog Number Suffix
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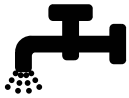
	X14
	X15
	X16
	X17
X	X18
L	X19
T	X20
IV	X21
V	X22
VI	X23
	X24
	X25

Text Size: 3 mm—Max. eight characters in first line; 10 characters in second line; eight characters in third line.

Text Size: 5 mm—Max. five characters per line.

Inscription	Catalog Number Suffix
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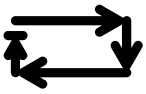
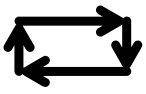
	X28
	X29
	X30
	X31
	X32
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	X34
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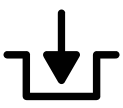
	X37
	X38
	X39

Inscription	Catalog Number Suffix
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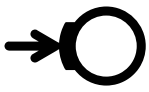
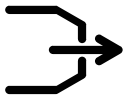
	X41
	X42
	X43
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	X45
	X46
	X47
	X48
	X49
	X50
0	X51
1	X52
2	X53

Inscription	Catalog Number Suffix
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6	X57
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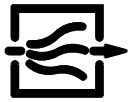	X65
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	X67

Inscription	Catalog Number Suffix
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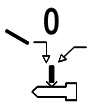
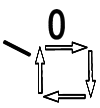
	X79
	X80
	X81

Text Size: 3 mm—Max. eight characters in first line; 10 characters in second line; eight characters in third line.

Text Size: 5 mm—Max. five characters per line.

Inscription	Catalog Number Suffix
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	X83
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	X92
	X93
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	X100
	X101
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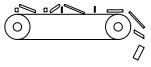
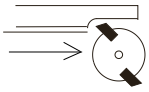
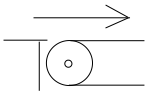
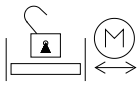
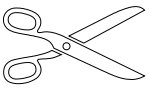
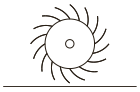
	X103

Inscription	Catalog Number Suffix
	X104
	X105
	X106
	X107
	X108
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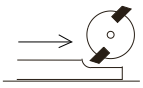	X110
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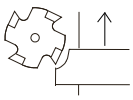
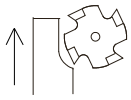
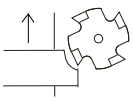
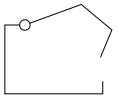
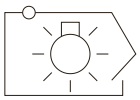
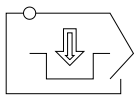
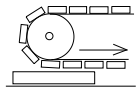
	X112
	X113
	X114
	X115
	X116
	X117

Inscription	Catalog Number Suffix
	X118
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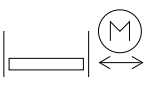
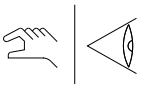
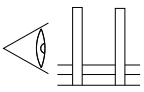
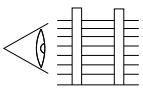
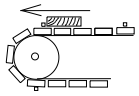
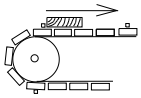
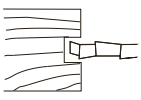
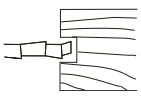
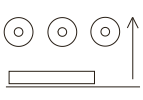
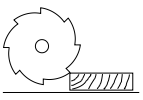
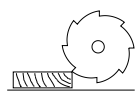
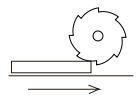
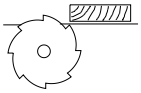
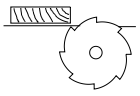
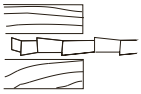
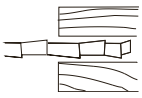
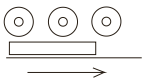
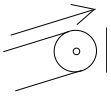
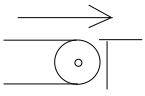
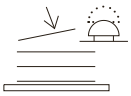
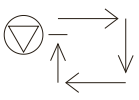
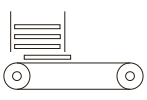
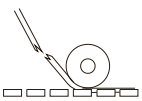
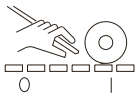
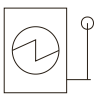
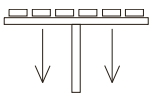
	X120
	X121
	X122
	X123
	X124
	X125
	X126
	X127
	X128
	X129
	X130
	X131

Inscription	Catalog Number Suffix
	X132
	X133
	X134
	X135
	X136
	X137
	X138
	X139
	X140
	X141
	X142
	X143
	X144
	X145

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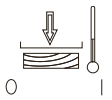
Text Size: 5 mm—Max. five characters per line.

Inscription	Catalog Number Suffix
	X146
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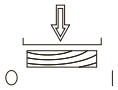	X149
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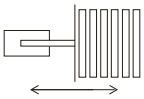
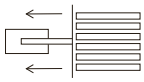
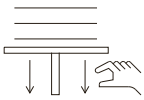
	X151
	X152
	X153
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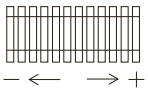
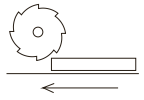
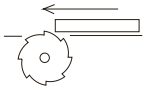
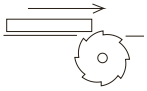
	X156
	X157
	X158
	X159

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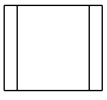	X172
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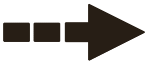	X183
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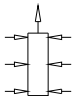
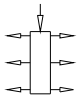
	X186
	X187

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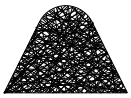	X190
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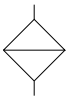	X193
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Text Size: 5 mm—Max. five characters per line.

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	X203
L 1	X204
L 2	X205
L 3	X206
A	X207
A	X208
B	X209
B	X210
I	X211
II	X212
III	X213
	X214
B	X215

Inscription	Catalog Number Suffix
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	X217
	X218
	X219
	X220
	X221
1	X222
1 / 2	X223
	X224
RESET	X225
	X226
	X227
R	X228
	X229

Inscription	Catalog Number Suffix
	X230
	X231
	X232
P	X233
	X234
	X235
	X236
	X237
0 1	X238
0 1	X239
0 1	X240
0 1	X241
	X242
0 1	X243

Inscription	Catalog Number Suffix
Kg	X244
0 1	X245
	X246
	X247
	X248
OPEN / CLOSE PROTECT.DOOR	X249
ROTATE AXIS	X250
SET IN	X251
CLAMP / UNCLAMP CLAMP.DEVICE	X252
	X253
	X254
	X255
	X256
	X257

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Text Size: 5 mm—Max. five characters per line.

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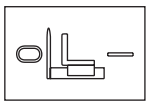	X261
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	X263
	X264

Inscription	Catalog Number Suffix
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	X266
	X267
	X268
	X269
	X270
CHEM I	X271

Inscription	Catalog Number Suffix
CHEM II	X272
CHEM III	X273
	X274
	X275
CONTI CUT	X276
	X277
TOOL UNLOCKING	X278

Inscription	Catalog Number Suffix
T1 - Tn CHANGE TOOL ARM	X279
	X280
OUT OF SERVICE	X281
	X282
	X283
	X284
	X285

Text Size: 3 mm—Max. eight characters in first line; 10 characters in second line; eight characters in third line.

Text Size: 5 mm—Max. five characters per line.

22.5 mm RMQ Compact Pushbuttons—C22

Contents

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22.5 mm RMQ Compact Pushbuttons—C22	
Product Selection Guide	**V7-T1-139**
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Emergency Stops	**V7-T1-156**
Selector Switches	**V7-T1-159**
Technical Data and Specifications	**V7-T1-166**
Dimensions	**V7-T1-168**

Product Overview

Product Description

Eaton's C22 compact pushbutton line offers an industry leading array of functional, attractive, and ergonomically designed "all-in-one" illuminated and non-illuminated pushbuttons, selector switches, emergency stops and indicating lights. The complete illuminated line is only offered in LED light units to ensure high-quality brightness and up to 100,000 hours of LED illumination. C22 operators are available with either a silver or black bezel and share the exact same front of the panel look and feel as Eaton's M22 line. The C22's compact, "all-in-one" design with the contact block(s) and operators integral provides the user with a simple solution.

The 2017 product extension C22 with pigtail has more than doubled the portfolio. The C22 with pigtail now allows customers the ability to directly mount the product without the need for pushbutton enclosures. With three different connection methods and multiple lengths, the C22 with pigtail can be used for a wide range of applications.

Wide Product Breadth

- In addition to the standard compact offering of indicating lights and pushbuttons, Eaton's C22 offers keyed and non-keyed operators and emergency stops
- Hundreds of styles with standard laser etch markings with the ability to use custom M22 laser etched buttons in conjunction with C22 buttonless operators
- Pigtail lengths vary from 0.2 to 3.5 m and allow three connection options—M8, M12 and flying lead

LED Indicators

- 100,000 hours of life in high-vibration environments
- Lenses specifically designed for LED illumination

Rugged Design

- Pushbuttons (momentary) rated for 5 million mechanical operations and selector switches (non-keyed) rated for 1 million mechanical operations
- All components have IP65 rating, and some carry IP67 and IP69K for wash-down environment, which also means oil tight
- C22 with pigtail has an IP65 rear rating, eliminating the need for an enclosure in dust and water jet applications

Standards and Certifications

All operators are IEC/EN 60947 VDE 0660, UL Listed, and CSA Certified.

All operators carry an IP65, IP66, IP67 or IP69K rating.

All products carry ratings of NEMA 1, 3R, 4X, 12 and 13

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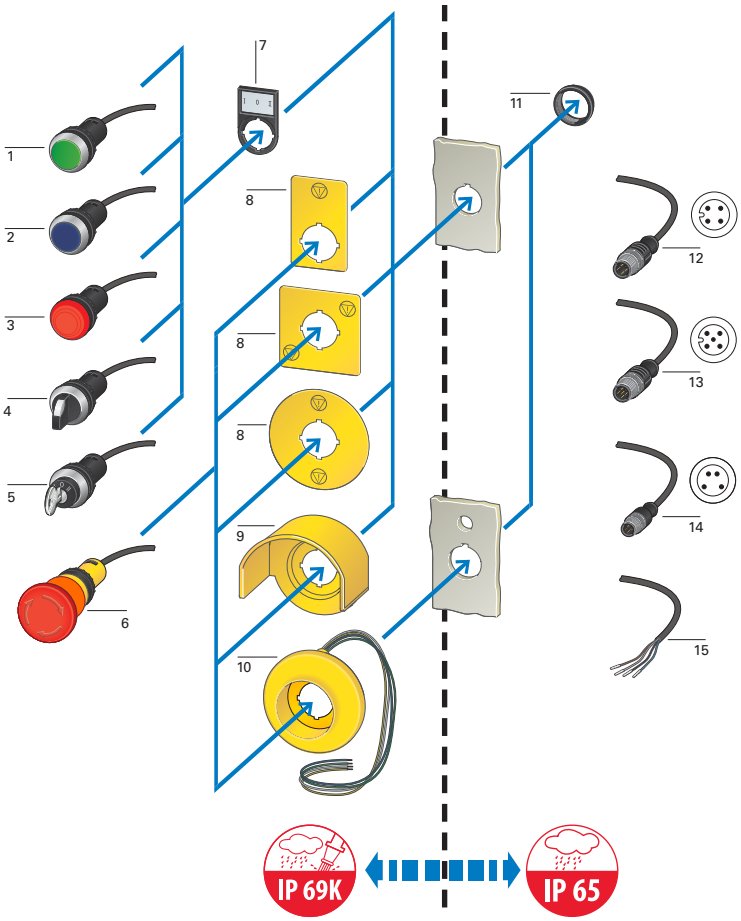
Features

- Field convertible maintained pushbuttons from maintained to momentary
- Field convertible selector switches from momentary to maintained operation and vice versa
- LED offering only for all illuminated operators
- Laser engraved pushbuttons and lenses
- Heavy-duty construction with a minimum of IP65 and UL NEMA® Type 4X/13 on front of panel operators. Many operators even carry IP67 and IP69K, for the toughest applications
- Silver or black colored nylon bezels
- Notched hole mounting with anti-rotation tab and central nut mounting on each operator
- Pushbuttons (momentary) rated for 5 million mechanical operations and selector switches (non-keyed) rated for 1 million mechanical operations
- Unique compact offerings, including keyed and non-keyed operators and emergency stops

Benefits

- Compact, "all-in-one" operator and contact block design simplifies product selection, inventory, and installation
- Field convertibility of pushbuttons and selector switches helps distributors and customers reduce inventory and increase functionality
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- Plastic construction is corrosion resistant
- Eliminate enclosure, on machine installations
- Operators are designed for rugged environments, ideal for wash-down applications (reference each operator's IP ratings for ingress protection definition)
- Anti-rotation tab saves installation time and prevents operator rotation
- High mechanical and electrical life allows for use in tough and challenging applications
- Laser inscription capabilities allow for high quality, wear-resistant markings
- By having a compact design emergency stop, the C22 design eliminates the need for self-monitoring contact blocks
- M12/M8 connections allow connection directly into communications systems such as SmartWire-DT or AS6



Legend

1	= Pushbutton
2	= Illuminated pushbutton
3	= LED indicator
4	= Knob selector
5	= Key selector
6	= E-stop
7	= Legend plate
8	= E-stop legend plates
9	= Guard rings
10	= Illuminated guard ring
11	= Mounting ring
12	= M12 connector: 4-pole
13	= M12 connector: 5-pole
14	= M8 connector: 4-pole
15	= Flying lead

Product Selection Guide

Pushbuttons

Description	Non-illuminated, flush		Non-illuminated, flush, pigtail (M8/M12/flying lead)		Illuminated, flush		Illuminated, flush, pigtail (M8/M12/flying lead)	
Operator	Momentary	Maintained	Momentary	Maintained	Momentary	Maintained	Momentary	Maintained
Product Selection	**Page V7-T1-141**	**Page V7-T1-143**	**Page V7-T1-142**	**Page V7-T1-144**	**Page V7-T1-147**	**Page V7-T1-149**	**Page V7-T1-148**	**Page V7-T1-150**

Extended Pushbuttons

Description	Non-illuminated, extended		Illuminated, extended	
Operator	Momentary	Maintained	Momentary	Maintained
Product Selection	**Page V7-T1-145**	**Page V7-T1-146**	**Page V7-T1-151**	**Page V7-T1-152**

Indicating Lights

Description	Indicating lights	Indicating lights with pigtail (M8/M12/flying lead)
Product Selection	**Page V7-T1-154**	**Page V7-T1-155**

Emergency Stops

Description	Twist release	Keyed-release	Twist release with or without indicator and flying lead/M12	Push-Pull with Pigtail (flying lead/M12)
Product Selection	**Page V7-T1-157**	**Page V7-T1-157**	**Page V7-T1-158**	**Page V7-T1-158**

Selector Switches

Description	Non-illuminated, knob type	Key-operated	Non-illuminated, knob type, with pigtail	Key-operated with pigtail
Product Selection	**Page V7-T1-160**	**Page V7-T1-162**	**Page V7-T1-161**	**Page V7-T1-164**

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Pushbuttons—Non-Illuminated and Illuminated

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Non-Illuminated Pushbuttons, Flush, Maintained	**V7-T1-143**
Non-Illuminated Pushbuttons, Flush, Maintained, with Pigtail	**V7-T1-144**
Non-Illuminated Pushbuttons, Extended, Momentary	**V7-T1-145**
Non-Illuminated Pushbuttons, Extended, Maintained	**V7-T1-146**
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Illuminated Pushbuttons, Flush, Momentary, with Pigtail	**V7-T1-148**
Illuminated Pushbuttons, Flush, Maintained	**V7-T1-149**
Illuminated Pushbuttons, Flush, Maintained, with Pigtail	**V7-T1-150**
Illuminated Pushbuttons, Extended, Momentary	**V7-T1-151**
Illuminated Pushbuttons, Extended, Maintained	**V7-T1-152**
Indicating Lights	**V7-T1-153**
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Technical Data and Specifications	**V7-T1-166**
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Pushbuttons—Non-Illuminated and Illuminated

Product Description

Eaton's C22 Compact Pushbuttons are a complete line of monoblock type pushbuttons with the contact blocks, mounting adapter, and operator all-in-one. The C22 pushbuttons offer the same look and feel as their modular counterpart, the M22. They also carry many of the same rugged ratings and options, such as laser etching, field convertibility, and LED technology. They also feature IP65 rear ratings when purchased with pigtail, M8/M12/flying lead.

Note: For additional accessories, please see **Pages V7-T1-111** to **V7-T1-117**, 22.5 mm Modular Pushbuttons—M22 Accessories.

Features

- Field convertible maintained pushbuttons from maintained to momentary
- LED offering only for improved brightness quality and up to 100,000 hours of operation
- Laser engraved pushbuttons and lenses
- Pushbuttons (momentary) rated for 5 million mechanical operations
- Pigtail option allows direct machine mounting

Protection Type

- IP67/IP69K
- NEMA 4X, 13
- IP65 rear (pigtail devices)

Catalog Number Selection

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

Non-Illuminated Pushbuttons

C22 - D - G - X1 - K10 - P1

Bezel	Operator Type	Button Plate Color	Button Etching	Contact Blocks	Connector Type
C22 = Silver **C22S** = Black	**D** = Flush, momentary **DR** = Flush, maintained **DH** = Extended, momentary **DRH** = Extended, maintained	**G** = Green **R** = Red **S** = Black **W** = White **X** = Buttonless	**X0** = ◎ **X1** = ①	**K10** = 1NO **K20** = 2NO **K01** = 1NC **K02** = 2NC **K11** = 1NO/1NC	**P1** = 0.2 m M12, 4-pole **P3** = 0.5 m M12, 4-pole **P5** = 1.0 m M12, 4-pole **P30** = 0.2 m M8, 4-pole **P31** = 0.5 m M8, 4-pole **P32** = 1.0 m M8, 4-pole **P62** = 1.0 m flying lead **P65** = 3.5 m flying lead

Product Selection

Non-Illuminated Pushbuttons, Flush, Momentary

C22(S)-D-_

Non-Illuminated Pushbuttons, Flush, Momentary

Button Color	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	—	1NO	**C22-D-G-K10**	**C22S-D-G-K10**
	—	2NO	**C22-D-G-K20**	**C22S-D-G-K20**
	—	1NO/1NC	**C22-D-G-K11**	**C22S-D-G-K11**
	X1	1NO	**C22-D-G-X1-K10**	**C22S-D-G-X1-K10**
	X1	2NO	**C22-D-G-X1-K20**	**C22S-D-G-X1-K20**
	X1	1NO/1NC	**C22-D-G-X1-K11**	**C22S-D-G-X1-K11**
Red	—	1NC	**C22-D-R-K01**	**C22S-D-R-K01**
	—	2NC	**C22-D-R-K02**	**C22S-D-R-K02**
	—	1NO/1NC	**C22-D-R-K11**	**C22S-D-R-K11**
	X0	1NC	**C22-D-R-X0-K01**	**C22S-D-R-X0-K01**
	X0	2NC	**C22-D-R-X0-K02**	**C22S-D-R-X0-K02**
	X0	1NO/1NC	**C22-D-R-X0-K11**	**C22S-D-R-X0-K11**
Black	—	1NC	**C22-D-S-K01**	**C22S-D-S-K01**
	—	2NC	**C22-D-S-K02**	**C22S-D-S-K02**
	—	1NO/1NC	**C22-D-S-K11**	**C22S-D-S-K11**
	X0	1NC	**C22-D-S-X0-K01**	**C22S-D-S-X0-K01**
	X0	2NC	**C22-D-S-X0-K02**	**C22S-D-S-X0-K02**
	X0	1NO/1NC	**C22-D-S-X0-K11**	**C22S-D-S-X0-K11**
White	—	1NO	**C22-D-W-K10**	**C22S-D-W-K10**
	—	2NO	**C22-D-W-K20**	**C22S-D-W-K20**
	—	1NO/1NC	**C22-D-W-K11**	**C22S-D-W-K11**
	X1	1NO	**C22-D-W-X1-K10**	**C22S-D-W-X1-K10**
	X1	2NO	**C22-D-W-X1-K20**	**C22S-D-W-X1-K20**
	X1	1NO/1NC	**C22-D-W-X1-K11**	**C22S-D-W-X1-K11**
Buttonless	—	1NO	**C22-D-X-K10**	**C22S-D-X-K10**
	—	2NO	**C22-D-X-K20**	**C22S-D-X-K20**
	—	1NC	**C22-D-X-K01**	**C22S-D-X-K01**
	—	2NC	**C22-D-X-K02**	**C22S-D-X-K02**
	—	1NO/1NC	**C22-D-X-K11**	**C22S-D-X-K11**

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Non-Illuminated Pushbuttons, Flush, Momentary, with Pigtail

C22-D-_

Non-Illuminated Pushbuttons, Flush, Momentary, with Pigtail

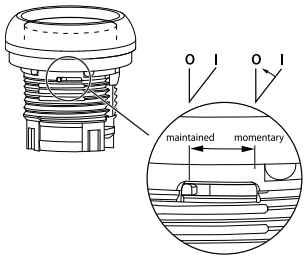
Button Color	Contacts	Connector Length	Connector Type	Silver Bezel Catalog Number
Green	1NO	0.2	M8	**C22-D-G-K10-P30**
	1NO	0.2	M12	**C22-D-G-K10-P1**
	1NO	0.5	M8	**C22-D-G-K10-P31**
	1NO	0.5	M12	**C22-D-G-K10-P3**
	1NO	1	M8	**C22-D-G-K10-P32**
	1NO	1	M12	**C22-D-G-K10-P5**
	1NO	1	Flying lead	**C22-D-G-K10-P62**
	1NO	3.5	Flying lead	**C22-D-G-K10-P65**
Red	1NC	0.2	M8	**C22-D-R-K01-P30**
	1NC	0.2	M12	**C22-D-R-K01-P1**
	1NC	0.5	M8	**C22-D-R-K01-P31**
	1NC	0.5	M12	**C22-D-R-K01-P3**
	1NC	1	M8	**C22-D-R-K01-P32**
	1NC	1	M12	**C22-D-R-K01-P5**
	1NC	1	Flying lead	**C22-D-R-K01-P62**
	1NC	3.5	Flying lead	**C22-D-R-K01-P65**
Black	1NC	0.2	M8	**C22-D-S-K01-P30**
	1NC	0.2	M12	**C22-D-S-K01-P1**
	1NC	0.5	M8	**C22-D-S-K01-P31**
	1NC	0.5	M12	**C22-D-S-K01-P3**
	1NC	1	M8	**C22-D-S-K01-P32**
	1NC	1	M12	**C22-D-S-K01-P5**
	1NC	1	Flying lead	**C22-D-S-K01-P62**
	1NC	3.5	Flying lead	**C22-D-S-K01-P65**
White	1NO	0.2	M8	**C22-D-W-K10-P30**
	1NO	0.2	M12	**C22-D-W-K10-P1**
	1NO	0.5	M8	**C22-D-W-K10-P31**
	1NO	0.5	M12	**C22-D-W-K10-P3**
	1NO	1	M8	**C22-D-W-K10-P32**
	1NO	1	M12	**C22-D-W-K10-P5**
	1NO	1	Flying lead	**C22-D-W-K10-P62**
	1NO	3.5	Flying lead	**C22-D-W-K10-P65**
Buttonless	1NO	0.2	M8	**C22-D-X-K10-P30**
	1NO	0.2	M12	**C22-D-X-K10-P1**
	1NO	0.5	M8	**C22-D-X-K10-P31**
	1NO	0.5	M12	**C22-D-X-K10-P3**
	1NO	1	M8	**C22-D-X-K10-P32**
	1NO	1	M12	**C22-D-X-K10-P5**
	1NO	1	Flying lead	**C22-D-X-K10-P62**
	1NO	3.5	Flying lead	**C22-D-X-K10-P65**
	2NO	1	Flying lead	**C22-D-X-K20-P62**
	2NO	3.5	Flying lead	**C22-D-X-K20-P65**
	1NC/1NO	1	Flying lead	**C22-D-X-K11-P62**
	1NC/1NO	3.5	Flying lead	**C22-D-X-K11-P65**
	1NC	0.2	M8	**C22-D-X-K01-P30**
	1NC	0.2	M12	**C22-D-X-K01-P1**
	1NC	0.5	M8	**C22-D-X-K01-P31**
	1NC	0.5	M12	**C22-D-X-K01-P3**
	1NC	1	M8	**C22-D-X-K01-P32**
	1NC	1	M12	**C22-D-X-K01-P5**
	1NC	1	Flying lead	**C22-D-X-K01-P62**
	1NC	3.5	Flying lead	**C22-D-X-K01-P65**
	2NC	1	Flying lead	**C22-D-X-K02-P62**
	2NC	3.5	Flying lead	**C22-D-X-K02-P65**

Non-Illuminated Pushbuttons, Flush, Maintained

C22(S)-DR-_

Non-Illuminated Pushbuttons, Flush, Maintained

Button Color	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	—	1NO	**C22-DR-G-K10**	**C22S-DR-G-K10**
	—	2NO	**C22-DR-G-K20**	**C22S-DR-G-K20**
	—	1NO/1NC	**C22-DR-G-K11**	**C22S-DR-G-K11**
	X1	1NO	**C22-DR-G-X1-K10**	**C22S-DR-G-X1-K10**
	X1	2NO	**C22-DR-G-X1-K20**	**C22S-DR-G-X1-K20**
	X1	1NO/1NC	**C22-DR-G-X1-K11**	**C22S-DR-G-X1-K11**
Red	—	1NC	**C22-DR-R-K01**	**C22S-DR-R-K01**
	—	2NC	**C22-DR-R-K02**	**C22S-DR-R-K02**
	—	1NO/1NC	**C22-DR-R-K11**	**C22S-DR-R-K11**
	X0	1NC	**C22-DR-R-X0-K01**	**C22S-DR-R-X0-K01**
	X0	2NC	**C22-DR-R-X0-K02**	**C22S-DR-R-X0-K02**
	X0	1NO/1NC	**C22-DR-R-X0-K11**	**C22S-DR-R-X0-K11**
Black	—	1NC	**C22-DR-S-K01**	**C22S-DR-S-K01**
	—	2NC	**C22-DR-S-K02**	**C22S-DR-S-K02**
	—	1NO/1NC	**C22-DR-S-K11**	**C22S-DR-S-K11**
	X0	1NC	**C22-DR-S-X0-K01**	**C22S-DR-S-X0-K01**
	X0	2NC	**C22-DR-S-X0-K02**	**C22S-DR-S-X0-K02**
	X0	1NO/1NC	**C22-DR-S-X0-K11**	**C22S-DR-S-X0-K11**
White	—	1NO	**C22-DR-W-K10**	**C22S-DR-W-K10**
	—	2NO	**C22-DR-W-K20**	**C22S-DR-W-K20**
	—	1NO/1NC	**C22-DR-W-K11**	**C22S-DR-W-K11**
	X1	1NO	**C22-DR-W-X1-K10**	**C22S-DR-W-X1-K10**
	X1	2NO	**C22-DR-W-X1-K20**	**C22S-DR-W-X1-K20**
	X1	1NO/1NC	**C22-DR-W-X1-K11**	**C22S-DR-W-X1-K11**
Buttonless	—	1NO	**C22-DR-X-K10**	**C22S-DR-X-K10**
	—	2NO	**C22-DR-X-K20**	**C22S-DR-X-K20**
	—	1NC	**C22-DR-X-K01**	**C22S-DR-X-K01**
	—	2NC	**C22-DR-X-K02**	**C22S-DR-X-K02**
	—	1NO/1NC	**C22-DR-X-K11**	**C22S-DR-X-K11**



Note: Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

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Non-Illuminated Pushbuttons, Flush, Maintained, with Pigtail

C22-DR-_

Non-Illuminated Pushbuttons, Flush, Maintained, with Pigtail

Button Color	Contacts	Connector Length	Connector Type	Silver Bezel Catalog Number
Green	1NO	0.2	M8	**C22-DR-G-K10-P30**
	1NO	0.2	M12	**C22-DR-G-K10-P1**
	1NO	0.5	M8	**C22-DR-G-K10-P31**
	1NO	0.5	M12	**C22-DR-G-K10-P3**
	1NO	1	M8	**C22-DR-G-K10-P32**
	1NO	1	M12	**C22-DR-G-K10-P5**
	1NO	1	Flying lead	**C22-DR-G-K10-P62**
	1NO	3.5	Flying lead	**C22-DR-G-K10-P65**
Red	1NC	0.2	M8	**C22-DR-R-K01-P30**
	1NC	0.2	M12	**C22-DR-R-K01-P1**
	1NC	0.5	M8	**C22-DR-R-K01-P31**
	1NC	0.5	M12	**C22-DR-R-K01-P3**
	1NC	1	M8	**C22-DR-R-K01-P32**
	1NC	1	M12	**C22-DR-R-K01-P5**
	1NC	1	Flying lead	**C22-DR-R-K01-P62**
	1NC	3.5	Flying lead	**C22-DR-R-K01-P65**
Black	1NC	0.2	M8	**C22-DR-S-K01-P30**
	1NC	0.2	M12	**C22-DR-S-K01-P1**
	1NC	0.5	M8	**C22-DR-S-K01-P31**
	1NC	0.5	M12	**C22-DR-S-K01-P3**
	1NC	1	M8	**C22-DR-S-K01-P32**
	1NC	1	M12	**C22-DR-S-K01-P5**
	1NC	1	Flying lead	**C22-DR-S-K01-P62**
	1NC	3.5	Flying lead	**C22-DR-S-K01-P65**
White	1NO	0.2	M8	**C22-DR-W-K10-P30**
	1NO	0.2	M12	**C22-DR-W-K10-P1**
	1NO	0.5	M8	**C22-DR-W-K10-P31**
	1NO	0.5	M12	**C22-DR-W-K10-P3**
	1NO	1	M8	**C22-DR-W-K10-P32**
	1NO	1	M12	**C22-DR-W-K10-P5**
	1NO	1	Flying lead	**C22-DR-W-K10-P62**
	1NO	3.5	Flying lead	**C22-DR-W-K10-P65**
Buttonless	1NO	0.2	M8	**C22-DR-X-K10-P30**
	1NO	0.2	M12	**C22-DR-X-K10-P1**
	1NO	0.5	M8	**C22-DR-X-K10-P31**
	1NO	0.5	M12	**C22-DR-X-K10-P3**
	1NO	1	M8	**C22-DR-X-K10-P32**
	1NO	1	M12	**C22-DR-X-K10-P5**
	1NO	1	Flying lead	**C22-DR-X-K10-P62**
	1NO	3.5	Flying lead	**C22-DR-X-K10-P65**
	2NO	1	Flying lead	**C22-DR-X-K20-P62**
	2NO	3.5	Flying lead	**C22-DR-X-K20-P65**
	1NC/1NO	1	Flying lead	**C22-DR-X-K11-P62**
	1NC/1NO	3.5	Flying lead	**C22-DR-X-K11-P65**
	1NC	0.2	M8	**C22-DR-X-K01-P30**
	1NC	0.2	M12	**C22-DR-X-K01-P1**
	1NC	0.5	M8	**C22-DR-X-K01-P31**
	1NC	0.5	M12	**C22-DR-X-K01-P3**
	1NC	1	M8	**C22-DR-X-K01-P32**
	1NC	1	M12	**C22-DR-X-K01-P5**
	1NC	1	Flying lead	**C22-DR-X-K01-P62**
	1NC	3.5	Flying lead	**C22-DR-X-K01-P65**
	2NC	1	Flying lead	**C22-DR-X-K02-P62**
	2NC	3.5	Flying lead	**C22-DR-X-K02-P65**

Non-Illuminated Pushbuttons, Extended, Momentary

C22(S)-DH-_

Non-Illuminated Pushbuttons, Extended, Momentary

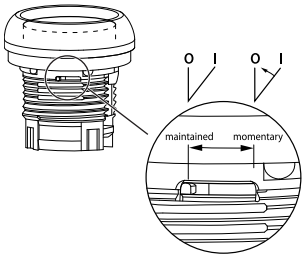
Button Color	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	—	1NO	**C22-DH-G-K10**	**C22S-DH-G-K10**
	—	2NO	**C22-DH-G-K20**	**C22S-DH-G-K20**
	—	1NO/1NC	**C22-DH-G-K11**	**C22S-DH-G-K11**
	X1	1NO	**C22-DH-G-X1-K10**	**C22S-DH-G-X1-K10**
	X1	2NO	**C22-DH-G-X1-K20**	**C22S-DH-G-X1-K20**
	X1	1NO/1NC	**C22-DH-G-X1-K11**	**C22S-DH-G-X1-K11**
Red	—	1NC	**C22-DH-R-K01**	**C22S-DH-R-K01**
	—	2NC	**C22-DH-R-K02**	**C22S-DH-R-K02**
	—	1NO/1NC	**C22-DH-R-K11**	**C22S-DH-R-K11**
	X0	1NC	**C22-DH-R-X0-K01**	**C22S-DH-R-X0-K01**
	X0	2NC	**C22-DH-R-X0-K02**	**C22S-DH-R-X0-K02**
	X0	1NO/1NC	**C22-DH-R-X0-K11**	**C22S-DH-R-X0-K11**
Black	—	1NC	**C22-DH-S-K01**	**C22S-DH-S-K01**
	—	2NC	**C22-DH-S-K02**	**C22S-DH-S-K02**
	—	1NO/1NC	**C22-DH-S-K11**	**C22S-DH-S-K11**
	X0	1NC	**C22-DH-S-X0-K01**	**C22S-DH-S-X0-K01**
	X0	2NC	**C22-DH-S-X0-K02**	**C22S-DH-S-X0-K02**
	X0	1NO/1NC	**C22-DH-S-X0-K11**	**C22S-DH-S-X0-K11**
White	—	1NO	**C22-DH-W-K10**	**C22S-DH-W-K10**
	—	2NO	**C22-DH-W-K20**	**C22S-DH-W-K20**
	—	1NO/1NC	**C22-DH-W-K11**	**C22S-DH-W-K11**
	X1	1NO	**C22-DH-W-X1-K10**	**C22S-DH-W-X1-K10**
	X1	2NO	**C22-DH-W-X1-K20**	**C22S-DH-W-X1-K20**
	X1	1NO/1NC	**C22-DH-W-X1-K11**	**C22S-DH-W-X1-K11**

Non-Illuminated Pushbuttons, Extended, Maintained

C22(S)-DRH-_

Non-Illuminated Pushbuttons, Extended, Maintained

Button Color	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	—	1NO	**C22-DRH-G-K10**	**C22S-DRH-G-K10**
	—	2NO	**C22-DRH-G-K20**	**C22S-DRH-G-K20**
	—	1NO/1NC	**C22-DRH-G-K11**	**C22S-DRH-G-K11**
	X1	1NO	**C22-DRH-G-X1-K10**	**C22S-DRH-G-X1-K10**
	X1	2NO	**C22-DRH-G-X1-K20**	**C22S-DRH-G-X1-K20**
	X1	1NO/1NC	**C22-DRH-G-X1-K11**	**C22S-DRH-G-X1-K11**
Red	—	1NC	**C22-DRH-R-K01**	**C22S-DRH-R-K01**
	—	2NC	**C22-DRH-R-K02**	**C22S-DRH-R-K02**
	—	1NO/1NC	**C22-DRH-R-K11**	**C22S-DRH-R-K11**
	X0	1NC	**C22-DRH-R-X0-K01**	**C22S-DRH-R-X0-K01**
	X0	2NC	**C22-DRH-R-X0-K02**	**C22S-DRH-R-X0-K02**
	X0	1NO/1NC	**C22-DRH-R-X0-K11**	**C22S-DRH-R-X0-K11**
Black	—	1NC	**C22-DRH-S-K01**	**C22S-DRH-S-K01**
	—	2NC	**C22-DRH-S-K02**	**C22S-DRH-S-K02**
	—	1NO/1NC	**C22-DRH-S-K11**	**C22S-DRH-S-K11**
	X0	1NC	**C22-DRH-S-X0-K01**	**C22S-DRH-S-X0-K01**
	X0	2NC	**C22-DRH-S-X0-K02**	**C22S-DRH-S-X0-K02**
	X0	1NO/1NC	**C22-DRH-S-X0-K11**	**C22S-DRH-S-X0-K11**
White	—	1NO	**C22-DRH-W-K10**	**C22S-DRH-W-K10**
	—	2NO	**C22-DRH-W-K20**	**C22S-DRH-W-K20**
	—	1NO/1NC	**C22-DRH-W-K11**	**C22S-DRH-W-K11**
	X1	1NO	**C22-DRH-W-X1-K10**	**C22S-DRH-W-X1-K10**
	X1	2NO	**C22-DRH-W-X1-K20**	**C22S-DRH-W-X1-K20**
	X1	1NO/1NC	**C22-DRH-W-X1-K11**	**C22S-DRH-W-X1-K11**



Note: Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

Catalog Number Selection

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

Illuminated Pushbuttons

C22 - DL - G - X1 - K10 - 24 - P1

Bezel	Operator Type	LED/Lens Color	Lens Etching	Contact Blocks	LED Voltage	Connector Type
C22 = Silver **C22S** = Black	**DL** = Illuminated, flush, momentary **DRL** = Illuminated, flush, maintained **DLH** = Illuminated, extended, momentary **DRLH** = Illuminated, extended, maintained	**G** = Green **R** = Red **W** = White **B** = Blue **XG** = Green without lens **XR** = Red without lens **XW** = White without lens **XB** = Blue without lens	**X0** = ◎ **X1** = ⊙	**K10** = 1NO **K01** = 1NC	**24** = 24 Vac/Vdc **120** = 120 Vac **230** = 230 Vac	**P1** = 0.2 m M12, 4-pole **P3** = 0.5 m M12, 4-pole **P5** = 1.0 m M12, 4-pole **P30** = 0.2 m M8, 4-pole **P31** = 0.5 m M8, 4-pole **P32** = 1.0 m M8, 4-pole **P62** = 1.0 m flying lead **P65** = 3.5 m flying lead

Product Selection

Illuminated, Flush, Momentary

C22(S)-DL-_

Illuminated Pushbuttons, Flush, Momentary

LED Color	Button Color	Voltage	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	Green	24 Vac/Vdc	—	1NO	**C22-DL-G-K10-24**	**C22S-DL-G-K10-24**
		120 Vac	—	1NO	**C22-DL-G-K10-120**	**C22S-DL-G-K10-120**
		230 Vac	—	1NO	**C22-DL-G-K10-230**	**C22S-DL-G-K10-230**
		24 Vac/Vdc	X1	1NO	**C22-DL-G-X1-K10-24**	**C22S-DL-G-X1-K10-24**
		120 Vac	X1	1NO	**C22-DL-G-X1-K10-120**	**C22S-DL-G-X1-K10-120**
		230 Vac	X1	1NO	**C22-DL-G-X1-K10-230**	**C22S-DL-G-X1-K10-230**
	Buttonless	24 Vac/Vdc	—	1NO	**C22-DL-XG-K10-24**	**C22S-DL-XG-K10-24**
		120 Vac	—	1NO	**C22-DL-XG-K10-120**	**C22S-DL-XG-K10-120**
		230 Vac	—	1NO	**C22-DL-XG-K10-230**	**C22S-DL-XG-K10-230**
Red	Red	24 Vac/Vdc	—	1NC	**C22-DL-R-K01-24**	**C22S-DL-R-K01-24**
		120 Vac	—	1NC	**C22-DL-R-K01-120**	**C22S-DL-R-K01-120**
		230 Vac	—	1NC	**C22-DL-R-K01-230**	**C22S-DL-R-K01-230**
		24 Vac/Vdc	X0	1NC	**C22-DL-R-X0-K01-24**	**C22S-DL-R-X0-K01-24**
		120 Vac	X0	1NC	**C22-DL-R-X0-K01-120**	**C22S-DL-R-X0-K01-120**
		230 Vac	X0	1NC	**C22-DL-R-X0-K01-230**	**C22S-DL-R-X0-K01-230**
	Buttonless	24 Vac/Vdc	—	1NC	**C22-DL-XR-K01-24**	**C22S-DL-XR-K01-24**
		120 Vac	—	1NC	**C22-DL-XR-K01-120**	**C22S-DL-XR-K01-120**
		230 Vac	—	1NC	**C22-DL-XR-K01-230**	**C22S-DL-XR-K01-230**
White	White	24 Vac/Vdc	—	1NO	**C22-DL-W-K10-24**	**C22S-DL-W-K10-24**
		120 Vac	—	1NO	**C22-DL-W-K10-120**	**C22S-DL-W-K10-120**
		230 Vac	—	1NO	**C22-DL-W-K10-230**	**C22S-DL-W-K10-230**
		24 Vac/Vdc	X1	1NO	**C22-DL-W-X1-K10-24**	**C22S-DL-W-X1-K10-24**
		120 Vac	X1	1NO	**C22-DL-W-X1-K10-120**	**C22S-DL-W-X1-K10-120**
		230 Vac	X1	1NO	**C22-DL-W-X1-K10-230**	**C22S-DL-W-X1-K10-230**
	Buttonless	24 Vac/Vdc	—	1NO	**C22-DL-XW-K10-24**	**C22S-DL-XW-K10-24**
		120 Vac	—	1NO	**C22-DL-XW-K10-120**	**C22S-DL-XW-K10-120**
		230 Vac	—	1NO	**C22-DL-XW-K10-230**	**C22S-DL-XW-K10-230**
Blue	Blue	24 Vac/Vdc	—	1NO	**C22-DL-B-K10-24**	**C22S-DL-B-K10-24**
		120 Vac	—	1NO	**C22-DL-B-K10-120**	**C22S-DL-B-K10-120**
		230 Vac	—	1NO	**C22-DL-B-K10-230**	**C22S-DL-B-K10-230**
	Buttonless	24 Vac/Vdc	—	1NO	**C22-DL-XB-K10-24**	**C22S-DL-XB-K10-24**
		120 Vac	—	1NO	**C22-DL-XB-K10-120**	**C22S-DL-XB-K10-120**
		230 Vac	—	1NO	**C22-DL-XB-K10-230**	**C22S-DL-XB-K10-230**

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Illuminated Pushbuttons, Flush, Momentary, with Pigtail

C22-DL-_

Illuminated Pushbuttons, Flush, Momentary, with Pigtail

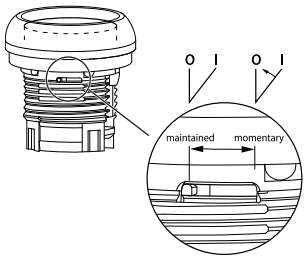
Button Color	Contacts	Connector Length	Connector Type	Silver Bezel Catalog Number
Green	1NO	0.2	M8	**C22-DL-G-K10-24-P30**
	1NO	0.2	M12	**C22-DL-G-K10-24-P1**
	1NO	0.5	M8	**C22-DL-G-K10-24-P31**
	1NO	0.5	M12	**C22-DL-G-K10-24-P3**
	1NO	1	M8	**C22-DL-G-K10-24-P32**
	1NO	1	M12	**C22-DL-G-K10-24-P5**
	1NO	1	Flying lead	**C22-DL-G-K10-24-P62**
	1NO	3.5	Flying lead	**C22-DL-G-K10-24-P65**
Red	1NC	0.2	M8	**C22-DL-R-K01-24-P30**
	1NC	0.2	M12	**C22-DL-R-K01-24-P1**
	1NC	0.5	M8	**C22-DL-R-K01-24-P31**
	1NC	0.5	M12	**C22-DL-R-K01-24-P3**
	1NC	1	M8	**C22-DL-R-K01-24-P32**
	1NC	1	M12	**C22-DL-R-K01-24-P5**
	1NC	1	Flying lead	**C22-DL-R-K01-24-P62**
	1NC	3.5	Flying lead	**C22-DL-R-K01-24-P65**
Blue	1NO	0.2	M8	**C22-DL-B-K10-24-P30**
	1NO	0.2	M12	**C22-DL-B-K10-24-P1**
	1NO	0.5	M8	**C22-DL-B-K10-24-P31**
	1NO	0.5	M12	**C22-DL-B-K10-24-P3**
	1NO	1	M8	**C22-DL-B-K10-24-P32**
	1NO	1	M12	**C22-DL-B-K10-24-P5**
	1NO	1	Flying lead	**C22-DL-B-K10-24-P62**
	1NO	3.5	Flying lead	**C22-DL-B-K10-24-P65**
White	1NO	0.2	M8	**C22-DL-W-K10-24-P30**
	1NO	0.2	M12	**C22-DL-W-K10-24-P1**
	1NO	0.5	M8	**C22-DL-W-K10-24-P31**
	1NO	0.5	M12	**C22-DL-W-K10-24-P3**
	1NO	1	M8	**C22-DL-W-K10-24-P32**
	1NO	1	M12	**C22-DL-W-K10-24-P5**
	1NO	1	Flying lead	**C22-DL-W-K10-24-P62**
	1NO	3.5	Flying lead	**C22-DL-W-K10-24-P65**

Illuminated Pushbuttons, Flush, Maintained

C22(S)-DRL-_

Illuminated Pushbuttons, Flush, Maintained

LED Color	Button Color	Voltage	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	Green	24 Vac/Vdc	1NO	**C22-DRL-G-K10-24**	**C22S-DRL-G-K10-24**
		120 Vac	1NO	**C22-DRL-G-K10-120**	**C22S-DRL-G-K10-120**
		230 Vac	1NO	**C22-DRL-G-K10-230**	**C22S-DRL-G-K10-230**
	Buttonless	24 Vac/Vdc	1NO	**C22-DRL-XG-K10-24**	**C22S-DRL-XG-K10-24**
		120 Vac	1NO	**C22-DRL-XG-K10-120**	**C22S-DRL-XG-K10-120**
		230 Vac	1NO	**C22-DRL-XG-K10-230**	**C22S-DRL-XG-K10-230**
Red	Red	24 Vac/Vdc	1NC	**C22-DRL-R-K01-24**	**C22S-DRL-R-K01-24**
		120 Vac	1NC	**C22-DRL-R-K01-120**	**C22S-DRL-R-K01-120**
		230 Vac	1NC	**C22-DRL-R-K01-230**	**C22S-DRL-R-K01-230**
	Buttonless	24 Vac/Vdc	1NC	**C22-DRL-XR-K01-24**	**C22S-DRL-XR-K01-24**
		120 Vac	1NC	**C22-DRL-XR-K01-120**	**C22S-DRL-XR-K01-120**
		230 Vac	1NC	**C22-DRL-XR-K01-230**	**C22S-DRL-XR-K01-230**
White	White	24 Vac/Vdc	1NO	**C22-DRL-W-K10-24**	**C22S-DRL-W-K10-24**
		120 Vac	1NO	**C22-DRL-W-K10-120**	**C22S-DRL-W-K10-120**
		230 Vac	1NO	**C22-DRL-W-K10-230**	**C22S-DRL-W-K10-230**
	Buttonless	24 Vac/Vdc	1NO	**C22-DRL-XW-K10-24**	**C22S-DRL-XW-K10-24**
		120 Vac	1NO	**C22-DRL-XW-K10-120**	**C22S-DRL-XW-K10-120**
		230 Vac	1NO	**C22-DRL-XW-K10-230**	**C22S-DRL-XW-K10-230**
Blue	Blue	24 Vac/Vdc	1NO	**C22-DRL-B-K10-24**	**C22S-DRL-B-K10-24**
		120 Vac	1NO	**C22-DRL-B-K10-120**	**C22S-DRL-B-K10-120**
		230 Vac	1NO	**C22-DRL-B-K10-230**	**C22S-DRL-B-K10-230**
	Buttonless	24 Vac/Vdc	1NO	**C22-DRL-XB-K10-24**	**C22S-DRL-XB-K10-24**
		120 Vac	1NO	**C22-DRL-XB-K10-120**	**C22S-DRL-XB-K10-120**
		230 Vac	1NO	**C22-DRL-XB-K10-230**	**C22S-DRL-XB-K10-230**



Note: Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

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Illuminated Pushbuttons, Flush, Maintained, with Pigtail

C22_DRL-G-_

Illuminated Pushbuttons, Flush, Maintained, with Pigtail

Button Color	Contacts	Connector Length	Connector Type	Silver Bezel Catalog Number
Green	1NO	0.2	M8	**C22-DRL-G-K10-24-P30**
	1NO	0.2	M12	**C22-DRL-G-K10-24-P1**
	1NO	0.5	M8	**C22-DRL-G-K10-24-P31**
	1NO	0.5	M12	**C22-DRL-G-K10-24-P3**
	1NO	1	M8	**C22-DRL-G-K10-24-P32**
	1NO	1	M12	**C22-DRL-G-K10-24-P5**
	1NO	1	Flying lead	**C22-DRL-G-K10-24-P62**
	1NO	3.5	Flying lead	**C22-DRL-G-K10-24-P65**
Red	1NC	0.2	M8	**C22-DRL-R-K01-24-P30**
	1NC	0.2	M12	**C22-DRL-R-K01-24-P1**
	1NC	0.5	M8	**C22-DRL-R-K01-24-P31**
	1NC	0.5	M12	**C22-DRL-R-K01-24-P3**
	1NC	1	M8	**C22-DRL-R-K01-24-P32**
	1NC	1	M12	**C22-DRL-R-K01-24-P5**
	1NC	1	Flying lead	**C22-DRL-R-K01-24-P62**
	1NC	3.5	Flying lead	**C22-DRL-R-K01-24-P65**
Blue	1NO	0.2	M8	**C22-DRL-B-K10-24-P30**
	1NO	0.2	M12	**C22-DRL-B-K10-24-P1**
	1NO	0.5	M8	**C22-DRL-B-K10-24-P31**
	1NO	0.5	M12	**C22-DRL-B-K10-24-P3**
	1NO	1	M8	**C22-DRL-B-K10-24-P32**
	1NO	1	M12	**C22-DRL-B-K10-24-P5**
	1NO	1	Flying lead	**C22-DRL-B-K10-24-P62**
	1NO	3.5	Flying lead	**C22-DRL-B-K10-24-P65**
White	1NO	0.2	M8	**C22-DRL-W-K10-24-P30**
	1NO	0.2	M12	**C22-DRL-W-K10-24-P1**
	1NO	0.5	M8	**C22-DRL-W-K10-24-P31**
	1NO	0.5	M12	**C22-DRL-W-K10-24-P3**
	1NO	1	M8	**C22-DRL-W-K10-24-P32**
	1NO	1	M12	**C22-DRL-W-K10-24-P5**
	1NO	1	Flying lead	**C22-DRL-W-K10-24-P62**
	1NO	3.5	Flying lead	**C22-DRL-W-K10-24-P65**

Illuminated Pushbuttons, Extended, Momentary

C22(S)-DLH-_

Illuminated Pushbuttons, Extended, Momentary

LED Color	Button Color	Voltage	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	Green	24 Vac/Vdc	—	1NO	**C22-DLH-G-K10-24**	**C22S-DLH-G-K10-24**
		120 Vac	—	1NO	**C22-DLH-G-K10-120**	**C22S-DLH-G-K10-120**
		230 Vac	—	1NO	**C22-DLH-G-K10-230**	**C22S-DLH-G-K10-230**
		24 Vac/Vdc	X1	1NO	**C22-DLH-G-X1-K10-24**	**C22S-DLH-G-X1-K10-24**
		120 Vac	X1	1NO	**C22-DLH-G-X1-K10-120**	**C22S-DLH-G-X1-K10-12**
		230 Vac	X1	1NO	**C22-DLH-G-X1-K10-230**	**C22S-DLH-G-X1-K10-23**
Red	Red	24 Vac/Vdc	—	1NC	**C22-DLH-R-K01-24**	**C22S-DLH-R-K01-24**
		120 Vac	—	1NC	**C22-DLH-R-K01-120**	**C22S-DLH-R-K01-120**
		230 Vac	—	1NC	**C22-DLH-R-K01-230**	**C22S-DLH-R-K01-230**
		24 Vac/Vdc	X0	1NC	**C22-DLH-R-X0-K01-24**	**C22S-DLH-R-X0-K01-24**
		120 Vac	X0	1NC	**C22-DLH-R-X0-K01-120**	**C22S-DLH-R-X0-K01-12**
		230 Vac	X0	1NC	**C22-DLH-R-X0-K01-230**	**C22S-DLH-R-X0-K01-23**
White	White	24 Vac/Vdc	—	1NO	**C22-DLH-W-K10-24**	**C22S-DLH-W-K10-24**
		120 Vac	—	1NO	**C22-DLH-W-K10-120**	**C22S-DLH-W-K10-120**
		230 Vac	—	1NO	**C22-DLH-W-K10-230**	**C22S-DLH-W-K10-230**
		24 Vac/Vdc	X1	1NO	**C22-DLH-W-X1-K10-24**	**C22S-DLH-W-X1-K10-24**
		120 Vac	X1	1NO	**C22-DLH-W-X1-K10-120**	**C22S-DLH-W-X1-K10-12**
		230 Vac	X1	1NO	**C22-DLH-W-X1-K10-230**	**C22S-DLH-W-X1-K10-23**
Blue	Blue	24 Vac/Vdc	—	1NO	**C22-DLH-B-K10-24**	**C22S-DLH-B-K10-24**
		120 Vac	—	1NO	**C22-DLH-B-K10-120**	**C22S-DLH-B-K10-120**
		230 Vac	—	1NO	**C22-DLH-B-K10-230**	**C22S-DLH-B-K10-230**

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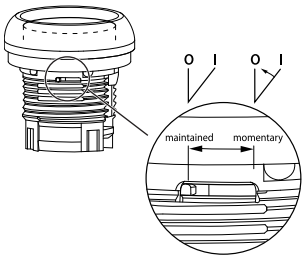
Illuminated Pushbuttons, Extended, Maintained

C22(S)-DRLH-_

Illuminated Pushbuttons, Flush Extended, Maintained

LED Color	Button Color	Voltage	Button Etching	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Green	Green	24 Vac/Vdc	—	1NO	**C22-DRLH-G-K10-24**	**C22S-DRLH-G-K10-24**
		120 Vac	—	1NO	**C22-DRLH-G-K10-120**	**C22S-DRLH-G-K10-120**
		230 Vac	—	1NO	**C22-DRLH-G-K10-230**	**C22S-DRLH-G-K10-230**
		24 Vac/Vdc	X1	1NO	**C22-DRLH-G-X1-K10-24**	**C22S-DRLH-G-X1-K10-24**
		120 Vac	X1	1NO	**C22-DRLH-G-X1-K10-120**	**C22S-DRLH-G-X1-K10-120**
		230 Vac	X1	1NO	**C22-DRLH-G-X1-K10-230**	**C22S-DRLH-G-X1-K10-230**
Red	Red	24 Vac/Vdc	—	1NC	**C22-DRLH-R-K01-24**	**C22S-DRLH-R-K01-24**
		120 Vac	—	1NC	**C22-DRLH-R-K01-120**	**C22S-DRLH-R-K01-120**
		230 Vac	—	1NC	**C22-DRLH-R-K01-230**	**C22S-DRLH-R-K01-230**
		24 Vac/Vdc	X0	1NC	**C22-DRLH-R-X0-K01-24**	**C22S-DRLH-R-X0-K01-24**
		120 Vac	X0	1NC	**C22-DRLH-R-X0-K01-120**	**C22S-DRLH-R-X0-K01-120**
		230 Vac	X0	1NC	**C22-DRLH-R-X0-K01-230**	**C22S-DRLH-R-X0-K01-230**
White	White	24 Vac/Vdc	—	1NO	**C22-DRLH-W-K10-24**	**C22S-DRLH-W-K10-24**
		120 Vac	—	1NO	**C22-DRLH-W-K10-120**	**C22S-DRLH-W-K10-120**
		230 Vac	—	1NO	**C22-DRLH-W-K10-230**	**C22S-DRLH-W-K10-230**
		24 Vac/Vdc	X1	1NO	**C22-DRLH-W-X1-K10-24**	**C22S-DRLH-W-X1-K10-24**
		120 Vac	X1	1NO	**C22-DRLH-W-X1-K10-120**	**C22S-DRLH-W-X1-K10-120**
		230 Vac	X1	1NO	**C22-DRLH-W-X1-K10-230**	**C22S-DRLH-W-X1-K10-230**
Blue	Blue	24 Vac/Vdc	—	1NO	**C22-DRLH-B-K10-24**	**C22S-DRLH-B-K10-24**
		120 Vac	—	1NO	**C22-DRLH-B-K10-120**	**C22S-DRLH-B-K10-120**
		230 Vac	—	1NO	**C22-DRLH-B-K10-230**	**C22S-DRLH-B-K10-230**



Note: Maintained pushbuttons can be converted in the field to momentary operation by switching the locking ring, which is accessible through the side of the operator body.

Indicating Lights

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Indicating Lights

Product Description

C22 indicating lights use a combination of a durable, bright LED unit and modern lenses designed specifically for this type of LED to create a bright and visible indicating light. As with the pushbuttons, the indicating light lenses can be laser etched, simply order without lens and order M22/C22 custom etched lenses to attach.

Indicating lights with pigtail have options for M12, M8, or flying lead connectors, providing high degree of protection options.

Note: For additional accessories, please see **Pages V7-T1-111** to **V7-T1-117**, 22.5 mm Modular Pushbuttons—M22 Accessories.

Features

- LED offering only for improved brightness quality and up to 100,000 hours of operation
- Lenses specifically designed for LED illumination
- Lenses capable of being laser etched for custom solutions that last
- Units with pigtail allow for direct machine mounting with high degree of protection backside

Protection Type

- IP67/IP69K
- NEMA 4X, 13
- IP65 rear rating with pigtail

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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.

Indicating Lights

C22 - L - G - 24 - P1

Bezel	LED/Lens Color	LED Voltage	Connector Type
C22-L = Flush indicating light	**G** = Green **R** = Red **W** = White **Y** = Yellow **B** = Blue **XG** = Green without lens **XR** = Red without lens **XW** = White without lens ① **XB** = Blue without lens	**24** = 24 Vac/Vdc **120** = 120 Vac **230** = 230 Vac	**P1** = 0.2 m M12, 4-pole **P3** = 0.5 m M12, 4-pole **P5** = 1.0 m M12, 4-pole **P30** = 0.2 m M8, 4-pole **P31** = 0.5 m M8, 4-pole **P32** = 1.0 m M8, 4-pole **P62** = 1.0 m flying lead **P65** = 3.5 m flying lead

Product Selection

Indicating Lights

C22-L-_

Indicating Lights

Lens Color	LED Color	Voltage	Catalog Number
Green	Green	24 Vac/Vdc	**C22-L-G-24**
		120 Vac	**C22-L-G-120**
		230 Vac	**C22-L-G-230**
Red	Red	24 Vac/Vdc	**C22-L-R-24**
		120 Vac	**C22-L-R-120**
		230 Vac	**C22-L-R-230**
White	White	24 Vac/Vdc	**C22-L-W-24**
		120 Vac	**C22-L-W-120**
		230 Vac	**C22-L-W-230**
Yellow	White	24 Vac/Vdc	**C22-L-Y-24**
		120 Vac	**C22-L-Y-120**
		230 Vac	**C22-L-Y-230**
Blue	Blue	24 Vac/Vdc	**C22-L-B-24**
		120 Vac	**C22-L-B-120**
		230 Vac	**C22-L-B-230**
Without Lens	Green	24 Vac/Vdc	**C22-L-XG-24**
		120 Vac	**C22-L-XG-120**
		230 Vac	**C22-L-XG-230**
	Red	24 Vac/Vdc	**C22-L-XR-24**
		120 Vac	**C22-L-XR-120**
		230 Vac	**C22-L-XR-230**
	White	24 Vac/Vdc	**C22-L-XW-24**
		120 Vac	**C22-L-XW-120**
		230 Vac	**C22-L-XW-230**
	Blue	24 Vac/Vdc	**C22-L-XB-24**
		120 Vac	**C22-L-XB-120**
		230 Vac	**C22-L-XB-230**

Note

① Use white LED for both white and yellow lenses.

C22 with Pigtail LED Options

C22_L-_

C22 with Pigtail LED Options

24 Vac/Vdc only indicating lights.

Color	Connector Type	0.2 m Catalog Number	0.5 m Catalog Number	1.0 m Catalog Number	3.5 m Catalog Number
Green	M8	**C22-L-G-24-P30**	**C22-L-G-24-P31**	**C22-L-G-24-P32**	—
	M12	**C22-L-G-24-P1**	**C22-L-G-24-P3**	**C22-L-G-24-P5**	—
	Flying lead	—	—	**C22-L-G-24-P62**	**C22-L-G-24-P65**
Red	M8	**C22-L-R-24-P30**	**C22-L-R-24-P31**	**C22-L-R-24-P32**	—
	M12	**C22-L-R-24-P1**	**C22-L-R-24-P3**	**C22-L-R-24-P5**	—
	Flying lead	—	—	**C22-L-R-24-P62**	**C22-L-R-24-P65**
White	M8	**C22-L-W-24-P30**	**C22-L-W-24-P31**	**C22-L-W-24-P32**	—
	M12	**C22-L-W-24-P1**	**C22-L-W-24-P3**	**C22-L-W-24-P5**	—
	Flying lead	—	—	**C22-L-W-24-P62**	**C22-L-W-24-P65**
Yellow	M8	**C22-L-Y-24-P30**	**C22-L-Y-24-P31**	**C22-L-Y-24-P32**	—
	M12	**C22-L-Y-24-P1**	**C22-L-Y-24-P3**	**C22-L-Y-24-P5**	—
	Flying lead	—	—	**C22-L-Y-24-P62**	**C22-L-Y-24-P65**
Blue	M8	**C22-L-B-24-P30**	**C22-L-B-24-P31**	**C22-L-B-24-P32**	—
	M12	**C22-L-B-24-P1**	**C22-L-B-24-P3**	**C22-L-B-24-P5**	—
	Flying lead	—	—	**C22-L-B-24-P62**	**C22-L-B-24-P65**

Emergency Stops

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Emergency Stops

Product Description

C22 emergency stops are a durable and reliable solution to a variety of e-stop applications. This compact e-stop, available as twist-to-release and keyed-release, is a simple product that eliminates the need for self-monitoring contact blocks, all while still meeting almost all of the industry safety standards.

E-stops with pigtails allow for direct machine mounting, eliminating the need for an enclosure with high degree of rear protection. Flying leads also allow for quick termination to nearby controls or functional safety devices.

Note: For additional accessories, please see **Pages V7-T1-111** to **V7-T1-117**, 22.5 mm Modular Pushbuttons—M22 Accessories.

Features

- Available in push-pull, twist-release, twist-release with indicator, and key release 38 mm through 60 mm operators
- Available with M12 or flying lead pigtails, allowing direct machine mounting and easy reliable connections
- Meet functional safety requirements for E-stops

Protection Type

- Twist-Release
  - IP67/IP69K
- Keyed-Release
  - IP66
- NEMA 4X, 13
- With pigtail
  - IP65 rear rating

Catalog Number Selection

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

Emergency Stops

C22 - PVS45P - MS1 - K01 - P10

Operator Type	Key Code	Contact Blocks	Connector Type
PVT45P = Twist-release, 45 mm **PVT60P** = Twist-release, 60 mm **PVS45P** = Key-release, 45 mm **PVS60P** = Key-release, 60 mm	**MS1** = MS1 **MS2** = MS2 **MS3** = MS3 **MS4** = MS4 **MS5** = MS5 **MS6** = MS6 **MS7** = MS7 **MS8** = MS8 **RS** = Ronis-445	**K02** = 2NC **K11** = 1NO/1NC	**P10** = 0.2 m M12, 5-pole **P62** = 1.0 m flying lead **P65** = 3.5 m flying lead

Product Selection

Non-Illuminated, Twist-Release

C22-PVT_

Non-Illuminated Emergency Stops, Twist-Release

Release Method	Operator Size	Contact Block Configuration	Catalog Number
Twist-release	45 mm	2NC	**C22-PVT45P-K02**
		1NO/1NC	**C22-PVT45P-K11**
	60 mm	2NC	**C22-PVT60P-K02**
		1NO/1NC	**C22-PVT60P-K11**

Non-Illuminated, Keyed-Release

C22-PVS_

Non-Illuminated Emergency Stops, Keyed-Release

Release Method	Operator Size	Key Code	Contact Block Configuration	Catalog Number
Keyed-release	45 mm	MS1	2NC	**C22-PVS45P-MS1-K02**
			1NO/1NC	**C22-PVS45P-MS1-K11**
		MS2	2NC	**C22-PVS45P-MS2-K02**
			1NO/1NC	**C22-PVS45P-MS2-K11**
		MS3	2NC	**C22-PVS45P-MS3-K02**
			1NO/1NC	**C22-PVS45P-MS3-K11**
		MS4	2NC	**C22-PVS45P-MS4-K02**
			1NO/1NC	**C22-PVS45P-MS4-K11**
		MS5	2NC	**C22-PVS45P-MS5-K02**
			1NO/1NC	**C22-PVS45P-MS5-K11**
		MS6	2NC	**C22-PVS45P-MS6-K02**
			1NO/1NC	**C22-PVS45P-MS6-K11**
		MS7	2NC	**C22-PVS45P-MS7-K02**
			1NO/1NC	**C22-PVS45P-MS7-K11**
		MS8	2NC	**C22-PVS45P-MS8-K02**
			1NO/1NC	**C22-PVS45P-MS8-K11**
		Ronis	2NC	**C22-PVS45P-RS-K02**
			1NO/1NC	**C22-PVS45P-RS-K11**

Note: ⊖ = Safety function implemented with positive opening as defined in IEC/EN 60947-5-1.

C22-PVS_

Non-Illuminated Emergency Stops, Keyed-Release, continued

Release Method	Operator Size	Key Code	Contact Block Configuration	Catalog Number
Keyed-release	60 mm	MS1	2NC	**C22-PVS60P-MS1-K02**
			1NO/1NC	**C22-PVS60P-MS1-K11**
		MS2	2NC	**C22-PVS60P-MS2-K02**
			1NO/1NC	**C22-PVS60P-MS2-K11**
		MS3	2NC	**C22-PVS60P-MS3-K02**
			1NO/1NC	**C22-PVS60P-MS3-K11**
		MS4	2NC	**C22-PVS60P-MS4-K02**
			1NO/1NC	**C22-PVS60P-MS4-K11**
		MS5	2NC	**C22-PVS60P-MS5-K02**
			1NO/1NC	**C22-PVS60P-MS5-K11**
		MS6	2NC	**C22-PVS60P-MS6-K02**
			1NO/1NC	**C22-PVS60P-MS6-K11**
		MS7	2NC	**C22-PVS60P-MS7-K02**
			1NO/1NC	**C22-PVS60P-MS7-K11**
		MS8	2NC	**C22-PVS60P-MS8-K02**
			1NO/1NC	**C22-PVS60P-MS8-K11**
		Ronis	2NC	**C22-PVS60P-RS-K02**
			1NO/1NC	**C22-PVS60P-RS-K11**

E-stop

E-stop

C22-PV-K11-P62

C22-PVT-K02-P65

C22-PVT45PMPIK02-P65

Release Method	Operator Size	Contacts	Connector Length	Connector Type	Catalog Number
Push-pull	38 mm	2NC	1	Flying lead	**C22-PV-K02-P62**
	38 mm	2NC	3.5	Flying lead	**C22-PV-K02-P65**
	38 mm	1NO/1NC	1	Flying lead	**C22-PV-K11-P62**
	38 mm	1NO/1NC	3.5	Flying lead	**C22-PV-K11-P65**
	45 mm	2NC	0.2	M12, 5-pole	**C22-PV-K02-P10**
Twist release	38 mm	2NC	1	Flying lead	**C22-PVT-K02-P62**
	38 mm	2NC	3.5	Flying lead	**C22-PVT-K02-P65**
	38 mm	1NO/1NC	1	Flying lead	**C22-PVT-K11-P62**
	38 mm	1NO/1NC	3.5	Flying lead	**C22-PVT-K11-P65**
	45 mm	2NC	1	Flying lead	**C22-PVT45P-K02-P62**
	45 mm	2NC	3.5	Flying lead	**C22-PVT45P-K02-P65**
	45 mm	1NO/1NC	1	Flying lead	**C22-PVT45P-K11-P62**
	45 mm	1NO/1NC	3.5	Flying lead	**C22-PVT45P-K11-P65**
	45 mm	2NC	0.2	M12, 5-pole	**C22-PVT45P-K02-P10**
Twist release mechanical indication	45 mm	2NC	1	Flying lead	**C22-PVT45PMPIK02-P62**
	45 mm	2NC	3.5	Flying lead	**C22-PVT45PMPIK02-P65**
	45 mm	1NO/1NC	1	Flying lead	**C22-PVT45PMPIK11-P62**
	45 mm	1NO/1NC	3.5	Flying lead	**C22-PVT45PMPIK11-P65**

Note: ⊖ = Safety function implemented with positive opening as defined in IEC/EN 60947-5-1.

Selector Switches

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Selector Switches

Product Description

With over 20 variations of operation and 8 varieties of key codes, the C22 line offers a very complete line of selector switches.

Pigtail units come in M12, M8 or flying lead options.

Note: For additional accessories, please see **Pages V7-T1-111** to **V7-T1-117**, 22.5 mm Modular Pushbuttons—M22 Accessories.

Features

- Selector switch (non-keyed) rated for 1 million mechanical operations
- Momentary selector switches are field convertible from momentary to maintained
- Rear pigtails provide IP65 front and rear ratings, eliminating enclosure requirements and reducing installation times

Protection Type

- IP65
- NEMA 4X, 13

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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.

Selector Switches—Non-Keyed

C22 - WK - K10 - P1

Bezel	Operator Type	Contact Blocks	Connector Type
C22 = Silver **C22S** = Black	**WK** = 2-position, momentary **WKV** = 2-position, momentary, "V" position **WRK** = 2-position, maintained **WRKV** = 2-position, maintained, "V" position **WK3** = 3-position, momentary **WRK3** = 3-position, maintained	**K10** = 1NO **K20** = 2NO **K01** = 1NC **K02** = 2NC **K11** = 1NO/1NC	**P1** = 0.2 m M12, 4-pole **P3** = 0.5 m M12, 4-pole **P5** = 1.0 m M12, 4-pole **P30** = 0.2 m M8, 4-pole **P31** = 0.5 m M8, 4-pole **P32** = 1.0 m M8, 4-pole **P62** = 1.0 m flying lead **P65** = 3.5 m flying lead

Product Selection

Non-Illuminated, Knob Type

C22(S)-WK-_/
C22(S)-WRK_

Non-Illuminated Selector Switches, Knob Type

Type	Switching Position	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Two-position	Momentary 40°	1NO	**C22-WK-K10**	**C22S-WK-K10**
		2NO	**C22-WK-K20**	**C22S-WK-K20**
		1NC	**C22-WK-K01**	**C22S-WK-K01**
		2NC	**C22-WK-K02**	**C22S-WK-K02**
		1NO/1NC	**C22-WK-K11**	**C22S-WK-K11**
	Momentary 60°	1NO	**C22-WKV-K10**	**C22S-WKV-K10**
		2NO	**C22-WKV-K20**	**C22S-WKV-K20**
		1NC	**C22-WKV-K01**	**C22S-WKV-K01**
		2NC	**C22-WKV-K02**	**C22S-WKV-K02**
		1NO/1NC	**C22-WKV-K11**	**C22S-WKV-K11**
	Maintained 40°	1NO	**C22-WRK-K10**	**C22S-WRK-K10**
		2NO	**C22-WRK-K20**	**C22S-WRK-K20**
		1NC	**C22-WRK-K01**	**C22S-WRK-K01**
		2NC	**C22-WRK-K02**	**C22S-WRK-K02**
		1NO/1NC	**C22-WRK-K11**	**C22S-WRK-K11**
	Maintained 60°	1NO	**C22-WRKV-K10**	**C22S-WRKV-K10**
		2NO	**C22-WRKV-K20**	**C22S-WRKV-K20**
		1NC	**C22-WRKV-K01**	**C22S-WRKV-K01**
		2NC	**C22-WRKV-K02**	**C22S-WRKV-K02**
		1NO/1NC	**C22-WRKV-K11**	**C22S-WRKV-K11**
Three-position	Momentary 40° 40°	2NO	**C22-WK3-K20**	**C22S-WK3-K20**
		2NC	**C22-WK3-K02**	**C22S-WK3-K02**
		1NO/1NC	**C22-WK3-K11**	**C22S-WK3-K11**
	Maintained 60° 60°	2NO	**C22-WRK3-K20**	**C22S-WRK3-K20**
		2NC	**C22-WRK3-K02**	**C22S-WRK3-K02**
		1NO/1NC	**C22-WRK3-K11**	**C22S-WRK3-K11**

Note: Momentary selector switches can be field converted to maintained.

Non-Illuminated Selector Switches, Knob Type, with Pigtail

C22-W_

Non-Illuminated Selector Switches, Knob Type, with Pigtail

Type	Switching Position	Contacts	Connector Length	Connector Type	Silver Bezel Catalog Number
Two-position	Momentary	1NC	1	Flying lead	**C22-WK-K01-P62**
		1NC	3.5	Flying lead	**C22-WK-K01-P65**
		1NO	0.5	M8	**C22-WK-K10-P30**
		1NO	0.5	M12	**C22-WK-K10-P1**
		1NO	1	M8	**C22-WK-K10-P32**
		1NO	1	M12	**C22-WK-K10-P5**
		1NO	1	Flying lead	**C22-WK-K10-P62**
		1NO	3.5	Flying lead	**C22-WK-K10-P65**
		1NO/1NC	1	Flying lead	**C22-WK-K11-P62**
		1NO/1NC	3.5	Flying lead	**C22-WK-K11-P65**
		2NC	1	Flying lead	**C22-WK-K02-P62**
		2NC	3.5	Flying lead	**C22-WK-K02-P65**
		2NO	1	Flying lead	**C22-WK-K20-P62**
		2NO	3.5	Flying lead	**C22-WK-K20-P65**
	Maintained	1NC	1	Flying lead	**C22-WRK-K01-P62**
		1NC	3.5	Flying lead	**C22-WRK-K01-P65**
		1NO	0.5	M8	**C22-WRK-K10-P30**
		1NO	0.5	M12	**C22-WRK-K10-P1**
		1NO	1	M8	**C22-WRK-K10-P32**
		1NO	1	M12	**C22-WRK-K10-P5**
		1NO	1	Flying lead	**C22-WRK-K10-P62**
		1NO	3.5	Flying lead	**C22-WRK-K10-P65**
		1NO/1NC	1	Flying lead	**C22-WRK-K11-P62**
		1NO/1NC	3.5	Flying lead	**C22-WRK-K11-P65**
		2NC	1	Flying lead	**C22-WRK-K02-P62**
		2NC	3.5	Flying lead	**C22-WRK-K02-P65**
		2NO	1	Flying lead	**C22-WRK-K20-P62**
		2NO	3.5	Flying lead	**C22-WRK-K20-P65**
Three-position	Momentary	1NO/1NC	1	Flying lead	**C22-WK3-K11-P62**
		1NO/1NC	3.5	Flying lead	**C22-WK3-K11-P65**
		2NC	1	Flying lead	**C22-WK3-K02-P62**
		2NC	3.5	Flying lead	**C22-WK3-K02-P65**
		2NO	1	Flying lead	**C22-WK3-K20-P62**
		2NO	3.5	Flying lead	**C22-WK3-K20-P65**
	Maintained	1NO/1NC	1	Flying lead	**C22-WRK3-K11-P62**
		1NO/1NC	3.5	Flying lead	**C22-WRK3-K11-P65**
		2NC	1	Flying lead	**C22-WRK3-K02-P62**
		2NC	3.5	Flying lead	**C22-WRK3-K02-P65**
		2NO	1	Flying lead	**C22-WRK3-K20-P62**
		2NO	3.5	Flying lead	**C22-WRK3-K20-P65**

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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.

Selector Switches—Keyed

C22 - WS - MS1 - A1 ① - K10 - P1

Bezel	Operator Type	Key Code	Contact Blocks	Connector Type
C22 = Silver **C22S** = Black	**WS** = 2-position, momentary **WRS** = 2-position, maintained **WRS-…-A1** ① = 2-position, maintained, key removal left **WS3** = 3-position, momentary **WRS3** = 3-position, maintained	**MS1** = MS1 **MS2** = MS2 **MS3** = MS3 **MS4** = MS4 **MS5** = MS5 **MS6** = MS6 **MS7** = MS7 **MS8** = MS8	**K10** = 1NO **K20** = 2NO **K01** = 1NC **K02** = 2NC **K11** = 1NO/1NC	**P1** = 0.2 m M12, 4-pole **P3** = 0.5 m M12, 4-pole **P5** = 1.0 m M12, 4-pole **P30** = 0.2 m M8, 4-pole **P31** = 0.5 m M8, 4-pole **P32** = 1.0 m M8, 4-pole **P62** = 1.0 m flying lead **P65** = 3.5 m flying lead

Non-Illuminated, Key Operated

C22(S)-WS-MS_

Non-Illuminated Selector Switches, Key Operated

Position	Type	Key Code	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Two-position	Momentary key removal left 40°	MS1	1NO	**C22-WS-MS1-K10**	**C22S-WS-MS1-K10**
			2NO	**C22-WS-MS1-K20**	**C22S-WS-MS1-K20**
			1NC	**C22-WS-MS1-K01**	**C22S-WS-MS1-K01**
			2NC	**C22-WS-MS1-K02**	**C22S-WS-MS1-K02**
			1NO/1NC	**C22-WS-MS1-K11**	**C22S-WS-MS1-K11**
		MS2	1NO	**C22-WS-MS2-K10**	**C22S-WS-MS2-K10**
			2NO	**C22-WS-MS2-K20**	**C22S-WS-MS2-K20**
			1NC	**C22-WS-MS2-K01**	**C22S-WS-MS2-K01**
			2NC	**C22-WS-MS2-K02**	**C22S-WS-MS2-K02**
			1NO/1NC	**C22-WS-MS2-K11**	**C22S-WS-MS2-K11**
		MS3	1NO	**C22-WS-MS3-K10**	**C22S-WS-MS3-K10**
			2NO	**C22-WS-MS3-K20**	**C22S-WS-MS3-K20**
			1NC	**C22-WS-MS3-K01**	**C22S-WS-MS3-K01**
			2NC	**C22-WS-MS3-K02**	**C22S-WS-MS3-K02**
			1NO/1NC	**C22-WS-MS3-K11**	**C22S-WS-MS3-K11**
		MS4	1NO	**C22-WS-MS4-K10**	**C22S-WS-MS4-K10**
			2NO	**C22-WS-MS4-K20**	**C22S-WS-MS4-K20**
			1NC	**C22-WS-MS4-K01**	**C22S-WS-MS4-K01**
			2NC	**C22-WS-MS4-K02**	**C22S-WS-MS4-K02**
			1NO/1NC	**C22-WS-MS4-K11**	**C22S-WS-MS4-K11**
		MS5	1NO	**C22-WS-MS5-K10**	**C22S-WS-MS5-K10**
			2NO	**C22-WS-MS5-K20**	**C22S-WS-MS5-K20**
			1NC	**C22-WS-MS5-K01**	**C22S-WS-MS5-K01**
			2NC	**C22-WS-MS5-K02**	**C22S-WS-MS5-K02**
			1NO/1NC	**C22-WS-MS5-K11**	**C22S-WS-MS5-K11**

Note: Momentary selector switches can be field converted to maintained.

C22(S)-WRS-MS_

Non-Illuminated Selector Switches, Key Operated, continued

Position	Type	Key Code	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Two-position, continued	Momentary key removal left	MS6	1NO	**C22-WS-MS6-K10**	**C22S-WS-MS6-K10**
			2NO	**C22-WS-MS6-K20**	**C22S-WS-MS6-K20**
			1NC	**C22-WS-MS6-K01**	**C22S-WS-MS6-K01**
			2NC	**C22-WS-MS6-K02**	**C22S-WS-MS6-K02**
			1NO/1NC	**C22-WS-MS6-K11**	**C22S-WS-MS6-K11**
		MS7	1NO	**C22-WS-MS7-K10**	**C22S-WS-MS7-K10**
			2NO	**C22-WS-MS7-K20**	**C22S-WS-MS7-K20**
			1NC	**C22-WS-MS7-K01**	**C22S-WS-MS7-K01**
			2NC	**C22-WS-MS7-K02**	**C22S-WS-MS7-K02**
			1NO/1NC	**C22-WS-MS7-K11**	**C22S-WS-MS7-K11**
		MS8	1NO	**C22-WS-MS8-K10**	**C22S-WS-MS8-K10**
			2NO	**C22-WS-MS8-K20**	**C22S-WS-MS8-K20**
			1NC	**C22-WS-MS8-K01**	**C22S-WS-MS8-K01**
			2NC	**C22-WS-MS8-K02**	**C22S-WS-MS8-K02**
			1NO/1NC	**C22-WS-MS8-K11**	**C22S-WS-MS8-K11**
Two-position	Maintained key removal left/right	MS1	1NO	**C22-WRS-MS1-K10**	**C22S-WRS-MS1-K10**
			2NO	**C22-WRS-MS1-K20**	**C22S-WRS-MS1-K20**
			1NC	**C22-WRS-MS1-K01**	**C22S-WRS-MS1-K01**
			2NC	**C22-WRS-MS1-K02**	**C22S-WRS-MS1-K02**
			1NO/1NC	**C22-WRS-MS1-K11**	**C22S-WRS-MS1-K11**
		MS2	1NO	**C22-WRS-MS2-K10**	**C22S-WRS-MS2-K10**
			2NO	**C22-WRS-MS2-K20**	**C22S-WRS-MS2-K20**
			1NC	**C22-WRS-MS2-K01**	**C22S-WRS-MS2-K01**
			2NC	**C22-WRS-MS2-K02**	**C22S-WRS-MS2-K02**
			1NO/1NC	**C22-WRS-MS2-K11**	**C22S-WRS-MS2-K11**
		MS3	1NO	**C22-WRS-MS3-K10**	**C22S-WRS-MS3-K10**
			2NO	**C22-WRS-MS3-K20**	**C22S-WRS-MS3-K20**
			1NC	**C22-WRS-MS3-K01**	**C22S-WRS-MS3-K01**
			2NC	**C22-WRS-MS3-K02**	**C22S-WRS-MS3-K02**
			1NO/1NC	**C22-WRS-MS3-K11**	**C22S-WRS-MS3-K11**

Note: Momentary selector switches can be field converted to maintained.

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C22(S)-WRS…-MS1_

Non-Illuminated Selector Switches, Key Operated, continued

Position	Type	Key Code	Contact Block Configuration	Silver Bezel Catalog Number	Black Bezel Catalog Number
Two-position, continued	Maintained key removal left/right	MS4	1NO	**C22-WRS-MS4-K10**	**C22S-WRS-MS4-K10**
			2NO	**C22-WRS-MS4-K20**	**C22S-WRS-MS4-K20**
			1NC	**C22-WRS-MS4-K01**	**C22S-WRS-MS4-K01**
			2NC	**C22-WRS-MS4-K02**	**C22S-WRS-MS4-K02**
			1NO/1NC	**C22-WRS-MS4-K11**	**C22S-WRS-MS4-K11**
		MS5	1NO	**C22-WRS-MS5-K10**	**C22S-WRS-MS5-K10**
			2NO	**C22-WRS-MS5-K20**	**C22S-WRS-MS5-K20**
			1NC	**C22-WRS-MS5-K01**	**C22S-WRS-MS5-K01**
			2NC	**C22-WRS-MS5-K02**	**C22S-WRS-MS5-K02**
			1NO/1NC	**C22-WRS-MS5-K11**	**C22S-WRS-MS5-K11**
		MS6	1NO	**C22-WRS-MS6-K10**	**C22S-WRS-MS6-K10**
			2NO	**C22-WRS-MS6-K20**	**C22S-WRS-MS6-K20**
			1NC	**C22-WRS-MS6-K01**	**C22S-WRS-MS6-K01**
			2NC	**C22-WRS-MS6-K02**	**C22S-WRS-MS6-K02**
			1NO/1NC	**C22-WRS-MS6-K11**	**C22S-WRS-MS6-K11**
		MS7	1NO	**C22-WRS-MS7-K10**	**C22S-WRS-MS7-K10**
			2NO	**C22-WRS-MS7-K20**	**C22S-WRS-MS7-K20**
			1NC	**C22-WRS-MS7-K01**	**C22S-WRS-MS7-K01**
			2NC	**C22-WRS-MS7-K02**	**C22S-WRS-MS7-K02**
			1NO/1NC	**C22-WRS-MS7-K11**	**C22S-WRS-MS7-K11**
		MS8	1NO	**C22-WRS-MS7-K10**	**C22S-WRS-MS7-K10**
			2NO	**C22-WRS-MS7-K20**	**C22S-WRS-MS7-K20**
			1NC	**C22-WRS-MS7-K01**	**C22S-WRS-MS7-K01**
			2NC	**C22-WRS-MS7-K02**	**C22S-WRS-MS7-K02**
			1NO/1NC	**C22-WRS-MS7-K11**	**C22S-WRS-MS7-K11**
Two-position	Maintained key removal left	MS1	1NO	**C22-WRS-MS1-A1-K10**	**C22S-WRS-MS1-A1-K10**
			2NO	**C22-WRS-MS1-A1-K20**	**C22S-WRS-MS1-A1-K20**
			1NC	**C22-WRS-MS1-A1-K01**	**C22S-WRS-MS1-A1-K01**
			2NC	**C22-WRS-MS1-A1-K02**	**C22S-WRS-MS1-A1-K02**
			1NO/1NC	**C22-WRS-MS1-A1-K11**	**C22S-WRS-MS1-A1-K11**
Three Position	Momentary Key Removal Center	MS1	2NO	**C22-WS3-MS1-K20**	**C22S-WS3-MS1-K20**
			2NC	**C22-WS3-MS1-K02**	**C22S-WS3-MS1-K02**
			1NO/1NC	**C22-WS3-MS1-K11**	**C22S-WS3-MS1-K11**
	Maintained Key Removal Left/Right	MS1	2NO	**C22-WRS3-MS1-K20**	**C22S-WRS3-MS1-K20**
			2NC	**C22-WRS3-MS1-K02**	**C22S-WRS3-MS1-K02**
			1NO/1NC	**C22-WRS3-MS1-K11**	**C22S-WRS3-MS1-K11**

Note: Momentary selector switches can be field converted to maintained.

Non-Illuminated Selector Switches, Key Operated, with Pigtail

C22-W_

Non-Illuminated Selector Switches, Key Operated, with Pigtail

Position	Switching Position	Contacts	Connector Length	Connector Type	Silver Bezel Catalog Number
Two-position	Momentary	1NC	1 m	Flying lead	**C22-WS-MS1-K01-P62**
	40°	1NC	3.5 m	Flying lead	**C22-WS-MS1-K01-P65**
		1NO	0.2 m	M12	**C22-WS-MS1-K10-P1**
		1NO	0.2 m	M8	**C22-WS-MS1-K10-P30**
		1NO	1 m	M12	**C22-WS-MS1-K10-P5**
		1NO	1 m	M8	**C22-WS-MS1-K10-P32**
		1NO	1 m	Flying lead	**C22-WS-MS1-K10-P62**
		1NO	3.5 m	Flying lead	**C22-WS-MS1-K10-P65**
		1NO/1NC	1 m	Flying lead	**C22-WS-MS1-K11-P62**
		1NO/1NC	3.5 m	Flying lead	**C22-WS-MS1-K11-P65**
		2NC	1 m	Flying lead	**C22-WS-MS1-K02-P62**
		2NC	3.5 m	Flying lead	**C22-WS-MS1-K02-P65**
		2NO	1 m	Flying lead	**C22-WS-MS1-K20-P62**
		2NO	3.5 m	Flying lead	**C22-WS-MS1-K20-P65**
	Maintained	1NC	1 m	Flying lead	**C22-WRS-MS1-K01-P62**
	60°	1NC	3.5 m	Flying lead	**C22-WRS-MS1-K01-P65**
		1NO	0.2 m	M12	**C22-WRS-MS1-K10-P1**
		1NO	0.2 m	M8	**C22-WRS-MS1-K10-P30**
		1NO	1 m	M12	**C22-WRS-MS1-K10-P5**
		1NO	1 m	M8	**C22-WRS-MS1-K10-P32**
		1NO	1 m	Flying lead	**C22-WRS-MS1-K10-P62**
		1NO	3.5 m	Flying lead	**C22-WRS-MS1-K10-P65**
		1NO/1NC	1 m	Flying lead	**C22-WRS-MS1-K11-P62**
		1NO/1NC	3.5 m	Flying lead	**C22-WRS-MS1-K11-P65**
		2NC	1 m	Flying lead	**C22-WRS-MS1-K02-P62**
		2NC	3.5 m	Flying lead	**C22-WRS-MS1-K02-P65**
		2NO	1 m	Flying lead	**C22-WRS-MS1-K20-P62**
		2NO	3.5 m	Flying lead	**C22-WRS-MS1-K20-P65**
Three-position	Momentary	1NO/1NC	1 m	Flying lead	**C22-WS3-MS1-K11-P62**
	40° 40°	1NO/1NC	3.5 m	Flying lead	**C22-WS3-MS1-K11-P65**
		2NC	1 m	Flying lead	**C22-WS3-MS1-K02-P62**
		2NC	3.5 m	Flying lead	**C22-WS3-MS1-K02-P65**
		2NO	1 m	Flying lead	**C22-WS3-MS1-K20-P62**
		2NO	3.5 m	Flying lead	**C22-WS3-MS1-K20-P65**
	Maintained	1NO/1NC	1 m	Flying lead	**C22-WRS3-MS1-K11-P62**
	60° 60°	1NO/1NC	3.5 m	Flying lead	**C22-WRS3-MS1-K11-P65**
		2NC	1 m	Flying lead	**C22-WRS3-MS1-K02-P62**
		2NC	3.5 m	Flying lead	**C22-WRS3-MS1-K02-P65**
		2NO	1 m	Flying lead	**C22-WRS3-MS1-K20-P62**
		2NO	3.5 m	Flying lead	**C22-WRS3-MS1-K20-P65**

1

Technical Data and Specifications

22.5 mm RMQ Compact Pushbuttons—C22

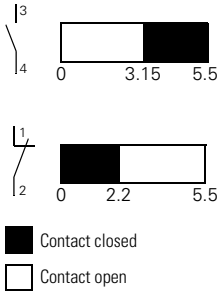
Description	Unit		Pushbutton Actuators Illuminated Pushbuttons C22 Momentary	Maintained	Indicator Lights C22	Selector Switch Actuators C22	Key-Operated Buttons C22	Emergency Stop/ Emergency Switching OFF Pushbuttons C22
General								
Standards					IEC/EN 60947 VDE 0660			
Lifespan, mechanical	Operations	x 10^6	5	1	—	1	0.1	0.05
Operating frequency	Operations/h		≥3600	≥3600	—	≥2000	≥100	≥300
Actuating force		N	≥5	≥5	—	—	—	≥50
Operating torque		Nm	—	—	—	≥0.3	≥0.5	—
Terminal screw tightening torque		Nm	0.8	0.8	0.8	0.8	0.8	0.8
Threaded ring tightening torque		Nm	2	2	2	2	2	2
Protection type			IP67, IP69K	IP67, IP69K	IP67, IP69K	IP65	IP66	IP67, IP69K
Climatic proofing					Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30			
Ambient temperature								
Open		°C	–25° to 70°	–25° to 70°	–25° to 70°	–25° to 70°	–25° to 70°	–25° to 70°
Storage		°C	–30° to 80°	–30° to 80°	–30° to 80°	–30° to 80°	–30° to 80°	–30° to 80°
Mounting position			As required	As required	As required	As required	As required	As required
Mechanical shock resistance to IEC 60068-2-27 Shock duration 11 ms, half-sinusoidal		g	30	30	30	30	30	30
Terminal capacities								
Solid		mm^2	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5
Flexible with ferrule		mm^2	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5	2 x 0.5–1.5
Contacts								
Rated impulse withstand voltage	U_{imp}	Vac	4000	4000	4000	4000	4000	4000
Rated insulation voltage	U_i	V	250	250	250	250	250	250
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	III/3	III/3
Control circuit reliability								
at 5 Vdc/1 mA	H_F	Fault probability	Values follow	Values follow	—	Values follow	Values follow	Values follow
at 17 Vdc/7 mA	H_F	Fault probability	N/O contact: statistically determined 1 failure per 17 x 10^6 operations N/C contact: statistically determined 1 failure per 0.9 x 10^6 operations		—	N/O contact: statistically determined 1 failure per 17 x 10^6 operations N/C contact: statistically determined 1 failure per 0.9 x 10^6 operations		
at 24 Vdc/5 mA	H_F	Fault probability	Values follow	Values follow	—	Values follow	Values follow	Values follow
Max. short-circuit protective device								
Fuse	gG/gL	A	10	10	—	10	10	10

22.5 mm RMQ Compact Pushbuttons—C22, continued

Description	Unit		Push-button Actuators Illuminated Pushbuttons C22 Momentary	Maintained	Indicator Lights C22	Selector Switch Actuators C22	Key-Operated Buttons C22	Emergency Stop/ Emergency Switching OFF Pushbuttons C22
Switching Capacity								
Rated operational current								
AC-15								
24V	I_e	A	4	4	—	4	4	4
110V	I_e	A	2	2	—	2	2	2
230V	I_e	A	1.5	1.5	—	1.5	1.5	1.5
DC-13								
24V	I_e	A	3	3	—	3	3	3
60V	I_e	A	1	1	—	1	1	1
110V	I_e	A	0.6	0.6	—	0.6	0.6	0.6
220V	I_e	A	0.3	0.3	—	0.3	0.3	0.3
Lifespan, electrical								
AC-15								
230V/0.5A	Operations	x 10^6	0.4	0.4	—	0.4	0.4	0.4
230V/1.0A		x 10^6	0.6	0.6	—	0.6	0.6	0.6

Contact Travel

Contact Travel Diagram



1

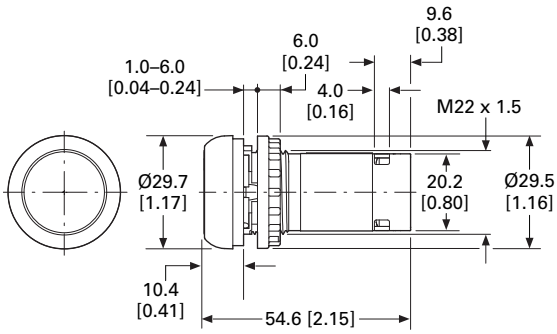
Dimensions

Approximate Dimensions in mm [in]

Illuminated Pushbuttons

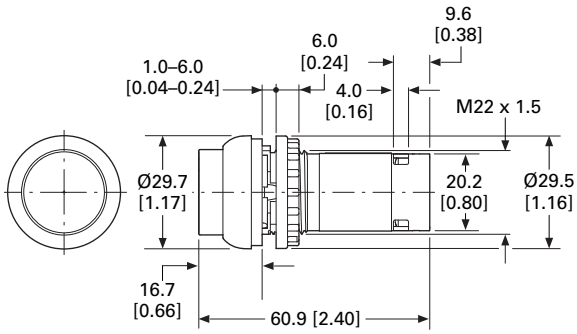
Flat

C22(S)-DRL_/C22(S)-DL_



Extended

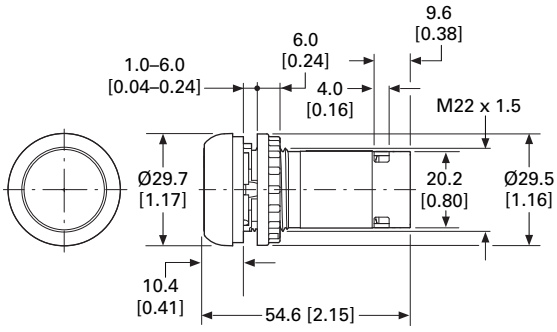
C22(S)-DRLH_/C22(S)-DLH_



Pushbutton Actuators

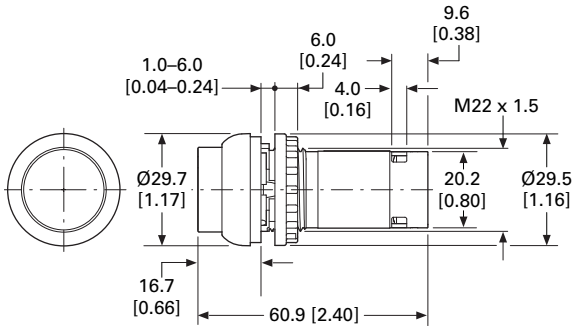
Flat

C22(S)-DR_/C22(S)-D_



Extended

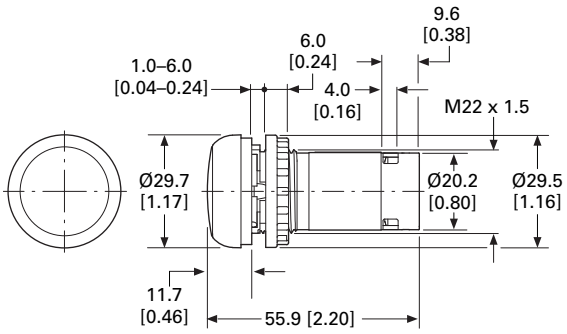
C22(S)-DRH_/C22(S)-DH_



Indicating Lights

Flat

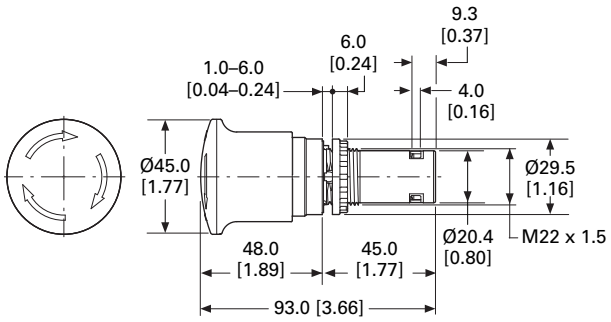
C22-L_



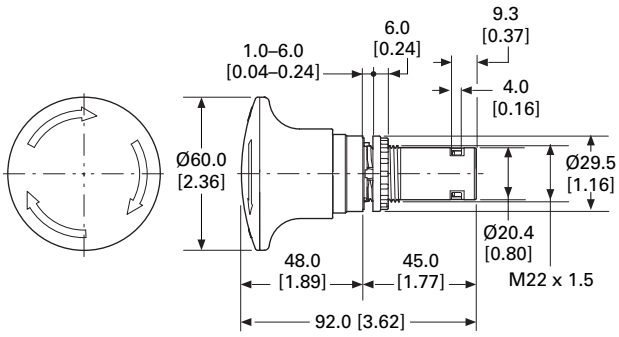
Approximate Dimensions in mm [in]

Emergency Stop/Emergency Switching OFF Pushbuttons

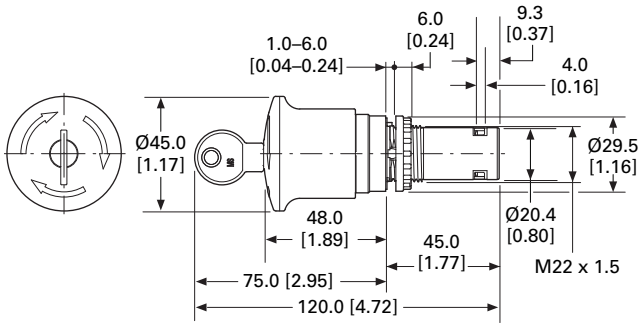
C22-PVT45P_



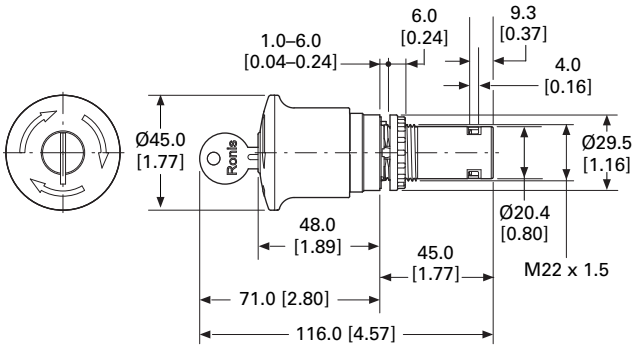
C22-PVT60P_



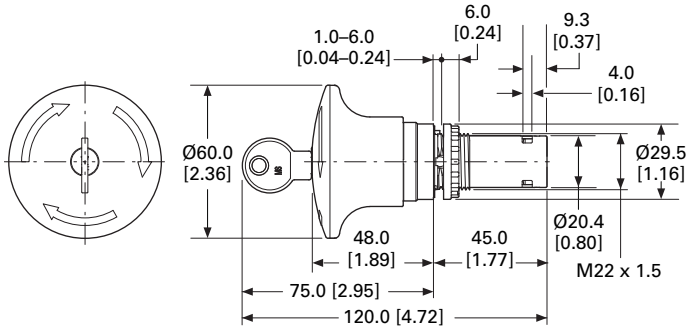
C22-PVT45P-MS_



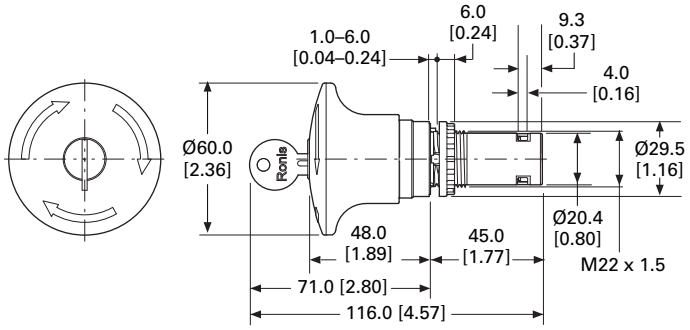
C22-PVT45P-RS_



C22-PVT60P-MS_



C22-PVT60P-MS_



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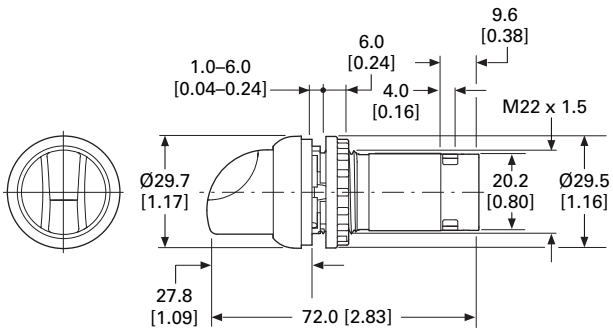
Approximate Dimensions in mm [in]

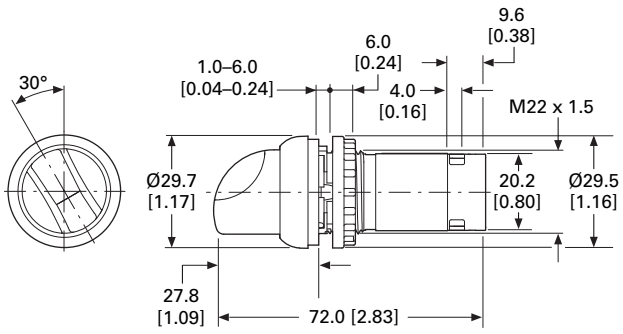
Selector Switch Actuators

C22(S)-W(R)K_



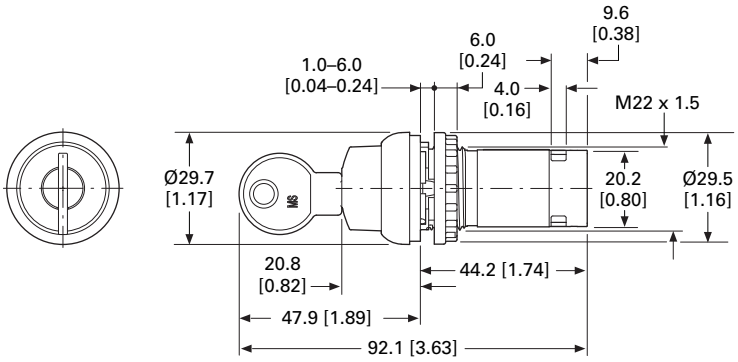
Selector Switch Actuators/V Position

C22(S)-W(R)KV_

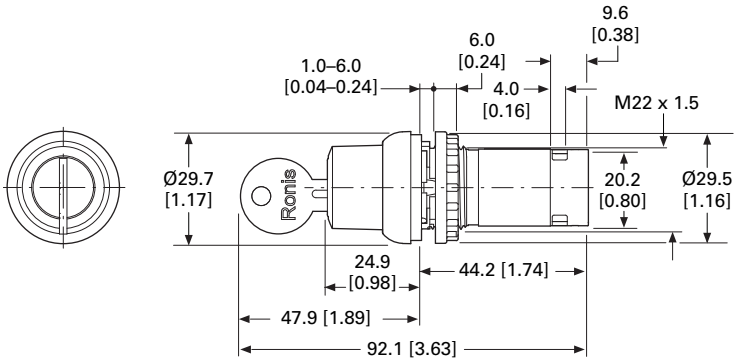


Key Operated Actuators

C22(S)-WS(3)-MS_/C22(S)-WRS(3)-MS_

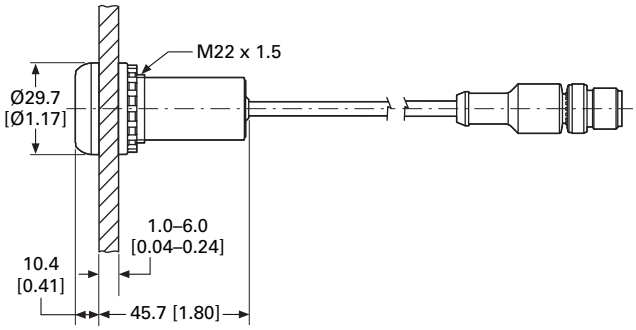


C22(S)-WS(3)-RS_/C22(S)-WRS(3)-RS_

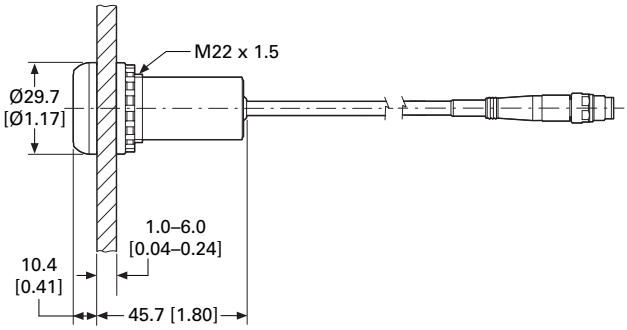


Approximate Dimensions in mm [in]

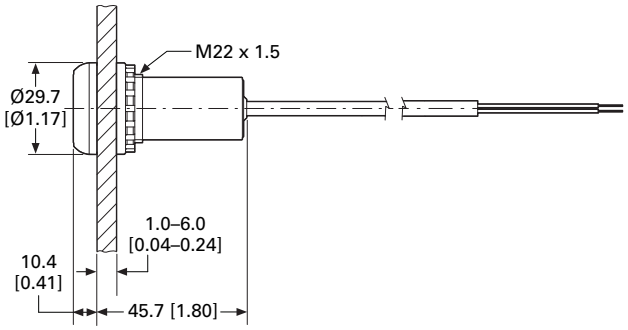
Pushbuttons, M12A
C22-D...-P1/-P3/-P5



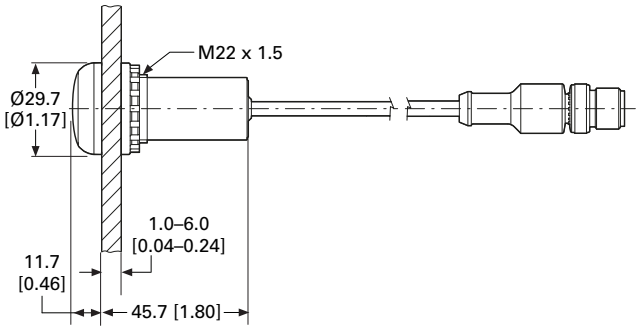
Pushbuttons, M8
C22-D...-P30/-P31/-P32



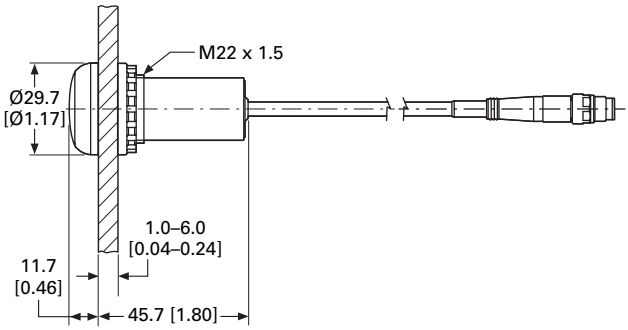
Pushbuttons, Unterminated Cable End, Flying Lead
C22-D...-P/-P62/-P65



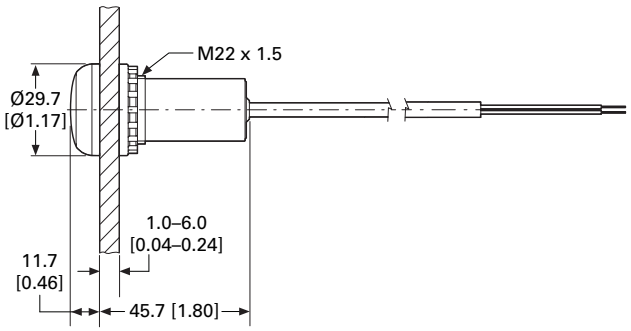
Indicator Lights, M12A
C22-L-...-P1/-P3/-P5



Indicator Lights, M8
C22-L-...-P30/-P31/-P32



Indicator Lights, Unterminated Cable End, Flying Lead
C22-L-...-P62/-P65



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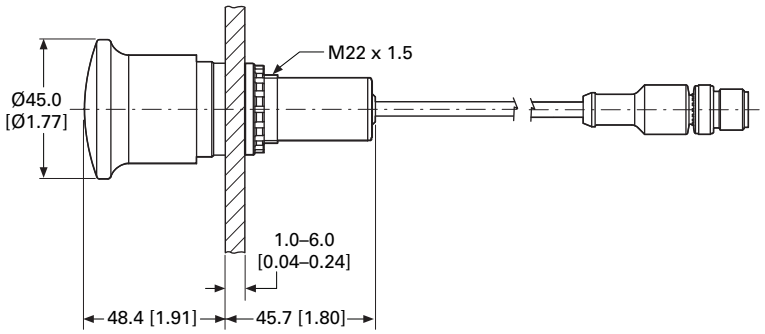
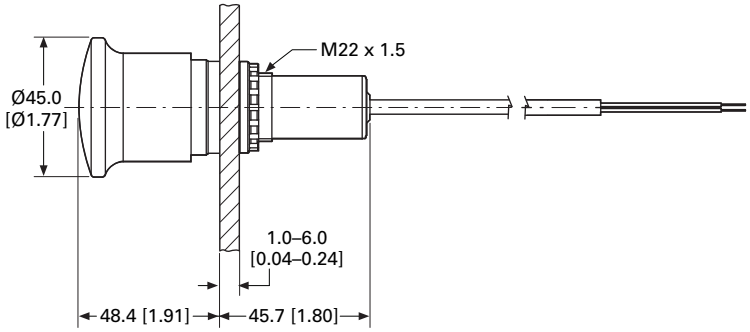
Approximate Dimensions in mm [in]

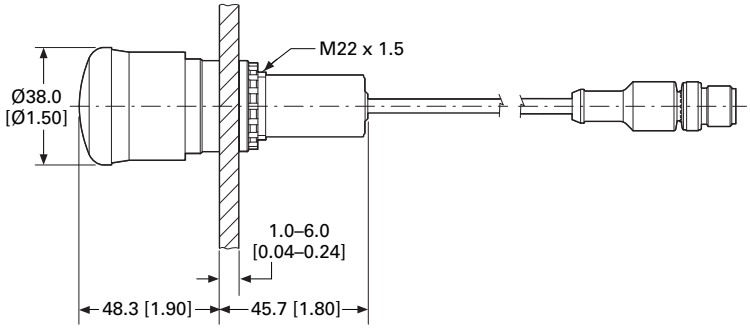
Emergency Switching Off, M12A
C22-PVT...-P10



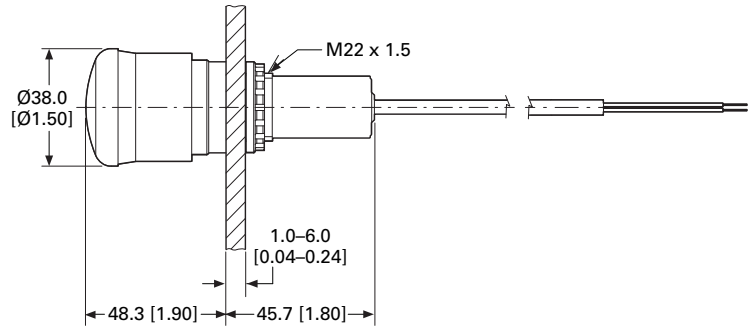
Emergency Switching Off, Unterminated Cable End, Flying Lead
C22-PVT...-P62/-P65



Emergency Switching Off, M12
C22-PV-...-P10



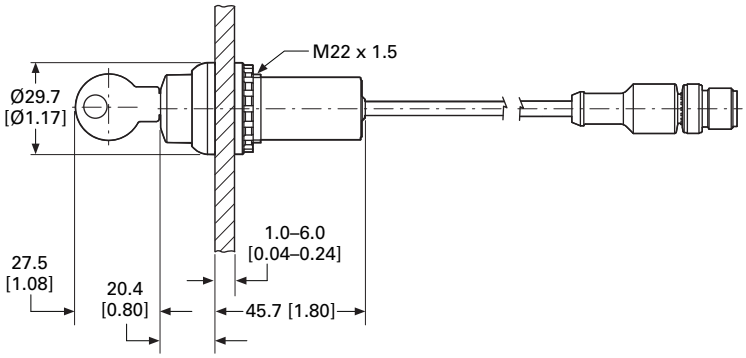
Emergency Switching Off, Unterminated Cable End, Flying Lead
C22-PV-...-P62/-P65



Approximate Dimensions in mm [in]

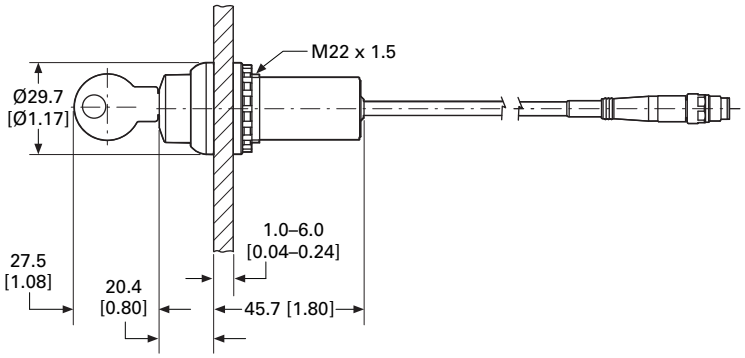
Key-Operated Buttons, M12A

C22-W(R)S(3)-MS1-...-P1/-P5



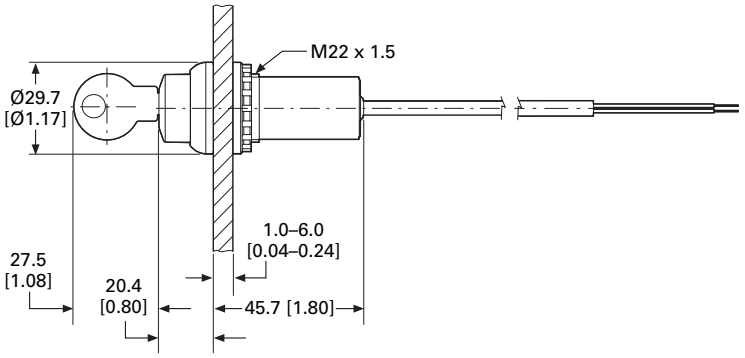
Key-Operated Buttons, M8

C22-W(R)S(3)-MS1-...-P30/-P32



Key-Operated Buttons, Unterminated Cable End, Flying Lead

C22-W(R)S(3)-MS1-...-P62/-P65



30.5 mm Square Multifunction Watertight/Oiltight—E30

Contents

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30.5 mm Square Multifunction Watertight/Oiltight—E30	
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Operator Components	**V7-T1-179**
Accessories	**V7-T1-185**
Options	**V7-T1-186**
Replacement Parts	**V7-T1-189**
Technical Data and Specifications	**V7-T1-190**
Dimensions	**V7-T1-191**

Product Description

The E30 industrial pushbutton and indicating light line from Eaton's Electrical Sector features a wide selection of square, multifunction operators which conveniently mount in a standard 30.5 mm (1-13/64 in) diameter panel hole. Up to six input and indicating functions can be grouped into a single operating head, saving valuable panel space. Attractive square operator styling, coupled with custom legending of colored buttons and lenses and many special function accessories, makes E30 components ideally suited for use on control consoles and for a variety of industrial OEM applications.

Features

Type E30 control units consist of a basic operator with one or more buttons and lenses and contact block selection dependent on the specific operator configuration.

- **Pushbutton operators** will accommodate up to four single depth stackable contact blocks behind each operating button, up to eight circuits maximum.
- **Indicating lights** are supplied complete with either a transformer light unit up to 600 Vac supply line voltage or full voltage light unit up to 120 Vac/Vdc supply line voltage.
- **Combination pushbutton with indicating light** operators are supplied complete with a transformer or full voltage unit. Contact blocks must be ordered separately, up to four circuits maximum.

Die Cast Construction

Each operator has high pressure type seals to prevent the passage of oil and other contaminants through the operator into the contact structure or panel interior. Each operator uses a Buna N cork gasket between the mounting flange on the operator and the panel to maintain oiltightness.

Standards and Certifications

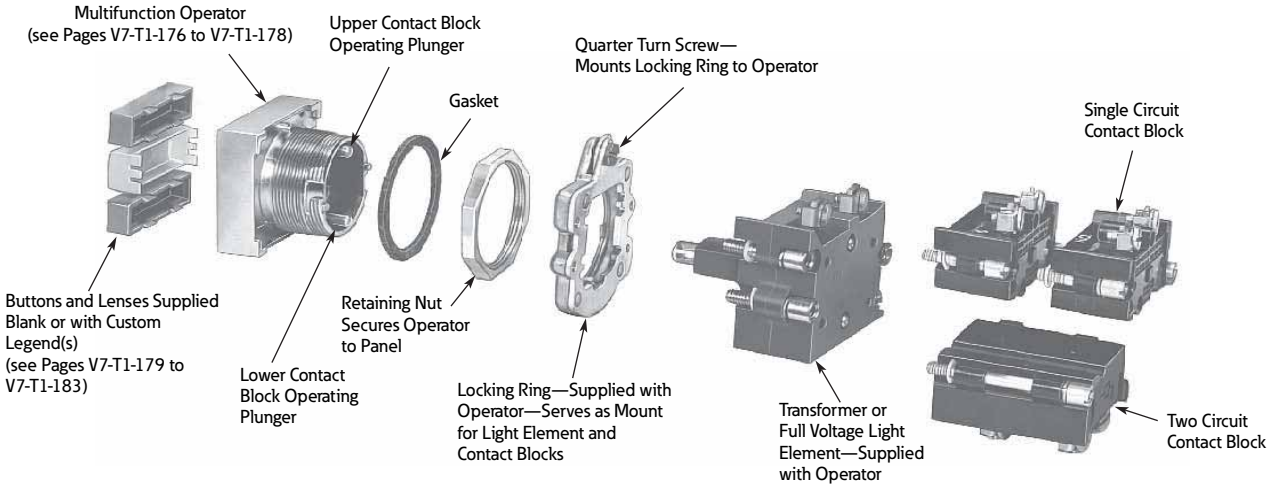
- UL Listed—File No. E131568
- CSA Certified—File No. LR68551

Ingress Protection

- Single and dual indicating lights
  - UL (NEMA) Type 1, 2, 3, 3R, 3S, 4, 4X, 12, 13
- All other operators
  - UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Product Identification

30.5 mm Square Multifunction Watertight/Oiltight



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Product Selection

Operators

When Ordering a Complete E30 Control Unit Specify

Catalog Number of …	Ordering Example (E30AB)	
Operator	E30KB130	"START"
Button(s)	E30KB231	"STOP"
Contact block(s)	E30KLA1	1NO
Accessories (if required)	E30KLA2	1NC

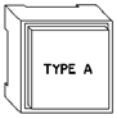
Square Multifunction Operators

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

Single Button Operator

Shown with Extended Button

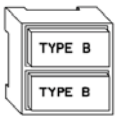
Single Button Operator/without Button (Order Button Separately)

Button Type Required ①	Operation	Special Features	Catalog Number
	Momentary	—	**E30AA**

Two Button Operator

Shown with Extended Buttons

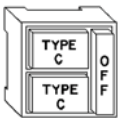
Two Button Operator/without Buttons (Order Buttons Separately)

Button Types Required ①	Operation			
	Top Button	Bottom Button	Special Features	Catalog Number
	Momentary	Momentary	—	**E30AB**
	Momentary	Momentary	With mechanical interlock	**E30AC**
	Maintained (all contacts)	Release (all contacts)	—	**E30AD** ②
	Maintained (all contacts)	Release (all contacts)	With mechanical interlock	**E30AP** ②③

Two Button Operator

Shown with Long Release Bar

Two Button Operator with Long (OFF) Release Bar—Includes OFF Bar/Button (Order Other Buttons Separately)

Button Types Required ④⑤	Operation			
	Top Button	Bottom Button	Special Features	Catalog Number
	Maintained	Maintained	—	**E30AF**
	Maintained	Maintained	With mechanical interlock	**E30AG**
	Maintained	Momentary	With mechanical interlock	**E30AH**
	Maintained (all contacts)	Maintained (bottom contacts only)	Top button operates both top and bottom contacts	**E30AK** ⑥

Notes

① Order from table on **Page V7-T1-179**.

② Limited to two single circuit, one double circuit 600V or two 120V (E30KLA9) contact blocks behind each button.

③ Buttons are interlocked so that one of the two is maintained at all times.
Depressing the other button releases the maintained button and maintains the depressed button.

④ Operators are supplied as standard with red extended bar(s) marked "OFF" as shown in sketch.
For other colors or markings, contact your nearest Eaton Distributor or call our Customer Service Center 1-800-356-1243.
For replacement of standard red release bar, order **E30KR100.**

⑤ Order from table on **Page V7-T1-180**.

⑥ Limited to two single circuit, one double circuit 600V or two 120V (E30KLA9) contact blocks behind each button.

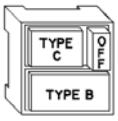
Square Multifunction Operators and Indicating Lights

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

Two Button Operator with (OFF) Release—Includes OFF Bar/Button(s) (Order Other Buttons Separately)

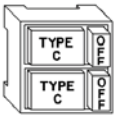
Two Button Operator

Shown with Release Bar for Top Button

Button Types Required ①②	Operation Top Button	Bottom Button	Special Features	Catalog Number
	Maintained	Momentary	Release bar for top button	**E30AL**

Two Button Operator

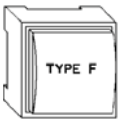
Shown with Release Bars for Each Button

	Maintained	Maintained	Individual release bars for each button	**E30AN**
	Maintained with interlock	Maintained with interlock	Individual release bars for each button	**E30AM**

Single Indicating Light Unit/without Lens (Order Lens Separately)

Single Indicating Light Unit

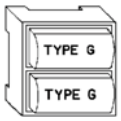
Shown with Lens

	Type of Light Element					
	Transformer (60/50 Hertz AC)			Full Voltage (60/50 Hertz AC or DC)		
Lens Type Required ③	Voltage	Lamp Number ④	Catalog Number	Voltage	Lamp Number ④	Catalog Number
	120	#259	**E30BA**	24	24PSB	**E30BJ**
				120	120PSB	**E30BM**

Dual Indicating Light Unit/without Lenses (Order Lenses Separately)

Dual Indicating Light Unit

Shown with Lens

	Type of Light Element					
	Transformer (60/50 Hertz AC)			Full Voltage (60/50 Hertz AC or DC)		
Lens Types Required ⑤	Voltage	Lamp Number ④	Catalog Number	Voltage	Lamp Number ④	Catalog Number
	120	6PSB	**E30CA**	24	24PSB	**E30CJ**
				120	120PSB	**E30CM**

Notes

① Order from table on **Page V7-T1-180**.

② Operators are supplied as standard with red extended release bar(s) marked "OFF" as shown in sketch. For other colors or markings, contact your nearest Eaton Distributor or call our Customer Service Center 1-800-356-1243. For replacement of standard red release bar, order **E30KR101**.

③ Order from table on **Page V7-T1-181**.

④ Light units will also accept LED lamps. For LED part numbers, see table on **Page V7-T1-189**.

⑤ Order from table on **Page V7-T1-182**.

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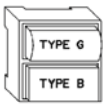
UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

Single Button Operator and Indicating Light

Shown with Button and Lens

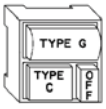
Single Button Operator with Indicating Light/without Button or Lens (Order Button and Lens Separately)

Button and Lens Types Required ①	Operation (Bottom Button)	Type of Light Element: Transformer (60/50 Hertz AC) Voltage	Lamp Number ②	Catalog Number	Full Voltage (60/50 Hertz AC or DC) Voltage	Lamp Number ②	Catalog Number
	Momentary	120	6PSB	**E30DA**	24	24PSB	**E30DX3**
					120	120PSB	**E30DF**

Single Button Operator with Release Bar and Indicating Light

Shown with Button and Lens

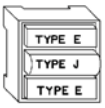
Single Button Operator with (OFF) Release Bar and Indicating Light—Includes OFF Bar/Button (Order Other Button and Lens Separately)

Button and Lens Types Required ①	Operation (Bottom Button)	Type of Light Element: Transformer (60/50 Hertz AC) Voltage	Lamp Number ③	Catalog Number	Full Voltage (60/50 Hertz AC or DC) Voltage	Lamp Number ②	Catalog Number
	Maintained	120	6PSB	**E30DG**	24	24PSB	**E30DX13**
					120	120PSB	**E30DM**

Two Button Operator with Indicating Light

Shown with Button and Lens

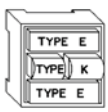
Two Button Operator with Indicating Light/without Buttons or Lens (Order Buttons and Lens Separately)

Button and Lens Types Required ④	Button Operation	Type of Light Element: Transformer (60/50 Hertz AC) Voltage	Lamp Number ②	Catalog Number	Full Voltage (60/50 Hertz AC or DC) Voltage	Lamp Number ②	Catalog Number
	Momentary	120	6PSB	**E30EA**	24	24PSB	**E30EX3**
					120	120PSB	**E30EF**
	Momentary with interlock	120	6PSB	**E30EG**	24	24PSB	**E30EX13**
					120	120PSB	**E30EM**

Two Button Operator with Dual Indicating Lights

Shown with Button and Lens

Two Button Operator with Dual Indicating Lights/without Buttons and Lens

Button and Lens Types Required ①	Button Operation	Type of Light Element: Transformer (60/50 Hertz AC) Voltage	Lamp Number ②	Catalog Number	Full Voltage (60/50 Hertz AC or DC) Voltage	Lamp Number ②	Catalog Number
	Momentary	120	6PSB	**E30JA**	24	24PSB	**E30JX3**
					120	120PSB	**E30JF**

Notes

① Order from tables on **Pages V7-T1-179** to **V7-T1-183**.

② Light units will also accept LED lamps. For LED part numbers, see table on **Page V7-T1-189**.

③ Operators are supplied as standard with red extended release bar(s) marked "OFF" as shown in sketch. For other colors or markings, contact your nearest Eaton Distributor or call our Customer Service Center 1-800-356-1243. For replacement of standard red release bar, order **E30KR101**.

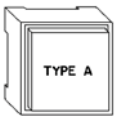
④ Order from tables on **Pages V7-T1-181** and **V7-T1-182**.

Operator Components

Operating Buttons Only

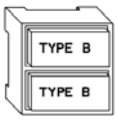
Type A Extended Button

Type A Buttons with Standard Markings ①

Button Application	Color	Marking	Extended Button Catalog Number	Short Button Catalog Number	Color	Marking	Extended Button Catalog Number	Short Button Catalog Number
	Black	Blank	**E30KA100**	**E30KA150**	Green	START	**E30KA330**	**E30KA380**
		START	—	**E30KA180**	Yellow	Blank	**E30KA400**	**E30KA450**
	Red	Blank	**E30KA200**	**E30KA250**	White	Blank	**E30KA500**	**E30KA550**
		EMERG. STOP	**E30KA204**	—	Gray	Blank	**E30KA600**	**E30KA650**
		OFF	**E30KA218**	**E30KA268**	Brown	Blank	**E30KA700**	**E30KA750**
		STOP	**E30KA231**	**E30KA281**	Orange	Blank	**E30KA800**	**E30KA950**
	Green	Blank	**E30KA300**	**E30KA350**	Blue	Blank	**E30KA900**	**E30KA950**

Type B Extended Button

Type B Buttons with Standard Markings ②

Button Application	Color	Marking	Extended Button Catalog Number	Short Button Catalog Number	Color	Marking	Extended Button Catalog Number	Short Button Catalog Number
	Black	Blank	**E30KB100**	**E30KB150**	Black	REVERSE	**E30KB125**	**E30KB175**
		AUTO	**E30KB101**	**E30KB151**		RUN	**E30KB126**	**E30KB176**
		CLOSE	**E30KB102**	**E30KB152**		SLOW	**E30KB128**	**E30KB178**
		DOWN	**E30KB103**	**E30KB153**		START	**E30KB130**	**E30KB180**
		FAST	**E30KB105**	**E30KB155**		TEST	**E30KB132**	**E30KB182**
		FORWARD	**E30KB107**	**E30KB157**		UP	**E30KB134**	**E30KB184**
		HIGH	**E30KB109**	**E30KB159**	Red	Blank	**E30KB200**	**E30KB250**
		IN	**E30KB110**	**E30KB160**		EMERG. STOP	**E30KB204**	—
		INCH	**E30KB111**	**E30KB161**		OFF	**E30KB218**	**E30KB268**
		JOG	**E30KB112**	**E30KB162**		STOP	**E30KB231**	**E30KB281**
		JOG FOR.	**E30KB113**	**E30KB163**	Green	Blank	**E30KB300**	**E30KB350**
		JOG REV.	**E30KB114**	**E30KB164**		START	**E30KB330**	**E30KB380**
		LOW	**E30KB115**	**E30KB165**	Yellow	Blank	**E30KB400**	**E30KB450**
		LOWER	**E30KB116**	**E30KB166**	White	Blank	**E30KB500**	**E30KB550**
		MAN	**E30KB117**	**E30KB167**		AUTO	**E30KB501**	—
		ON	**E30KB119**	**E30KB169**		HAND	**E30KB508**	—
		OPEN	**E30KB120**	**E30KB170**	Gray	Blank	**E30KB600**	**E30KB650**
		OUT	**E30KB121**	**E30KB171**	Brown	Blank	**E30KB700**	**E30KB750**
		RAISE	**E30KB122**	**E30KB172**	Orange	Blank	**E30KB800**	**E30KB850**
		RESET	**E30KB124**	**E30KB174**	Blue	Blank	**E30KB900**	**E30KB950**

Notes

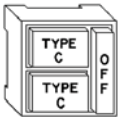
① Use with operator E30AA, legend characters 3/16 in (4.8 mm) high.

② Use with operators E30AB thru AE, AL and DA thru DF, legend characters 3/16 in (4.8 mm) high.

1

Type C Extended Button

Type C Buttons with Standard Markings ①

Button Application	Color	Marking	Extended Button Catalog Number	Short Button Catalog Number
	Black	Blank	**E30KC100**	**E30KC150**
		AUTO	**E30KC101**	**E30KC151**
		CLOSE	**E30KC102**	**E30KC152**
		DOWN	**E30KC103**	**E30KC153**
		FAST	**E30KC105**	**E30KC155**
		FORWARD	**E30KC107**	**E30KC157**
		HAND	**E30KC108**	**E30KC158**
		HIGH	**E30KC109**	**E30KC159**
		IN	**E30KC110**	**E30KC160**
		INCH	**E30KC111**	**E30KC161**
		JOG	**E30KC112**	**E30KC162**
		JOG FOR.	**E30KC113**	**E30KC163**
		JOG REV.	**E30KC114**	**E30KC164**
		LOW	**E30KC115**	**E30KC165**
		LOWER	**E30KC116**	**E30KC166**
		MAN	**E30KC117**	**E30KC167**
		ON	**E30KC119**	**E30KC169**
		OPEN	**E30KC120**	**E30KC170**
		OUT	**E30KC121**	**E30KC171**
		RAISE	**E30KC122**	**E30KC172**
	Black	RESET	**E30KC124**	**E30KC174**
		REVERSE	**E30KC125**	**E30KC175**
		RUN	**E30KC126**	**E30KC176**
		SLOW	**E30KC128**	**E30KC178**
		START	**E30KC130**	**E30KC180**
		TEST	**E30KC132**	**E30KC182**
		UP	**E30KC134**	**E30KC184**
	Red	Blank	**E30KC200**	**E30KC250**
		OFF	**E30KC218**	—
		STOP	**E30KC231**	**E30KC281**
	Green	Blank	**E30KC300**	**E30KC350**
		START	**E30KC330**	**E30KC380**
	Yellow	Blank	**E30KC400**	**E30KC450**
	White	Blank	**E30KC500**	**E30KC550**
	Gray	Blank	**E30KC600**	**E30KC650**
	Brown	Blank	**E30KC700**	**E30KC750**
	Orange	Blank	**E30KC800**	**E30KC850**
	Blue	Blank	**E30KC900**	**E30KC950**

Note

① Use with operators E30AF thru AK, AL thru AM and DG thru DM, legend characters 1/8 in (3.2 mm) high.

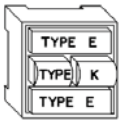
Operating Buttons and Lens Only

Standard Color Buttons and Lens Marking ①

Black lettering on — White, Amber, Yellow and Clear.
White lettering on — Green, Red, Blue, Brown, Black, Orange and Gray.

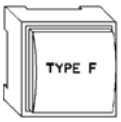
Type E Button

Type E Buttons with Standard Markings ②

Button Application	Color	Marking	Extended Button Catalog Number	Color	Marking	Extended Button Catalog Number
	Black	Blank	**E30KE100**	Black	RESET	**E30KE124**
		CLOSE	**E30KE102**		REVERSE	**E30KE125**
		DOWN	**E30KE103**		RUN	**E30KE126**
		FAST	**E30KE105**		SLOW	**E30KE128**
		FORWARD	**E30KE107**		START	**E30KE130**
		HIGH	**E30KE109**		TEST	**E30KE132**
		IN	**E30KE110**		UP	**E30KE134**
		INCH	**E30KE111**	Red	Blank	**E30KE200**
		JOG	**E30KE112**		OFF	**E30KE218**
		JOG FOR.	**E30KE113**		STOP	**E30KE231**
		JOG REV.	**E30KE114**	Green	Blank	**E30KE300**
		LOW	**E30KE115**		START	**E30KE330**
		LOWER	**E30KE116**	Yellow	Blank	**E30KE400**
		ON	**E30KE119**	White	Blank	**E30KE500**
		OPEN	**E30KE120**	Gray	Blank	**E30KE600**
		OUT	**E30KE121**	Brown	Blank	**E30KE700**
		PHASE	**E30KE122**	Orange	Blank	**E30KE800**
				Blue	Blank	**E30KE900**

Type F Lens

Type F Lenses with Standard Markings ③

Button Application	Color	Marking	Catalog Number	Color	Marking	Catalog Number
	Red	Blank	**E30KF10**	Green	OFF	**E30KF22**
		MOTOR RUN	**E30KF11**	Amber	Blank	**E30KF30**
		ON	**E30KF12**	Blue	Blank	**E30KF40**
		POWER ON	**E30KF13**	Clear	Blank	**E30KF50**
	Green	Blank	**E30KF20**	White	Blank	**E30KF60**
		MOTOR STOP	**E30KF21**			
		MOTOR RUN	**E30KF23**			

Notes

① For lenses with special markings or with standard markings but in a different color, refer to instructions on **Pages V7-T1-186** to **V7-T1-188**.
② Use with operators E30EA thru EM, FA thru FM and JA thru JM, legend characters 1/8 in (3.2 mm) high.
③ Use with operators E30BA thru BY, legend characters 3/16 in (4.8 mm) high.

1

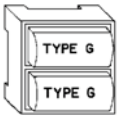
Operating Lens Only

Standard Color Buttons and Lens Marking ①

Black lettering on — White, Amber, Yellow and Clear.
White lettering on — Green, Red, Blue, Brown, Black, Orange and Gray.

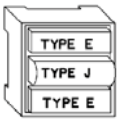
Type G Lens

Type G Lenses with Standard Markings ②

Lens Application	Color	Marking	Catalog Number	Color	Marking	Catalog Number
	Red	Blank	**E30KG10**	Green	OFF	**E30KG22**
		MOTOR RUN	**E30KG11**		READY	**E30KG23**
		ON	**E30KG12**	Amber	Blank	**E30KG30**
		POWER ON	**E30KG13**	Blue	Blank	**E30KG40**
	Green	Blank	**E30KG20**	Clear	Blank	**E30KG50**
		MOTOR RUN	**E30KG24**	White	Blank	**E30KG60**
		MOTOR STOP	**E30KG21**			

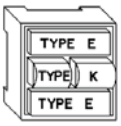
Type J Lens

Type J Lenses with Standard Markings ③

Lens Application	Color	Marking	Catalog Number	Color	Marking	Catalog Number
	Red	Blank	**E30KJ10**	Green	OFF	**E30KJ22**
		MOTOR RUN	**E30KJ11**		ON	**E30KJ24**
		ON	**E30KJ12**	Amber	Blank	**E30KJ30**
		POWER ON	**E30KJ13**	Blue	Blank	**E30KJ40**
		MOTOR STOP	**E30KJ14**	Clear	Blank	**E30KJ50**
	Green	Blank	**E30KJ20**	White	Blank	**E30KJ60**
		MOTOR STOP	**E30KJ21**			
		MOTOR RUN	**E30KJ23**			

Type K Lenses

Type K Lenses with Standard Markings (Sold in Pairs Only) ④

Lens Application	Color		Marking		Catalog Number
	Left Hand Lens	Right Hand Lens	Left Hand Lens	Right Hand Lens	
	Red	Red	ON	ON	**E30KK12**
		Green	ON	OFF	**E30KK13**
	Green		OFF	OFF	**E30KK22**
		Red	OFF	ON	**E30KK23**

Notes

① For lenses with special markings or with standard markings but in a different color, refer to instructions on **Pages V7-T1-186** to **V7-T1-188**.
② Use with operators E30CA thru CM and DA thru DM, legend characters 3/16 in (4.8 mm) high except MOTOR RUN, POWER ON and MOTOR STOP are 1/8 in (3.2 mm) high.
③ Use with operators E30EA thru EM, FA thru FM and GA thru GM, legend characters 1/8 in (3.2 mm) high.
④ Use with operators E30JA thru JW, legend characters 1/8 in (3.2 mm) high

Type K Lenses

Type K Lenses—Blank (Sold in Pairs Only)

Color			Color		
Left Hand Lens	**Right Hand Lens**	**Catalog Number**	**Left Hand Lens**	**Right Hand Lens**	**Catalog Number**
Red	Red	**E30KK10**	Blue	Red	**E30KK41**
	Green	**E30KK11**		Green	**E30KK42**
	Amber	**E30KK17**		Amber	**E30KK43**
	Blue	**E30KK14**		Blue	**E30KK40**
	Clear	**E30KK15**		Clear	**E30KK45**
	White	**E30KK16**		White	**E30KK46**
Green	Red	**E30KK21**	Clear	Red	**E30KK51**
	Green	**E30KK20**		Green	**E30KK52**
	Amber	**E30KK27**		Amber	**E30KK53**
	Blue	**E30KK24**		Blue	**E30KK54**
	Clear	**E30KK25**		Clear	**E30KK50**
	White	**E30KK26**		White	**E30KK56**
Amber	Red	**E30KK31**	White	Red	**E30KK61**
	Green	**E30KK32**		Green	**E30KK62**
	Amber	**E30KK30**		Amber	**E30KK63**
	Blue	**E30KK34**		Blue	**E30KK64**
	Clear	**E30KK35**		Clear	**E30KK65**
	White	**E30KK36**		White	**E30KK60**

1

Contact Blocks

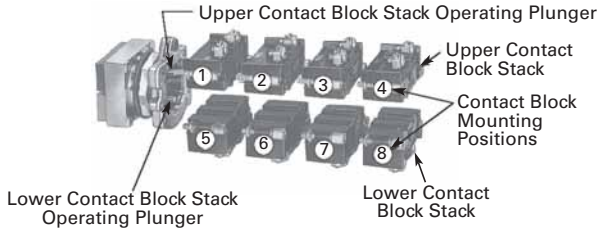
Standard Contact Blocks—Molded, phenolic construction. Enclosed silver contacts with reliability "nibs" that improve the reliability of switching performance under dry circuit, corrosive atmosphere and fine dust conditions. For more extreme conditions, the logic level contact blocks described below are recommended.

Logic Level Contact Blocks—Feature palladium contacts. Palladium, which is more inert than gold, is well suited for voltages and currents approaching zero. When mounted in an enclosure rated for highly corrosive environments, logic level contact blocks can be used where exposure to chemicals may cause failure to other types of materials.

Mounting Limitations

See the contact block mounting limitations for Type E30 pushbutton and combination pushbutton and light operators on this page. Mounting positions 1 thru 8 indicate single depth contact blocks. Each of these positions can represent either a single circuit 600 volt block or a two-circuit 120 volt block. The two-circuit 600 volt block requires two of the numbered positions shown.

Mounting Positions



Catalog Number of Operator	Contact Blocks Can Be Mounted in Positions Listed Below	
	Upper Stack	Lower Stack
E30AA thru **E30AM** ①	1-2-3-4	5-6-7-8
E30BA thru **E30CM**	None	None
E30DA thru **E30DM**	None	5-6-7-8
E30EA thru **E30GM**	2-3-4	6-7-8
E30JA thru **E30JM**	3-4	7-8

Contact Block Selection

Contact Block Type ②

Single Circuit, Screw Terminals

Two Circuit, Screw Terminals

Two Circuit, Quick Connect Terminals

120 Vac Only—Two Circuit

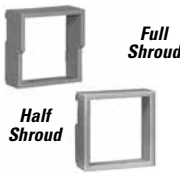
Circuit		Pressure Terminals Standard Catalog Number	Pressure Terminals Logic Level Catalog Number	Quick Connect Terminals ③ Standard Catalog Number
	1NO	**600 Vac, 250 Vdc—Single Circuit**		
		E30KLA1	**E30KLAE1**	**E30KLB1**
	1NC	**E30KLA2**	**E30KLAE2**	**E30KLB2**
	1NO-1NC	**600 Vac, 250 Vdc—Two Circuit**		
		E30KLA3	**E30KLAE3**	**E30KLB3**
	2NO	**E30KLA4**	**E30KLAE4**	**E30KLB4**
	2NC	**E30KLA5**	**E30KLAE5**	**E30KLB5**
Special Contact Operation				
	1NO-1NC Overlapping	**E30KLA6** ④	—	**E30KLB6** ④
	2NO (One early closing)	**E30KLA7** ④	—	**E30KLB7** ④
	2NC (One late opening)	**E30KLA8**	—	**E30KLB8**
	1NO-1NC	**120 Vac Only—Two Circuit**		
		E30KLA9 ⑤	—	**E30KLB9** ⑤

Notes

① Except operator E30AD, AJ or AK which will accommodate contact blocks 1, 2, 5 and 6 only. (See Mounting Positions above.)
② Individually boxed contact blocks master packed 10 per carton.
③ Supplied with non-stacking screws. Limited to 2 contact blocks mounted in positions 1 and 5.
④ Do not use with maintained operators.
⑤ Contacts must be same polarity.

Accessories

Accessories

	Description	Color/Type	Catalog Number
E30KR_	**Collar**—Snap on mounting for assembly in the field. Permits color coding of operator heads. Size: 1-19/32 x 1-19/32 x 9/16 in.	Black	**E30KR1**
		Red	**E30KR2**
		Green	**E30KR3**
		Yellow	**E30KR4**
		White	**E30KR5**
		Gray	**E30KR6**
		Orange	**E30KR8**
		Blue	**E30KR9**
		Brown	**E30KR10**
E30KT_ 	**Shroud**—Similar to collar above except for extension above the face of button to prevent accidental actuation of button. Half shroud with an extension on only half the collar may be positioned to protect top or bottom button.	Full shroud (gray)	**E30KT6**
		Half shroud (gray)	**E30KT7**
E30KR3_	**Guard**—Two collars deep, removable slide prevents accidental operation. White slide can be marked with grease pencil.	Red with white slide	**E30KR31**
		Red with clear slide	**E30KR32**
E30KR30	**Terminal Block**—2 terminals, each will accommodate 2-wire terminations.		**E30KR30**
E30KT_	**Padlock Attachment** for locking single button and bottom button of multi-function operators in the depressed position. Locks NC contacts open or early closing NO contacts closed. Cannot be used in conjunction with collar, shroud or boot.	Short button	**E30KT1**
		Extended button	**E30KT2**
E30KT3	**Transparent Boot**—Guards against ingress of foreign material and freezing rain. **Note:** If this boot is used in conjunction with operator types AD or AE, an extended type button must be used in the top position and a short button in the lower position.		**E30KT3** ①
E30KT_	**Square Hole Plug**—		
	Gray enameled		**E30KT4**
	Stainless steel		**E30KT5**
E30KV1	**Lamp and Lens Removal Tool**—Will not fit Cat. No. E30B light units listed on **Page V7-T1-177**.		**E30KV1**
E22CW	**Octagonal Wrench** for mounting operators to panel.		**E22CW**
E30KV2	**Button and Lens Removal Tool**		**E30KV2**

Note

① Color coordinating collars, padlock attachments or legend plates cannot be used with operators equipped with a transparent boot.

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Options

Markings and Legend Plates

Buttons or Lenses with Non-Standard Horizontal Markings

Markings not listed as Standard Markings below are considered non-standard. If more than one marking is required on a button or lens, order non-standard markings.

Ordering Instructions

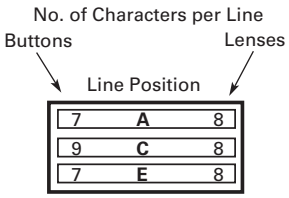
- Specify catalog number of blank button or lens of desired color, plus suffix "STAMP" for non-standard or "STD" for standard markings in order notes. See **Pages V7-T1-179** to **V7-T1-183**.
- Specify size, legend desired and location in order notes by alphas as shown in example.
- Do not exceed maximum number of legend characters per line.

Ordering Example

Green Type B button to be marked with non-standard legend "ALL ELEVATORS DOWN."

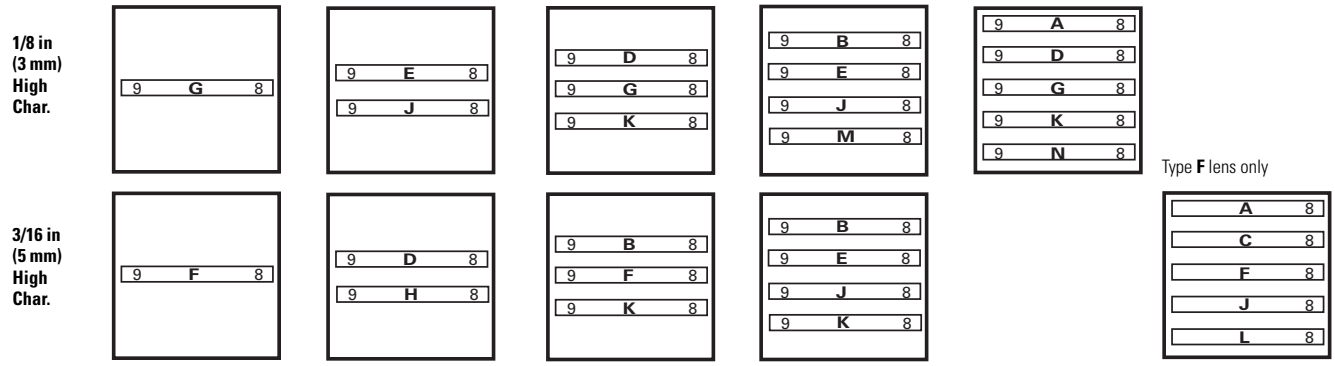
Catalog No.: **E30KB300STAMP**
Letter Size: 1/8 in
Pos. A—ALL
Pos. C—ELEVATORS
Pos. F—DOWN

How to Use the Legend Location Figure

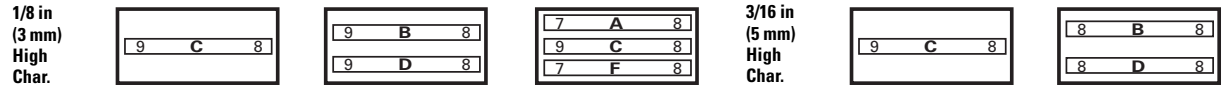


Legend Locations

Type **A** buttons and Type **F** lenses

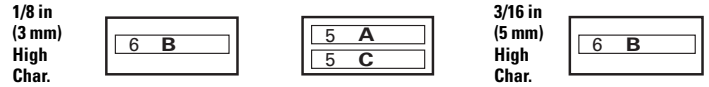


Type **B** buttons and Type **G** lenses

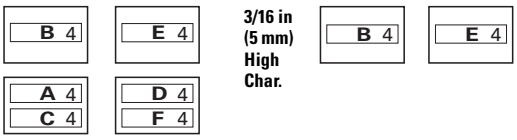


Type **C** buttons

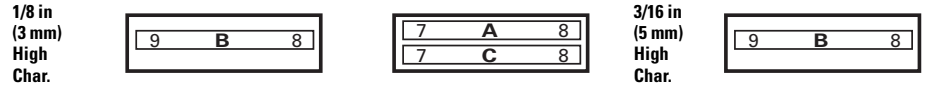
Type **D** buttons



Type **K** buttons



Type **E** buttons and Type **J** lenses

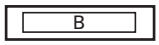


Standard Markings

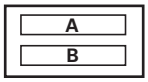
AUTO	EMERG. STOP	HAND	INCH	JOG REV.	MAN.	OPEN	RESET	SLOW	TEST	MOTOR STOP
CLOSE	FAST	HIGH	JOG	LOW	OFF	OUT	REVERSE	START	UP	POWER ON
DOWN	FORWARD	IN	JOG FOR.	LOWER	ON	RAISE	RUN	STOP	MOTOR RUN	READY

Legend Arrangements and Legend Locations

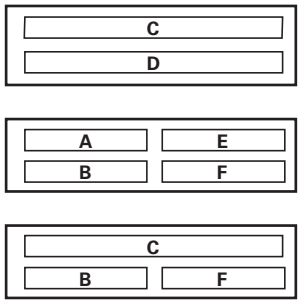
Legend plates
E30KM1 or KM11



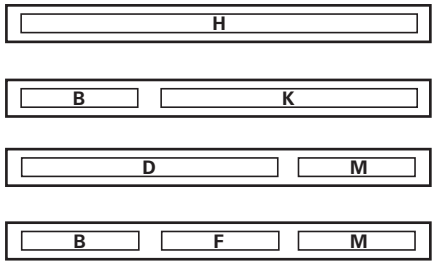
Legend plates
E30KM4 or KM14



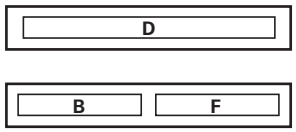
Legend plates
E30KM3 or KM13



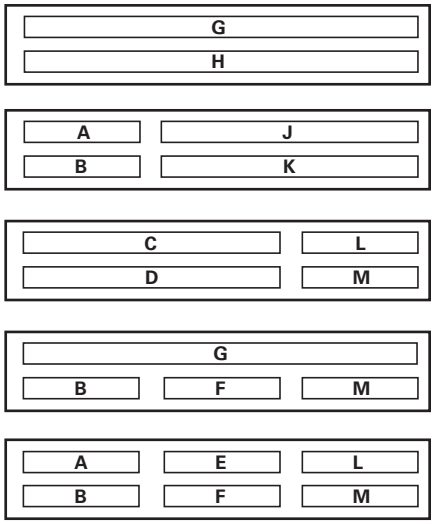
Legend plates
E30KM5 or KM15



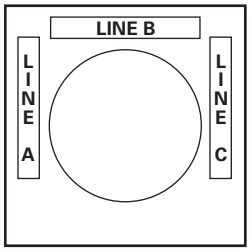
Legend plates
E30KM2 or KM12



Legend plates
E30KM6 or KM16



Legend Plates E30KN76 or KN76B



Legend plates
E30KN76 or KN76B
1/8 in character
size only with a maximum
of six characters.

Maximum Number and Size of Permissible Legend Characters of Custom Stamped Legend Plates

		Size and Maximum Number of Characters Per Line								
		One Span			Two Span			Three Span		
Type	No.of Lines	3/32 in (2.5 mm)	1/8 in (3 mm)	3/16 in (5 mm)	3/32 in (2.5 mm)	1/8 in (3 mm)	3/16 in (5 mm)	3/32 in (2.5 mm)	1/8 in (3 mm)	3/16 in (5 mm)
Standard	1	13	10	10	30	22	22	47	34	34
Large	1	13	10	10	30	23	23	47	36	36
	2	13	10	10	30	23	23	47	36	36

Characters available for non-standard markings
3/32 in (2.5 mm)—1/8 in (3 mm)—3/16 in (5 mm)

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**

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Buttons or Lenses with Non-Standard Vertical Markings

Ordering Instructions

- Specify catalog number of blank button or lens of desired color, selected from listings on **Pages V7-T1-179** to **V7-T1-183**.
- Specify size, legend desired, location and state "vertically marked" in order notes.

Note: Specify either 1/8 or 3/16 in (3.2 or 4.8 mm) character height. Do not exceed maximum number of characters as outlined in table below.

Ordering Example:

Green Type K button to be marked with "RUN" "ON."

Catalog No.: **E30KK20STAMP**
Letter Size: 3/16 in (4.8 mm)
Vertically Marked
Pos. B—RUN
Pos. E—ON

Legend Plates

Legend plates for Type E30 compact pushbutton and indicating light operators hook directly onto the operator and are clamped in place when the operator locking nut behind the panel is secured.

Two and three span plates are designed for use where two or more operators are mounted adjacent to each other **on minimum horizontal mounting centers.** These legend plates mount in the same manner as single span units.

Maximum Number of Characters

Description	Type	Maximum Number of Characters 1/8 in (3.2 mm)	3/16 in (4.8 mm)
Buttons	A	7	5
	B	7	5
	C	4	3
	D	5	3
	E	7	5
Lenses	F	7	5
	G	7	5
	J	7	5
	K	3	2

When Ordering Legend Plates with Markings

- Catalog number of blank legend plate
- Insert the following in order notes:
  - Legends required
  - Size of characters—3/32, 1/8, 3/16 in (2.4, 3.2, 4.8 mm)
  - Positions of legends on one line standard and two line large legend plates by alphas as shown in sketches on following page.

Ordering Example:

Three span legend plate to be marked "MASTER CONTROL", "STATION A" and "STATION B."

Catalog No.: **E30KM3STAMP**
Letter Size: 1/8 in (3.2 mm)
Pos. C—MASTER CONTROL
Pos. B—STATION A
Pos. F—STATION B

Blank Legend Plates and Legend Plates with Markings

Type	One Span Catalog Number
Black	
Standard— One Span Standard	**E30KM1**
Large—One Span Large	**E30KM4**

Replacement Parts

Replacement Light Units for E30 Components

	Part Numbers—Receptacles without Lamps				
Voltage AC and DC	**Single Indicating Light**	**Dual Indicating Light**	**Single Light Single Pushbutton**	**Single Light Dual Pushbutton**	**Dual Light Dual Pushbutton**
Full Voltage Type					
6V	**57-2579-3A**	**57-2568A**	**57-2568A**	**57-2579-3A**	**57-2567**
12V	**57-2579-3A**	**57-2568A**	**57-2568A**	**57-2579-3A**	**57-2567**
18/24V	**57-2579-3A**	**57-2568A**	**57-2568A**	**57-2579-3A**	**57-2567**
28V	**57-2579-3A**	**57-2568A**	**57-2568A**	**57-2579-3A**	**57-2567**
32V	**57-2579-3A**	**57-2568-2A**	**57-2568-2A**	—	**57-2567**
48V	**57-2579-3A**	**57-2568A**	**57-2568A**	**57-2579-3A**	**57-2567**
120V	**57-2579-3A**	**57-2568A**	**57-2568A**	**57-2579-3A**	**57-2567**
Transformer Type					
120V	**42-2672A**	**42-2663A**	**42-2663A**	**42-2671A**	**42-2664A**
208V	**42-2672-2A**	**42-2663-2A**	**42-2663-2A**	**42-2671-2A**	**42-2664-2A**
240V	**42-2672-3A**	**42-2663-3A**	**42-2663-3A**	**42-2671-3A**	**42-2664-3A**
380V	**42-2672-4A**	**42-2663-4A**	**42-2663-4A**	**42-2671-4A**	**42-2664-4A**
480V	**42-2672-5A**	**42-2663-5A**	**42-2663-5A**	**42-2671-5A**	**42-2664-5A**
600V	**42-2672-6A**	**42-2663-6A**	**42-2663-6A**	**42-2671-6A**	**42-2664-6A**
Description and Part Numbers—Related Parts					
Inner lens	**28-1008**	**28-1010**	**28-1010**	**28-1010**	**28-1010**
Retaining nut	**15-1885**	**15-1885**	**15-1885**	**15-1885**	**15-1885**
Gasket	**16-2092**	**16-2092**	**16-2092**	**16-2092**	**16-2092**
Locking ring	**52-1116**	**52-1116**	**52-1116**	**52-1116**	**52-1116**

Replacement Lamps for E30 Illuminated Operators

Mfg. Lamp Type	Voltage	Base Style	Application	Part Number
6PSB	6V	T2 slide	E30 transformer and full voltage	**28-1022**
12PSB	12V	T2 slide	E30 full voltage	**28-1025**
24PSB	24V	T2 slide	E30 full voltage	**28-1026**
28PSB	28V	T2 slide	E30 full voltage	**28-1027**
48PSB	48V	T2 slide	E30 full voltage	**28-1028**
60PSB	60V	T2 slide	E30 full voltage	**28-1598**
120PSB	120V	T2 slide	E30 full voltage	**28-1029**
#259	6.3V	T3-1/4 wedge	E30 single transformer	**28-949**

Replacement Lamps—Incandescent and LED

	Incandescent Lamps			LED Lamps Eaton's Part Number			
Lamp Voltage	**Manufacturer's Part Number**	**Base Style**	**Eaton's Part Number**	**Red**	**Green**	**Yellow**	**Blue** ①
6	6PSB	T2 slide	**28-1022**	**35-1523**	**35-1523-2**	**35-1523-3**	**35-1523-17**
12	12PSB	T2 slide	**28-1025**	**35-1523-11**	**35-1523-12**	**35-1523-13**	**35-1523-18**
24	24PSB	T2 slide	**28-1026**	**35-1523-4**	**35-1523-5**	**35-1523-6**	**35-1523-19**
28	28PSB	T2 slide	**28-1027**	**35-1523-4**	**35-1523-5**	**35-1523-6**	**35-1523-19**
48	48PSB	T2 slide	**28-1028**	**35-1523-14**	**35-1523-15**	**35-1523-16**	**35-1523-20**
120	120PSB	T2 slide	**28-1029**	**35-1523-7**	**35-1523-8**	**35-1523-9**	**35-1523-21**

Note

① E30 blue LED bulbs may not provide sufficient intensity for some applications.

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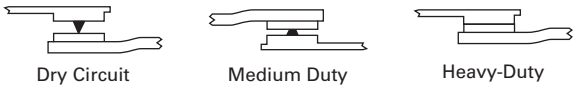
Technical Data and Specifications

Operator Specifications

Description	Specification
Climate Conditions	
Operating	–20° to 150°F (–29° to 65°C)
Terminals	
Light units	Terminals are saddle clamp type for 2 stranded or solid wires up to 12 AWG (4.0 mm^2) Torque—7 lb-in (0.8 Nm)
Contact block	Terminals are saddle clamp type for 2 stranded or solid wires up to 12 AWG (4.0 mm^2) Torque—7 lb-in (0.8 Nm)
Materials	
Operator	Zinc base die casting with a copper-nickel-chrome plated finish Withstands the 200 hr. salt spray test in accordance with MIL Spec. QQ-M-151A and NEMA 4X testing.
Internal parts	Including shafts, washers and springs, are made of stainless steel
Buttons and lenses	Colorfast, wear resistant, molded acetal resin
Contact blocks	Made of molded, heat resistant, mineral filled phenolic Contact block plungers are molded of nylon filled phenolic Contacts are silver
Reliability nibs	These nibs combine a scrubbing action with high pressure density when the contacts are closed They push through particles and films found on contact surfaces in industrial environments Reliability nibs self-adjust to the application—dry circuit, normal or heavy-duty

Reliability Nibs



Electrical Ratings

Contact Blocks

Meet or Exceed NEMA Contact Rating Designation A600 and P300

	Vac A600				Vdc P300		
Description	**120V**	**240V**	**480V**	**600V**	**24/28V**	**125V**	**250V**
Make and emergency interrupting capacity (Amps)	60	30	15	12	5.73	1.1	0.55
Normal load break (Amps)	6	3	1.5	1.2	5.73	1.1	0.55
Continuous current (Amps)	10	10	10	10	5	5	5

- UL A600/P300 nominal connect 10A
- 1NO, 1NC, 2NO, 2NC, 1NO-1NC, early make, late break and overlapping configurations
- Mechanical positive drive operation on NC contacts
- Palladium alloy contact for logic level or highly corrosive environments

Maximum Ratings for Logic Level and Hostile Atmosphere Application

Description	Specification
Maximum amperes	0.5A ①
Maximum volts	120 Vac/Vdc

Light Unit

Description	Specification
Bulbs—Average Life	
Transformer type	20,000 hrs.
Resistor/direct voltage type	2,500 hrs. min. at rated voltage
LED	60,000 to 100,000 hrs.

Note

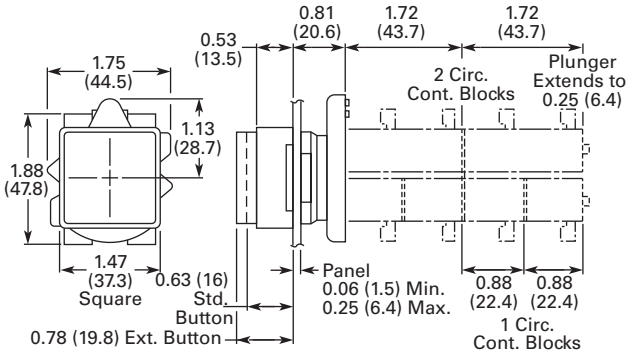
① Logic level contact blocks are UL A600/P500 rated per table above.

1

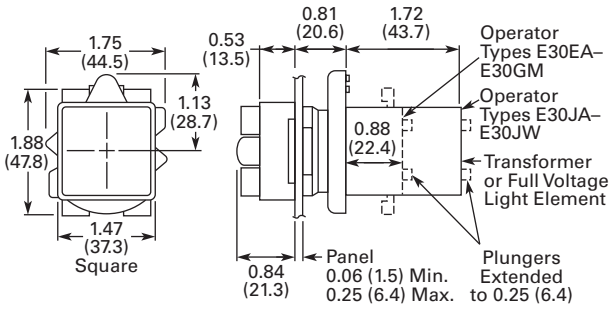
Dimensions

Approximate Dimensions in Inches (mm)

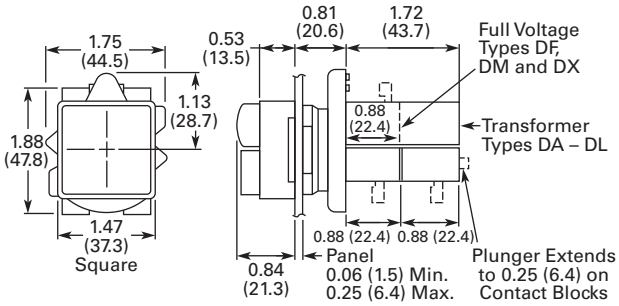
Pushbutton Operators



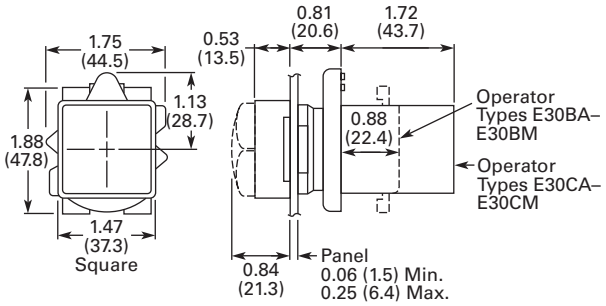
Combination Pushbutton and Indicating Light Operators



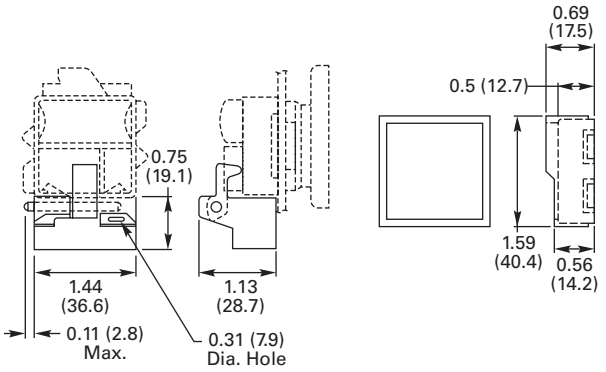
Combination Pushbutton and Indicating Light Operators



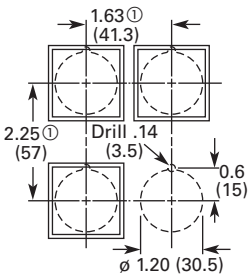
Indicating Light Operators



Padlocking Attachment and Half Shroud E30KT7



Drilling Dimensions—Minimum Spacing ①②

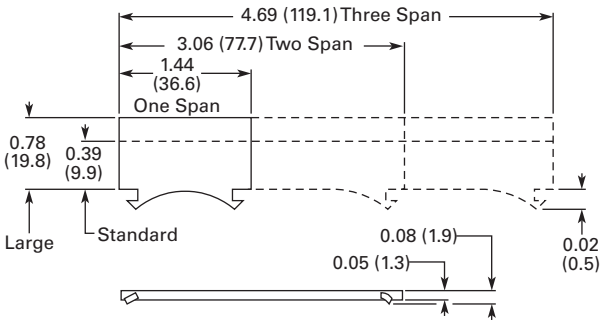


Notes

① Dimensions shown allow adequate space for the addition of one or two high legend plates and color coordinating collars.

② Locating nib hole or notch is 0.136 in (3.5 mm) drill. Alternate to drilling mounting holes use Greenlee Tool Co. punch (No. 730-S) to punch the hole and (No. 730-K) to punch the notch.

Legend Plates



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Drawings Online

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-T1-264** to **V7-T1-298**.

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

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—

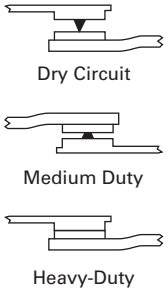
- Standard indicating lights
  - UL (NEMA) Type 1, 2, 3, 3R, 3S, 4, 4X, 12, 13
  - IEC IP65
- Most other operators
  - UL (NEMA) Type 1, 2, 3, 3R, 4, 4X, 12, 13
  - IEC IP65

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



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.

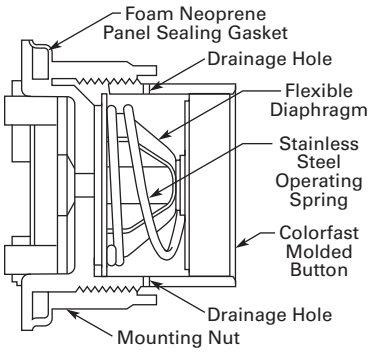
Grounding Nibs

Diaphragm Seal with Drainage Holes

Liquid Drainage

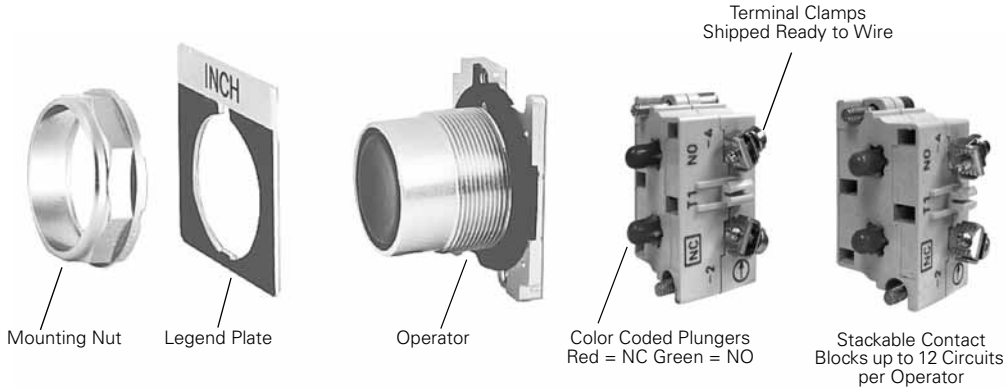
Eaton's pushbutton operators offer front of panel drainage via holes in the operator bushing. Hidden from view by the mounting nut, these holes prevent buildup of liquid inside the operator, which can prevent operation in freezing environments. The holes also provide a route for escaping liquid in high 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

10250T 10 1 – 1 ①

Operator
10 = Flush
11 = Extended
12 = 40 mm mushroom
17 = 65 mm mushroom
50 = 1/2 shroud vertical mount
51 = 1/2 shroud horizontal mount

Button Color	
1 = Black	**5** = Gray
2 = Red	**6** = White
3 = Green	**8** = Blue
4 = Yellow	**9** = Orange

Circuit
Blank = Operator only
1 = 1NO-1NC
2 = 2NO
3 = 2NC
51 = 1NC
53 = 1NO

Illuminated and Non-Illuminated Push-Pulls

10250T 5 63 C47 ___ – 1 ①

Operator
5 = Two-position maintained
4 = Three-position mom push-mom pull
9 = Three-position mt push-mom pull
10 = Three-position mom push-mom pull

Incandescent Light Unit	LED Light Unit
Blank = Non-illuminated	**Blank** = Non-illuminated
89 = 24V/XFR	**89L** = 24V/XFR
63 = 120V/XFR	**63L** = 120V/XFR
64 = 208V/XFR	**64L** = 208V/XFR
65 = 240V/XFR	**65L** = 240V/XFR
82 = 277V/XFR	**82L** = 277V/XFR
66 = 380V/XFR	**66L** = 380V/XFR
67 = 480V/XFR	**67L** = 480V/XFR
68 = 600V/XFR	**68L** = 600V/XFR
69 = 6V/FV	**97L** = Full voltage
70 = 12V/FV	
79 = 24V/FV	
83 = 32V/FV	
80 = 120V/RES	
81 = 240V/RES	

LED Voltage
Blank = Non-illuminated
Blank = Incandescent
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

Circuit
Blank = Operator only
1 = 1NO-1NC
2 = 2NO
3 = 2NC
51 = 1NC
53 = 1NO

Non-Illuminated	Illuminated		
Button	Incandescent	LED	Lens Type
B60 = Black 40 mm	**C47** =	**RD** =	Red 40 mm
B62 = Red 40 mm	**C53** =	**ED** =	Red 40 mm—"E" STOP
B63 = Red 40 mm—"E" STOP	**C48** =	**GD** =	Green 40 mm
B61 = Green 40 mm	**C49** =	**LD** =	Blue 40 mm
B64 = Blue 40 mm	**C50** =	**AD** =	Amber 40 mm
J60 = Black 65 mm	**C51** =	**WD** =	White 40 mm
J62 = Red 65 mm	**C52** =	**—** =	Clear 40 mm
J63 = Red 65 mm—"E" STOP	**C57** =	**RS** =	Red side light
J61 = Green 65 mm	**C63** =	**ES** =	Red side light—"E" STOP
J64 = Yellow 65 mm	**C58** =	**GS** =	Green side light
	C59 =	**LS** =	Blue side light
	C64 =	**AS** =	Amber side light
	C60 =	**YS** =	Yellow side light
	C61 =	**WS** =	White side light
	C62 =	**—** =	Clear side light
	C65 =	**RH** =	Red heavy-duty
	C66 =	**GH** =	Green heavy-duty
	C67 =	**AH** =	Amber heavy-duty

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

10250T 416 C21 ___ – 1 ①

Incandescent Light Unit	LED Light Unit
416 = 24V/XFR	**397L** = Full voltage
411 = 120V/XFR	**416L** = 24V/XFR
412 = 240V/XFR	**411L** = 120V/XFR
419 = 277V/XFR	**412L** = 240V/XFR
413 = 380V/XFR	**419L** = 277V/XFR
414 = 480V/XFR	**413L** = 380V/XFR
415 = 600V/XFR	**414L** = 480V/XFR
473 = 6V/FV	**415L** = 600V/XFR
474 = 12V/FV	
476 = 24V/FV	
477 = 32V/FV	
478 = 48V/FV	
471 = 120V/RES	
472 = 240V/RES	

Incandescent Lens Color	LED Lens Color
C21 = Red	**RD** = Red
C22 = Green	**GD** = Green
C23 = Yellow	**YD** = Yellow
C26 = White	**WD** = White
C24 = Blue	**LD** = Blue
C43 = Amber	**AD** = Amber
C25 = Clear	

LED Voltage
Blank = Incandescent
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

Circuit
Blank = Operator only
1 = 1NO-1NC
2 = 2NO
3 = 2NC
51 = 1NC
53 = 1NO

Standard Indicating Lights, PresTest and Master Test

10250T 203N C1N ___ ①

Light Unit Type	
Standard—Incandescent	**Standard—LED**
181N = 120V/XFR	**181L** = 120V/XFR
182N = 240V/XFR	**182L** = 240V/XFR
198N = 277V/XFR	**198L** = 277V/XFR
183N = 380V/XFR	**183L** = 380V/XFR
184N = 480V/XFR	**184L** = 480V/XFR
185N = 600V/XFR	**185L** = 600V/XFR
203N = 6V/FV	**197L** = Full voltage
204N = 12V/FV	**PresTest—LED**
206N = 24V/FV	**221L** = 120V/XFR
207N = 32V/FV	**222L** = 240V/XFR
208N = 48V/FV	**223L** = 380V/XFR
201N = 120V/RES	**224L** = 480V/XFR
202N = 240V/RES	**225L** = 600V/XFR
226N = 120V/neon	**297L** = Full voltage
227N = 240V/neon	
PresTest—Incandescent	
221N = 120V/XFR	
222N = 240V/XFR	
223N = 380V/XFR	
224N = 480V/XFR	
225N = 600V/XFR	
232N = 6V/FV	
233N = 12V/FV	
235N = 24V/FV	
238N = 32V/FV	
239N = 48V/FV	
231N = 120V/RES	
240N = 240V/RES	
Master Test—Incandescent	
187N = 120V/XFR	
189N = 240 Vac—SS	

Plastic	Glass	Lens Color	Plastic	Glass	Lens Color
Standard/Master—Incandescent			**Standard/Master/PresTest—LED**		
C1N =	**C7N** =	Red	**RP** =	**RG** =	Red
C2N =	**C8N** =	Green	**GP** =	**GG** =	Green
C3N =	— =	Yellow	**YP** =	— =	Yellow
C6N =	**C12N** =	White	**WP** =	**WG** =	White
C4N =	**C10N** =	Blue	**LP** =	**LG** =	Blue
C19N =	**C9N** =	Amber	**AP** =	**AG** =	Amber
C5N =	**C11N** =	Clear			
PresTest—Incandescent					
C21 =	**C13N** =	Red			
C22 =	**C14N** =	Green			
C23 =	— =	Yellow			
C26 =	**C18N** =	White			
C24 =	**C16N** =	Blue			
C43 =	**C15N** =	Amber			
C25 =	**C17N** =	Clear			

LED Voltage
Blank = Incandescent
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

LED Voltage
Blank = Incandescent
06 = 6 Vac/Vdc
12 = 12 Vac/Vdc
24 = 24 Vac/Vdc
48 = 48 Vac/Vdc
60 = 60 Vac/Vdc
2A = 120 Vac

Note

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

1

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	
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		**Vertical**	**Horizontal**
		Black	**10250T501**	**10250T511**
		Red	**10250T502**	**10250T512**
		Green	**10250T503**	**10250T513**
		Yellow	**10250T504**	**10250T514**
		Gray	**10250T505**	**10250T515**
		White	**10250T506**	**10250T516**
		Blue	**10250T508**	**10250T518**
		Orange	**10250T509**	**10250T519**
10250T12_	Mushroom button	Black	**10250T121**	
		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**

10250TA4_

10250TA5_

Padlockable in the Up Position ①

Operator Type	Color	Latch Type	Catalog Number
Mushroom head	Black	Hand	**10250TA41**
	Green	Hand	**10250TA43**
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-T1-222.**

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/Vdc	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	**10250T76R** ①	**10250T77R** 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: 10250T34R**F**.

1

Illuminated Pushbuttons and Indicating Lights

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

Illuminated Pushbutton

Indicating Light

PresTest

Master Test

Operators without Lens

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**	—
	600		**10250T415**	**10250T185N**	**10250T225N**	—
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-T1-249** for LED Selection and **Page V7-T1-195** 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: 10250T181N**F.**

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

Indicating and Master Test Lenses

Plastic

Glass

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**

Illuminated Pushbutton Lenses

10250TC2_

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

PresTest Lenses

Plastic

Glass

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**

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	O	40 mm red—illuminated	Incandescent	Transformer	120 Vac/Vdc	**10250T563C47-71X**
X	O	40 mm red—illuminated EMERG. STOP	Incandescent	Transformer	120 Vac/Vdc	**10250T563C53-71X**
X	O	40 mm red—illuminated EMERG. STOP	LED	Transformer	120 Vac/Vdc	**10250T563LED06-71X**
X	O	40 mm red—illuminated	Incandescent	Full voltage	24 Vdc	**10250T579C47-71X**
X	O	40 mm red—illuminated EMERG. STOP	Incandescent	Full voltage	24 Vdc	**10250T579C53-71X**
X	O	40 mm red—illuminated	Incandescent	Resistor	120 Vac/Vdc	**10250T580C47-71X**
X	O	40 mm red—illuminated EMERG. STOP	Incandescent	Resistor	120 Vac/Vdc	**10250T580C53-71X**
X	O	40 mm red—illuminated	Incandescent	Transformer	24 Vac	**10250T589C47-71X**
X	O	40 mm red—illuminated EMERG. STOP	Incandescent	Transformer	24 Vac	**10250T589C53-71X**
X	O	40 mm red—illuminated EMERG. STOP	LED	Transformer	24 Vac	**10250T589LED06-71X**
X	O	40 mm red—illuminated	LED	Transformer	24 Vac	**10250T589LRD06-71X**
X	O	40 mm red—illuminated EMERG. STOP	LED	Full voltage	24 Vdc	**10250T597LED24-71X**
X	O	40 mm red—illuminated EMERG. STOP	LED	Full voltage	120 Vac/Vdc	**10250T597LED2A-71X**
X	O	40 mm red—illuminated	LED	Full voltage	24 Vdc	**10250T597LRD24-71X**
X	O	40 mm red—illuminated	LED	Full voltage	120 Vac/Vdc	**10250T597LRD2A-71X**
X	O	40 mm red	—	—	—	**10250T5B62-71X**
X	O	40 mm red—EMERG. STOP	—	—	—	**10250T5B63-71X**
X	O	65 mm red	—	—	—	**10250T5J62-71X**
X	O	65 mm red—EMERG. STOP	—	—	—	**10250T5J63-71X**

Note

① X = closed circuit, O = 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	Mounting Location B	Catalog Number ②
	Two-Position Maintained Push, Maintained Pull						
10250T5B62-1X	0 X	X 0	40 mm/red	1NO			**10250T5B62-1X**
				1NC			
10250T5B63-1X	0 X	X 0	40 mm engraved EMERG. STOP/red	1NO			**10250T5B63-1X**
				1NC			
10250T5J63-1X	0 X	X 0	65 mm aluminum engraved EMERG. STOP/red	1NO			**10250T5J63-1X**
				1NC			
10250ED1080-2	0 X	X 0	65 mm aluminum engraved EMERG. STOP/red	1NO			**10250ED1080-2**
			Special security jumbo mushroom head	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, O = open circuit.

② To order different type or color buttons, substitute the underlined characters with appropriate suffix code from the table. Example: 10250T5**B64**-1X.

③ Anodized aluminum head is not suitable for use in ultraviolet light applications.

1

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 A	Mounting Location B	Catalog Number ②
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

Standard

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

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: 10250T5**B64**-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				**10250T597LRD2A-1X**
			Transformer	24 Vac					**10250T589LRD06-1X**
				120 Vac					**10250T563LRD06-1X**
0	X	Incandescent	Full voltage	24 Vac/Vdc	1NO			#757	**10250T579C47-1X**
X	0		Resistor	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, O = open circuit.

② To order different type or color lens, substitute the underlined characters with appropriate suffix code from table on next page. Example: 10250T579**C63**-1X. For LEDs with different voltages see ordering example on **Page V7-T1-215**.

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

Lens and Color Selection

Standard

Side-Lighted Aluminum

Aluminum Transparent Center

Jumbo Lens

Color	Incandescent Suffix Code	LED Suffix Code	Catalog Number
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—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—40 mm ①			
Red	**C65**	**RH**	**10250TC65**
Green	**C66**	**GH**	**10250TC66**
Amber	**C67**	**AH**	**10250TC67**
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 A	Mounting Location B	LED/ Lamp Number	Red Standard Push-Pull Catalog Number ③
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		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			120MB	**10250T1080C47-1X**
				Transformer	24 Vac				#755	**10250T1089C47-1X**
					120 Vac					**10250T1063C47-1X**
X	0	0		Full voltage	24 Vac/Vdc	1NC			#757	**10250T479C47-3X**
X	X	0		Resistor	120 Vac	1NC			120MB	**10250T480C47-3X**
				Transformer	24 Vac				#755	**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 A	Mounting Location B	LED/ Lamp Number	Red Standard Push-Pull Catalog Number ②
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			120MB	**10250T980C47-3X**
				Transformer	24 Vac				#755	**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-T1-210.** Example: 10250T1079**C53**-1X. For LEDs with different voltages see ordering example on **Page V7-T1-215**.

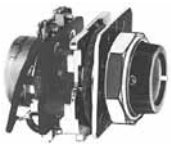
③ To order different type or color lens, substitute the underlined characters with appropriate suffix code from table on **Page V7-T1-210**. Example: 10250T979**C53**X. For LEDs with different voltages see ordering example on **Page V7-T1-215**.

1

Potentiometers

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

Vertical or Horizontal ①
One-Hole Mounting



Potentiometer with Knob and Standard Dial Plate—Linear Type ±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-T1-259**.

Push-Pull Operators

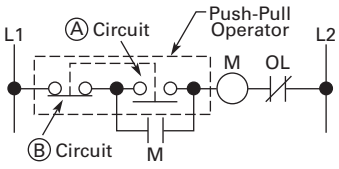
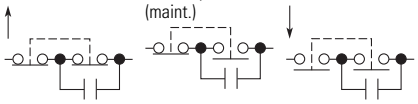
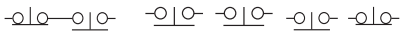
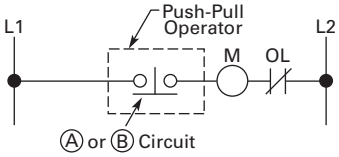
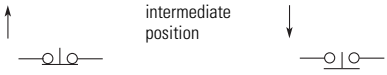
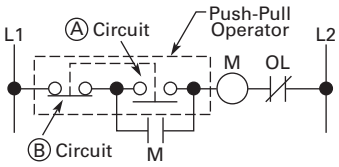
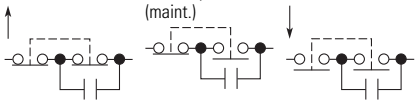
An illuminated push-pull pushbutton unit, arranged for one-hole mounting, can replace two pushbuttons and a pilot light or the non-illuminated form can replace two pushbuttons. These units are available in three basic types:

- **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	START (mom.) Normal pos. (maint.) STOP (mom.) 
		Momentary push and pull 10250T10	1NO-1NC contact block 10250T1	
Two-wire two-position maintained		Maintained push and pull 10250T5	1NC contact block 10250T51	START (maint.) No intermediate position STOP (maint.) 
Three-wire momentary pull maintained push		Maintained push and momentary pull 10250T9	2NC contact block 10250T3	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.

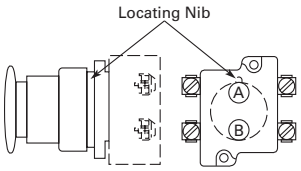
① Shown without button on lens.

1

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

Out—Pull **Intermediate** **In—Push**

Contact Block Mounting Location

Type of Operator	A		B	A		B	A		B	Contact Block ①	Catalog Number
Two-Position Operator without Lens											
Maintained push-pull	0 X	or	0 X	No intermediate position			X 0	or	X 0	1NO 1NC	**10250T5**
	0 X		0 X				X 0		X 0	2NO 2NC	
Maintained push-pull with anti-theft jumbo mushroom	0 X	or	0 X	No intermediate position			X 0	or	X 0	1NO 1NC	**10250ED1080**
	0 X		0 X				X 0		X 0	2NO 2NC	
Three-Position Operator without Lens											
Momentary push-pull	0 X	or	0 X	0 0	or	0 X	X 0	or	0 0	1NO 1NC	**10250T4** ①
	0 X		0 X	0 0		0 X	X 0		0 0	2NO 2NC	
Maintained push-momentary pull	0 X	or	0 X	0 0	or	0 X	X 0	or	0 0	1NO 1NC	**10250T9** ①
	0 X		0 X	0 0		0 X	X 0		0 0	2NO 2NC	
Momentary push-pull	0 X	or	0 X	0 0	or	0 0	X 0	or	X 0	1NO 1NC	**10250T10** ①
	0 X		0 X	0 0		0 0	X 0		X 0	2NO 2ND	

Note

① Maximum of two blocks, four circuits. Special function contact blocks shown on **Page V7-T1-245** 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 AC only 50/60 Hz	24		**10250T89L**
		120		**10250T63L**
		208		**10250T64L**
		240		**10250T65L**
		277		**10250T82L**
		380		**10250T66L**
		480		**10250T67L**
		600		**10250T68L**
Incandescent	Full voltage AC or DC	6		**10250T69**
		12		**10250T70**
		24/28		**10250T79**
		32		**10250T83**
	Resistor AC or DC	120	120MB	**10250T80**
		240		**10250T81**
	Transformer AC only 50/60 Hz	24	#755	**10250T89**
		120		**10250T63**
		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-T1-249**.

Alternate Lenses for Illuminated Push-Pull Devices

Standard

Side-Lighted Anodized Aluminum Ring

Heavy-Duty Aluminum

Jumbo Lens

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 with Transparent Center			
Red	**C65**	**RH**	**10250TC65**
Green	**C66**	**GH**	**10250TC66**
Amber	**C67**	**AH**	**10250TC67**
White	**C68**	—	**10250TC68**
Jumbo Lens—50 mm			
Red	—	—	**10250TC77**

Buttons for Non-Illuminated Push-Pull Devices

Standard

Jumbo Mushroom Head

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 ② (Anodized) Aluminum		
Red	**J62**	**10250TJ62**
Red (EMERG. STOP)	**J63**	**10250TJ63**
Green	**J61**	**10250TJ61**
Black	**J60**	**10250TJ60**
Yellow	**J64**	**10250TJ64**

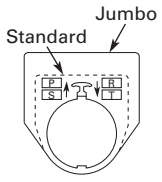
Notes

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-T1-240** to **V7-T1-242**.



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 A	Mounting Location B	Non-Illuminated Black Knob Catalog Number ③	Non-Illuminated Black Lever Catalog Number ③	Illuminated—120V Transformer Red Knob Catalog Number ③	Illuminated—120V Transformer Red Lever Catalog Number ③
X	0	M M	1NC			10250T20K**B**	10250T20L**B**	10250ED1117-K**R**	10250ED1117-L**R**
0	X		1NO						

Three-Position Maintained Switch

Three-Position Selector Switch

Operator Position ①			Operator Action ②	Contact Type	Mounting Location A	Mounting Location B	Non-Illuminated Black Knob Catalog Number ③	Non-Illuminated Black Lever Catalog Number ③	Illuminated—120V Transformer Red Knob Catalog Number ③	Illuminated—120V Transformer Red Lever Catalog Number ③
X	0	0	M M M	1NO			10250T21K**B**	10250T21L**B**	10250ED1117-2K**R**	10250ED1117-2L**R**
0	0	X		1NO						
X	0	0		1NO			10250T22K**B**	10250T22L**B**	10250ED1117-3K**R**	10250ED1117-3L**R**
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 A	Mounting Location B	Non-Illuminated Black Knob Catalog Number ③	Non-Illuminated Black Lever Catalog Number ③	Illuminated—120V Transformer Red Knob Catalog Number ③	Illuminated—120V Transformer Red Lever Catalog Number ③
X	0	0	0	M M M M	1NC			10250T46K**B**	10250T46L**B**	10250ED1117-4K**R**	10250ED1117-4L**R**
0	X	0	0		1NO						
0	0	X	0		1NO						
0	0	0	X		1NC						

Color Selection

Illuminated

Color	Code Letter	Color	Code Letter	Color	Code Letter
Red	**R**	White	**W**	Amber	**A**
Green	**G**	Blue	**B**	Clear	**C**

Non-Illuminated

Color	Code Letter	Color	Code Letter	Color	Code Letter
Black	**B**	Green	**G**	Blue	**L**
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: 10250T20K**G**.

1

Selector Switch Selection

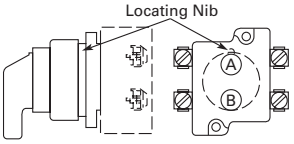
Cam and Contact Block Selection

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-T1-220**) 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.

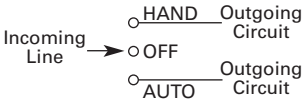
Contact Circuit Locations



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:

HAND OFF AUTO
X O O

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:

HAND OFF AUTO
O O X

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

X O O
O O X

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.

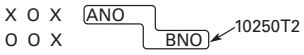
Now to make the cam selection, make a simple worksheet such as:

	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-T1-222**. For the example in step 4 you may want a three-position maintained black knob, cam 3—Catalog Number 10250T1323.

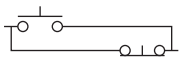
The Complete Switch:
10250T1323 with one 10250T2 or, for one composite catalog number, 10250T21KB found on **Page V7-T1-217.**

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

Series Connection


Parallel Connection

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-T1-245** to **V7-T1-248**.

Example Selection Table

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

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	O	NC	or	NC
2	O	X	NO	or	NO

Note
① Wired in series.

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 Mounting Location Top Plunger A	Bottom Plunger B	Operator with Cam Code #3 Mounting Location Top Plunger A	Bottom Plunger B
1	X	0	0	NO	NC	NO	
2	X	X	0		NC		NC
3	X	0	X	NO		NO	NO
4	0	0	X		NO		NO
5	0	X	X	NC	NO	NC	
6	0	X	0	NC		NC	NC

Four-Position Switch—Contact Block Selection

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

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_**
		2	2, 4, 6	**10250T1652_**	**10250T1662_**
		3		**10250T1653_**	**10250T1663_**
Four-position—40° throw		7	7	**10250T1677_**	**10250T1687_**

Notes

① Horizontal mount, key removal #1 keyed selector switch, cam 1 shown.

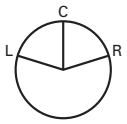
② M = Maintained. S = Spring return in direction of arrow (R).

③ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and tables on **Pages V7-T1-218**, **V7-T1-219** and **V7-T1-220**.

④ Choose key removal position required for application from table on **Page V7-T1-222**. Add key removal code no. to listed catalog number. Example: 10250T1511**2**.

1

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-T1-222** 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-T1-201, V7-T1-222** and **V7-T1-359** 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 Cam Code ④	Black Knob Selector Switch—Vertical Mounting ③ Catalog Number	Black Lever Selector Switch—Vertical Mounting ③ Cam Code ④	Black Lever Selector Switch—Vertical Mounting ③ Catalog Number
Two-Position Maintained ①	Two-position—60° throw	M M	1	**10250T1311**	1	**10250T3011**
		M S	1	**10250T1371**	1	**10250T3071**
Three-Position Maintained ⑤	Three-position—60° throw	M M M	2	**10250T1322**	2	**10250T3022**
			3	**10250T1323**	3	**10250T3023**
		M S M	2	**10250T1332**	2	**10250T3032**
			3	**10250T1333**	3	**10250T3033**
		M S S	2	**10250T1342**	2	**10250T3042**
			3	**10250T1343**	3	**10250T3043**
		M M S	2	**10250T1352**	2	**10250T3052**
			3	**10250T1353**	3	**10250T3053**
	Four-position—40° throw	M M M M	7	**10250T1367**	7	**10250T3067**

Notes

① Black knob selector switch, cam 1 shown.
② M = Maintained. S = Spring return in direction of arrow (R).
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-T1-218**, **V7-T1-219** and **V7-T1-220**.
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	M M	1	**10250T4011**
	M S	1	**10250T4081**
Three-position—60° throw	M M M	2	**10250T4022**
		3	**10250T4023**
	M S M	2	**10250T4032**
		3	**10250T4033**
	M S S	2	**10250T4042**
		3	**10250T4043**
	M M S	2	**10250T4052**
		3	**10250T4053**
Four-position—40° throw	M M M M	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-T1-218**, **V7-T1-219** and **V7-T1-220**.

③ Designed for added ingress protection. For use in maintained operators only.

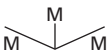
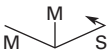
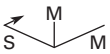
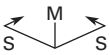
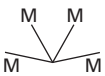
1

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: Cam Code ②	Voltage	Code Number and Catalog Number ③	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
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-T1-218**, **V7-T1-219** and **V7-T1-220**.

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-T1-249**.

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 A	Mounting Location B	Two-Position Assembled Unit Catalog Number ④
X	0	0	M S	1NC			**10250T452-3X**
0	0	X	M S	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

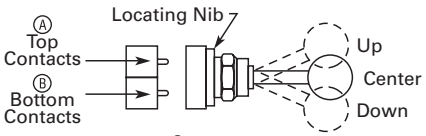
Two-Position Joystick Operators—UL (NEMA) Type 3, 3R, 4, 4X, 12, 13

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 Top A	Bottom B	Catalog Number
X	0	0	1NC			**10250T51**
0	0	X	1NC			**10250T51**
0	X	0	2LONC (Series)			**10250T45**
X	0	0	1NC			**10250T3**
0	0	X	1NC			
X	X	0	1LONC			**10250T45**
0	X	X	1LONC			
X	0	0	1NC			**10250T44** ⑤
0	0	X	1NO			
0	0	X	1NC			
X	0	0	1NO			

A and B Mounting Location



Up
NC Contact at Top Is Closed, NO at Bottom Is Closed

Center
All NC and NO Contacts Are Open (1/2 Way), Late Opening NC Is Closed

Down
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-0" circuit selection. X = closed circuit, 0 = 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**

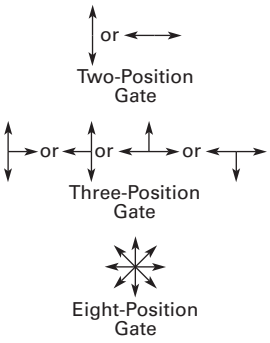
Field Conversion—Gate

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

Handle Positions

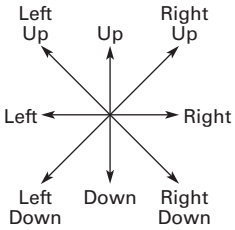
Three additional gates, supplied with every operator, allow on the job conversion to three- or eight-position operation as illustrated.

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
Up	Down	Left	Right	Number
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.

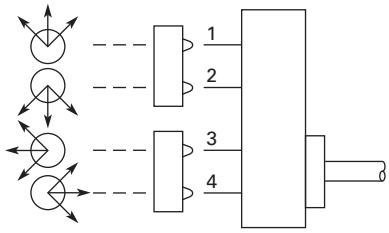
1

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:

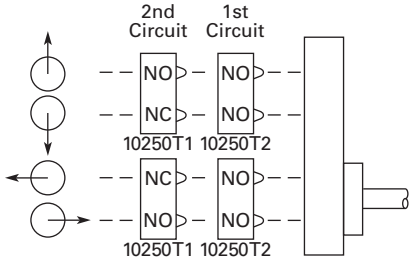
Suppose you are looking for a four-position momentary joystick without a latch and the following circuit arrangements.
X = Closed Circuit, O = Open Circuit.

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	**10250T451**
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:

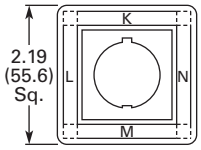
- Horizontal
  3/16 in—13, 1/8 in—14, 3/32 in—19
- Vertical
  3/16 in—10, 1/8 in—13, 3/32 in—14

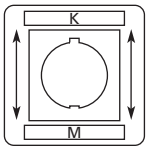
Ordering Example:

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

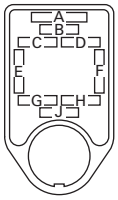
Two-Position

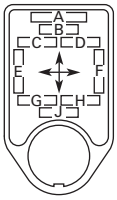




Catalog Number	Catalog Number
Blank Plate	
10250TJS3	**10250TJS4**
Engraved Plate	
10250TJS3STAMP	**10250TJS4STAMP**

Four-Position





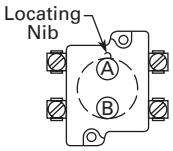
Catalog Number	Catalog Number
Blank Plate	
10250TJS1	**10250TJS2**
Engraved Plate	
10250TJS1STAMP	**10250TJS2STAMP**

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

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.

1

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: 10250T241**1**.
- 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 Rotor 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**

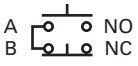
Note

① Not to be used for emergency stop application.

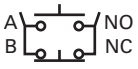
Cam and Contact Block Selection for Two-Position Roto-Push

Combination Number	Collar Position / Circuit Sequence ① N	D	N	D	Cam Code 1	Cam Code 2	Cam Code 3	Cam Code 4	Cam Code 5	Cam Code 6
1	0	0	0	X	A NO	A NO	—	—	A NO	—
2	0	0	X	0	—	—	—	A NC B NO	A NC B NO	—
3	0	0	X	X	—	—	—	—	B NO	A NO
4	0	X	0	0	B NO	A NC B NO	—	—	—	A NC 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 NC B NC	B NC	—	A NC	—	—
11	X	0	X	X	B NC	A NO B NC	—	—	—	A NO B NC
12	X	X	0	0	—	—	—	—	B NC	A NC
13	X	X	0	0	—	—	—	A NO B NC	A NO B NC	—
14	X	X	X	0	A NC	A NC	—	—	A NC	—

Series and Parallel Connections



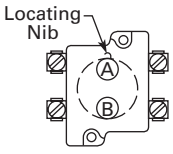
Series Connection



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.

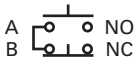
Note

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

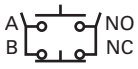
Cam and Contact Block Selection for Two-Position Roto-Push, continued

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

Series and Parallel Connections



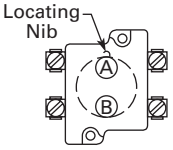
Series Connection



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.

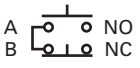
Note

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

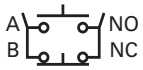
Cam and Contact Block Selection for Three-Position Roto-Push

Combination Number	Collar Position / Circuit Sequence ① N	D	N	D	N	D	Cam Code 7	Cam Code 8	Cam Code 9	Cam Code 15 ②	Cam Code 16	Cam Code 17	Cam Code 18
1	0	0	0	0	0	X	A NO B NO	A NC B NO	—	B NO ②	B NO	—	A NC B NO
2	0	0	0	0	X	X	—	—	B NO	—	—	A NO	—
3	0	0	0	X	0	0	—	—	A NO B NC	—	—	—	A NO B NO
4	0	0	0	X	0	X	—	—	—	—	—	—	B NO
5	0	0	0	X	X	X	—	—	A NO ②	—	—	—	—
6	0	0	X	X	0	0	—	A NO B NO	—	—	—	—	—
7	0	0	X	X	0	X	—	B NO	—	—	—	—	—
8	0	0	X	X	X	0	A NC B NO	—	—	—	—	—	—
9	0	0	X	X	X	X	B NO	—	—	—	—	—	—
10	0	X	0	0	0	0	A NO B NC	A NO B NC	—	A NO ②	A NO	B NO	A NO B NC
11	0	X	0	0	0	X	A NO	—	—	A NO B NO	A NO B NO	—	—
12	0	X	0	0	X	X	—	—	—	—	—	A NO B NO	—
13	0	X	0	X	0	0	—	—	—	—	—	—	A NO
14	0	X	0	X	0	X	—	—	—	—	—	—	A NO B NO
15	0	X	X	X	0	0	—	A NO	—	—	—	—	—
16	0	X	X	X	0	X	—	A NO B NO	—	—	—	—	—
17	0	X	X	X	X	X	A NO B NO	—	—	—	—	—	—

Series and Parallel Connections



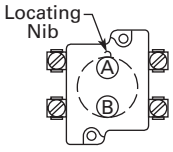
Series Connection



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.

Notes

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

② Limited to 4 contact blocks. See Note on **Page V7-T1-246**.

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

Combination Number	Collar Position / Circuit Sequence ① N	D	N	D	N	D	Cam Code 7	Cam Code 8 ②	Cam Code 9	Cam Code 15	Cam Code 16	Cam Code 17	Cam Code 18
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 ③	—	—	A NC
26	X	X	0	0	0	0	B NC	—	A NC ③	—	—	—	—
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

A NO
B NC

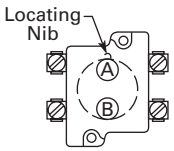
Series Connection

A NO
B NC

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-T1-246.**

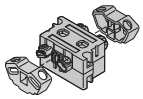
Accessories

Padlocks not included with padlocking attachments. For operators with built-in padlock attachment, see **Page V7-T1-200**.

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

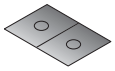
	Description	Catalog Number
	Shrouds and Guards	
10250TA6	**Shroud for Mushroom Head Operator** Prevents accidental operation. (Not for push-pull operators.)	**10250TA6**
10250TA12	**Extended Retaining Nut** Replaces standard nut and provides guard for flush head pushbutton operators.	**10250TA12**
10250TA15	**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-T1-239** 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-T1-185**)	**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**

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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-T1-242.							
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
Blank—see table on Page V7-T1-242.			
2-Position—5/32 in High Lettering			
FOR. REV.	Black	**10250TS38**	**10250TM38**
HAND AUTO		**10250TS39**	**10250TM39**
HIGH LOW		**10250TS40**	**10250TM40**
JOG RUN		**10250TS41**	**10250TM41**
MAN. AUTO		**10250TS67**	**10250TM67**
OFF ON		**10250TS42**	**10250TM42**
OPEN CLOSE		**10250TS43**	**10250TM43**
RUN JOG		**10250TS44**	**10250TM44**
SAFE RUN		**10250TS45**	**10250TM45**
START JOG		**10250TS46**	**10250TM46**
START STOP		**10250TS47**	**10250TM47**
UP DOWN		**10250TS48**	**10250TM48**
3-Position—1/8 in High Lettering			
AUTO OFF HAND	Black	**10250TS49**	**10250TM49**
FOR. OFF REV.		**10250TS50**	**10250TM50**
FOR. SAFE REV.		**10250TS69**	**10250TM69**
HAND OFF AUTO		**10250TS51**	**10250TM51**
MAN. OFF AUTO		**10250TS68**	**10250TM68**
OPEN OFF CLOSE		**10250TS53**	**10250TM53**
RUN SAFE JOG		**10250TS70**	**10250TM70**
UP OFF DOWN		**10250TS54**	**10250TM54**
ON STOP SAFE	Red	**10250TS71**	**10250TM71**

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 ≠ Ø in the center of the plate.

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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

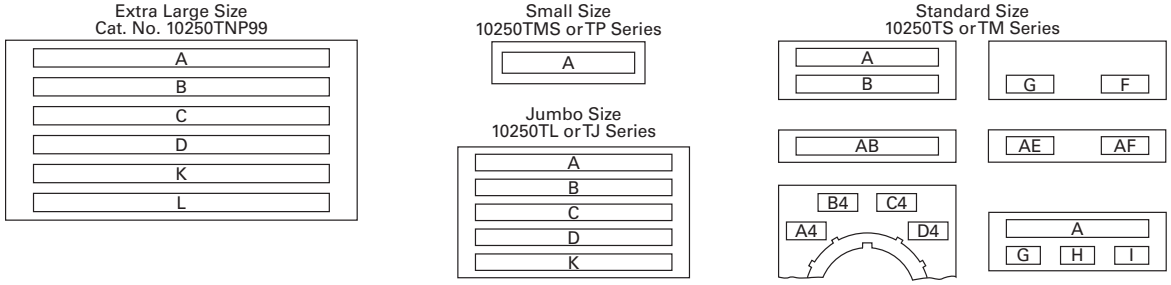
Legend characters on black and red plates are white—on satin aluminum plates, characters are black.

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 Custom ④ Catalog Number	Four-Position Selector Switch Standard Catalog Number	Push-Pull with Symbols ① Standard Catalog Number	Push-Pull with Symbols ① Jumbo ② Catalog Number
Square ⑤	Black	**10250TMS36**	**10250TS36**	**10250TL36**	—	**10250TS76**	**10250TS72**	**10250TPP17**	**10250TPP18**
	Red	**10250TMS37**	**10250TS37**	**10250TL37**	—	—	—	—	—
	Green/red	—	—	—	—	—	—	**10250TPP20**	**10250TPP21**
	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) Width	Height	Style	Character Size 3/32 in High Number of Lines	3/32 in High Number of Characters	1/8 in High Number of Lines	1/8 in High Number of Characters	3/16 in High Number of Lines	3/16 in High 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 ③	2.44 (62.0)	2.44 (62.0)	Square	6	25	3	18	3	12

Notes

① All push-pull legend plates include the symbols ≠ Ø 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** ④**—In-Line NEMA 3, 4X, 12**		
	1	—	**E34N51**
	2	—	**E34N52**
	3	—	**E34N53**
	4	—	**E34N54**
Stainless Steel Enclosure	**Stainless Steel** ④⑤**—In-Line NEMA 4, 4X, 12**		
	1	—	**10250TN33**
	2	—	**10250TN34**
	3	—	**10250TN35**
	4	—	**10250TN36**

Dimensions, see **Page V7-T1-256**.

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.

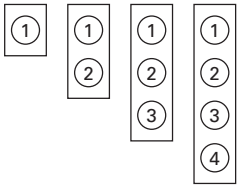
One and Two Contact Block Depth Enclosures

One Contact Block Depth Enclosure

Two Contact Block Depth Enclosure

Enclosure Layouts

Top – For Vertical Mounting



Top – For Horizontal Mounting

Notes

① For spacing increments, see **Page V7-T1-244.**
② All die cast enclosures can be converted to base mounting of contact blocks, with spacers 10250TA22 or 10250TA23. See listing on **Page V7-T1-237.**
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.

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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**

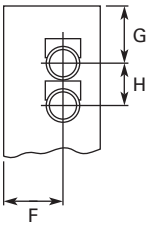
Dimensions, see **Page V7-T1-257**.

Spacing Increments

Approximate Dimensions in Inches (mm)

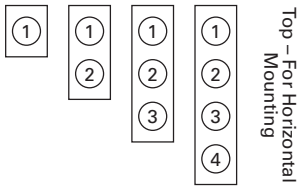
Type	F	G	H
Die cast	2.44 (62.0)	2.5 (63.5)	1.88 (47.8)
Polyester	1.88 (47.8)	Min. 2.13 (54.1)	2.25 (57.2)
Stainless steel	1.69 (42.9)	Min. 1.73 (43.9)	2.25 (57.2)

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

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10250T1

Contact Blocks

Symbol	Circuit	Description ①	Standard Pressure Terminal Catalog Number	Standard Spade Terminal ② Catalog Number	Logic Level Pressure Terminal Catalog Number	Logic Level Spade Terminal ② Catalog Number
Blank No Plunger	1NC	Stack up to six blocks (six circuits) unless otherwise noted.	**10250T51**	**10250T59**	**10250T51E**	**10250T59E**
Blank No Plunger	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						
Blank No Plunger	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**
	NO-NC	Stack up to six blocks (12 circuits) unless otherwise noted.	**10250T1P**	**10250T1EP**
	2NC	Stack up to six blocks (12 circuits) unless otherwise noted.	**10250T3P**	**10250T3EP**
	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
	ECNO-NC	Early closing NO and standard NC. Stack up to six blocks unless otherwise noted.	**10250T47P** ③④	**10250T47EP** ④
	ECNO-NO	Early closing NO and standard NO. Stack up to four blocks unless otherwise noted.	**10250T57P** ③④	**10250T57EP** ④
	2LONC	Two late opening NC contacts. Stack up to six blocks unless otherwise noted.	**10250T45P** ④	**10250T45EP** ④
	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.

1

10250T1C

Amber Contact Blocks

Symbol	Circuit	Description ①	Standard Pressure Terminal ② Catalog Number	Standard Spade Terminal ③ Catalog Number	Logic Level Pressure Terminal ② Catalog Number	Logic Level 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

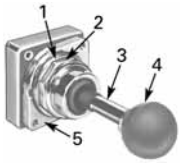
Replacement Lamps—For 10250T Illuminated Operators

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

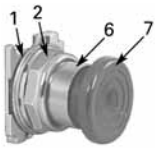
Replacement LED Lamps—For 10250T, E34 and E22 Units

Voltage	Color	Continuous AC/DC Catalog Number	Flashing AC Catalog Number	Flashing 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**



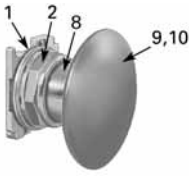
Two-Position Joystick Operator

Flush Head Pushbutton Operator



Mushroom Head Pushbutton Operator

Mushroom Head Operator with Padlock Attachment



Jumbo Mushroom Head Operator

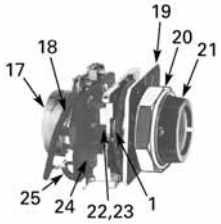
Knob-Operated Selector Switch Operator

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 (captive)	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 Vac or Vdc
Thermal	I_{th} = 10A
Short Circuit Coordination to IEC/EN 60947-5-1	
Rated conditional short circuit current	1 kA
Fuse type	GE power controls TIA 10, red spot type gG, 10A, 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 x 10^6 operations
5A	250V pf 0.4—1 x 10^6 operations
2A	600V pf 0.4—1 x 10^6 operations
Switching capacity	
AC 15 rated make/break (11 x I_e at 1.1 x U_e)	
6A	120V pf 0.3
4A	240V pf 0.3
2A	660V pf 0.3
DC13 rated make/break (1.1 x I_e at 1.1 x U_e)	
1.0A	125V L/R ≥0.95 at 300 ms
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

	50 Vac or 60 Hz				Vdc		
Description	**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

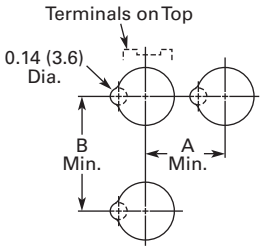
Panel Thickness

- 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

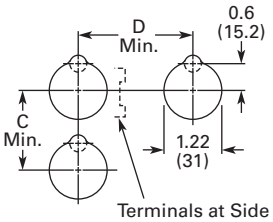
Mounting Matrix

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

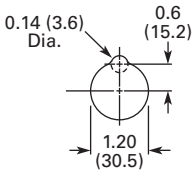


Vertical Mounting

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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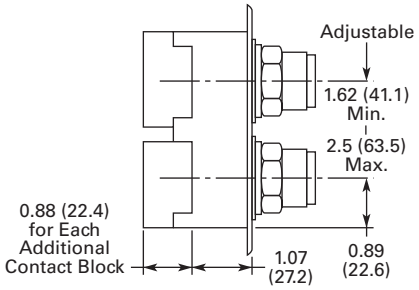
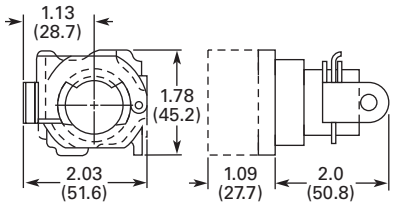
Dimensions

Approximate Dimensions in Inches (mm)

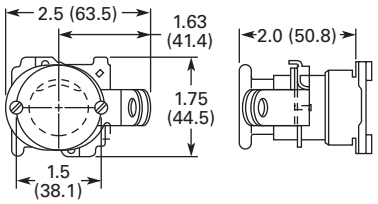
Mechanically Interlocked Pushbutton Operators



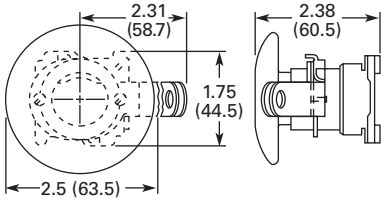
Lockout Pushbutton Operator Padlockable in the Down Position



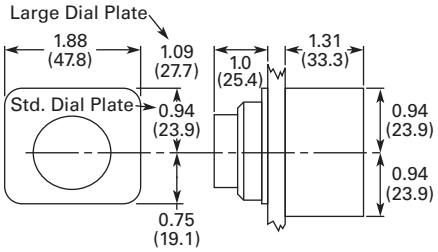
Lockout Pushbutton Operator Padlockable in the Up Position—Mushroom Head



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

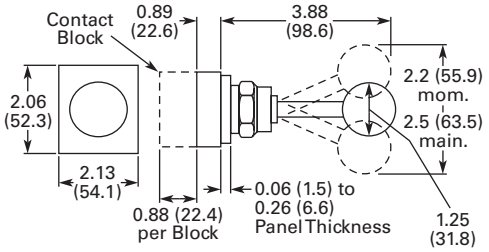


Potentiometer

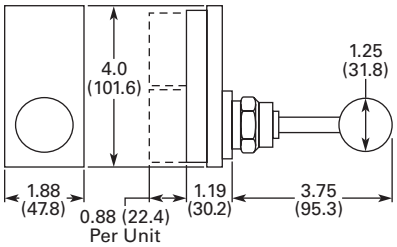


Potentiometer	A	B	C
2 watt single	1.31 (33.3)	0.94 (23.9)	0.94 (23.9)
25 watt—up to 25 mohms	2.38 (60.5)	1.19 (30.2)	0.81 (20.6)
50 mohms	2.56 (65.0)	1.69 (42.9)	1.25 (31.8)

Two-Position Joystick Operator

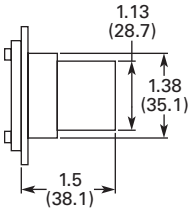


Four-Position Joystick Operator

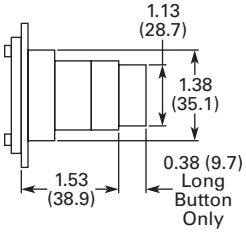


Approximate Dimensions in Inches (mm)

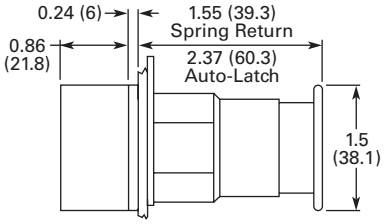
Key Operated Pushbutton Operator



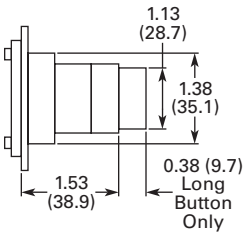
Operator and Cam



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



Special Rotor Latch



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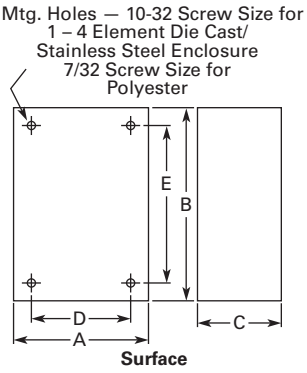
Approximate Dimensions in Inches (mm)

Surface Mounting

Die Cast, Polyester and Stainless Steel Enclosures



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)	4.00 (101.6)	3.00 (76.3) ①	2.69 (68.3)	3.25 (82.6)	3/4
2		3.88 (98.6)	5.88 (149.4)	3.00 (76.3) ①	2.69 (68.3)	5.13 (130.3)	
3		3.88 (98.6)	7.75 (196.9)	3.00 (76.3) ①	2.69 (68.3)	7.00 (177.8)	1
4		3.88 (98.6)	9.63 (244.6)	3.00 (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

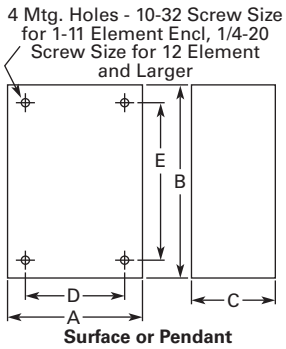
① Depth given is for two contact block deep stations. One contact block deep stations subtract 3/4 in (19.1 mm).

② No conduit entrance holes provided. Drill as required.

Approximate Dimensions in Inches (mm)

Flush Mounting

Die Cast and Stainless Steel Covers Only



Surface or Pendant

Number of Elements	Wide A	High B	Deep C	Mounting D	E
Die Cast					
1	3.88 (98.6)	4.00 (101.6)	0.25 (6.4) ①	3.50 (88.9)	3.63 (92.2)
2	3.88 (98.6)	5.88 (149.4)	0.25 (6.4) ①	3.50 (88.9)	5.50 (139.7)
3	3.88 (98.6)	7.75 (196.9)	0.25 (6.4) ①	3.50 (88.9)	6.00 (152.4)
4	3.88 (98.6)	9.63 (244.6)	0.25 (6.4) ①	3.50 (88.9)	9.25 (235.0)
Stainless Steel					
1	5.00 (127.0)	5.00 (127.0)	2.50 (63.5) ②	3.25 (82.6)	1.88 (47.8)
2	5.00 (127.0)	6.88 (174.8)	2.50 (63.5) ②	3.25 (82.6)	3.63 (92.2)
3	5.00 (127.0)	8.63 (219.2)	2.50 (63.5) ②	3.25 (82.6)	5.50 (139.7)
4	5.00 (127.0)	10.50 (266.7)	2.50 (63.5) ②	3.25 (82.6)	7.25 (184.2)

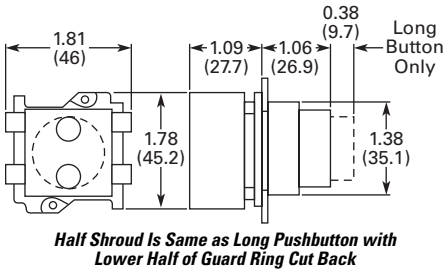
Notes

① Depth given is for flat cover. Deep cover is 3/4 in (19.1 mm) deeper.

② Depth given includes pull box.

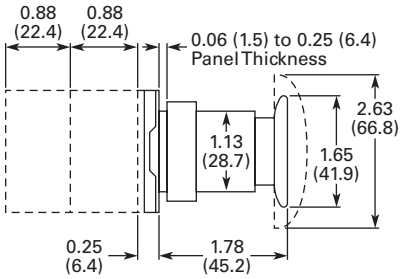
Approximate Dimensions in Inches (mm)

Flush and Long Pushbutton Half Shroud

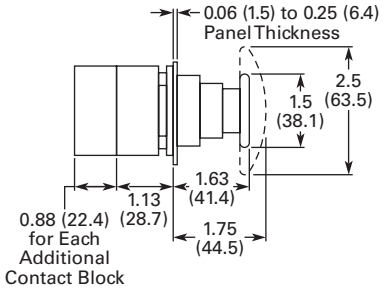


Half Shroud Is Same as Long Pushbutton with Lower Half of Guard Ring Cut Back

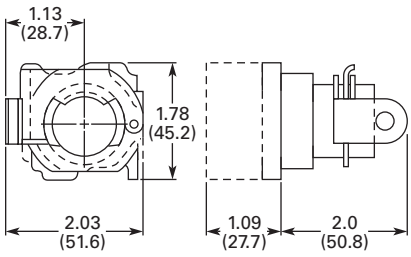
Push-Pull Switch



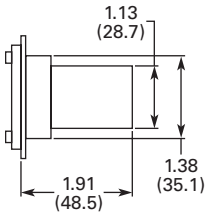
Mushroom and Jumbo Head Pushbutton



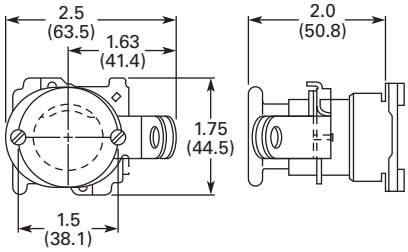
Flush Pushbutton Operator with Padlock Attachment



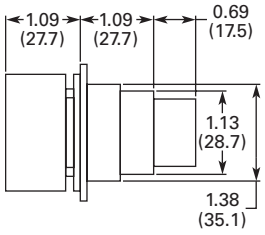
Pushbutton with Cylinder Lock



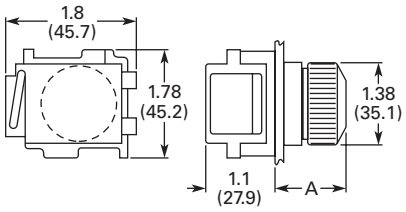
Mushroom Head Pushbutton Operator with Padlock Attachment



Illuminated Pushbutton

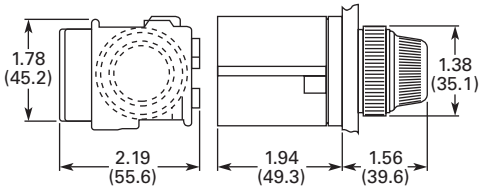


Indicating Light—Transformer Type

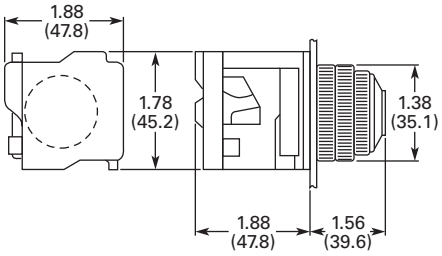


Approximate Dimensions in Inches (mm)

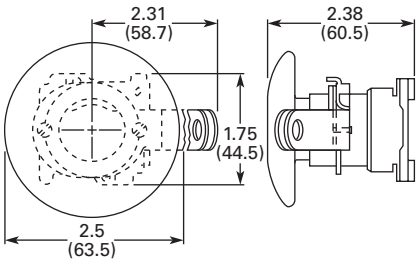
PresTest Indicating Light—Transformer Type



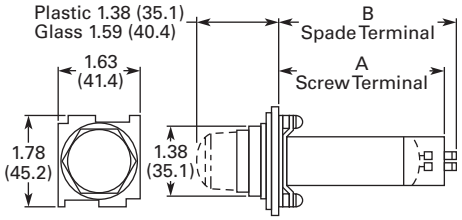
PresTest Indicating Light—Resistor Type



Jumbo Mushroom Head Pushbutton Operator with Padlock Attachment

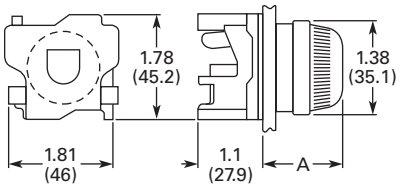


Master Test Indicating Light



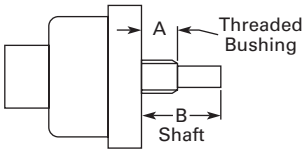
Description	B	C
Relay type	4.38 (111.2)	4.28 (108.7)
Solid-state type	2.94 (74.7)	2.88 (73.2)

Indicating Light—Resistor and Neon Type



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

Potentiometer Shaft



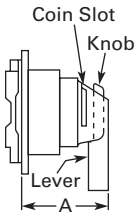
Shaft Dimensions of Potentiometer That C-H Operator Will Accept

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

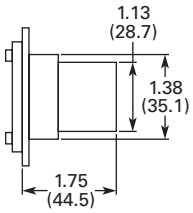
Approximate Dimensions in Inches (mm)

Coin Operated Selector Switch

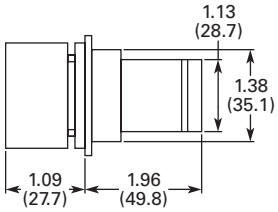


Operator	Dim. A
Knob	1.38 (35.1)
Lever	1.50 (38.1)
Coin slot	1.38 (35.1)

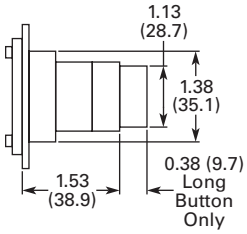
Key Operated Selector Switch



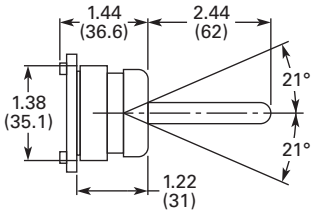
Illuminated Selector Switch



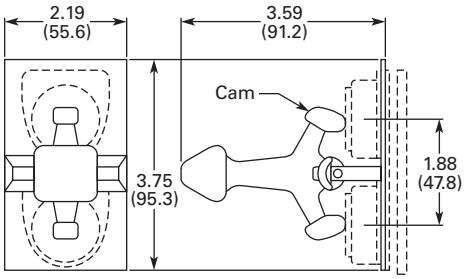
Roto-Push



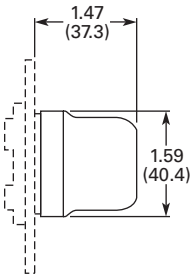
Wobble Stick Catalog No. 10250TA5



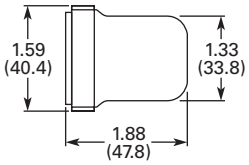
Lever Operator—For Use with Two Vertically Mounted Flush Pushbuttons Catalog No. 10250TA14



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

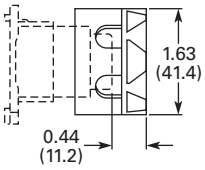


Transparent Flexible Boot—For Illuminated Pushbutton Catalog No. 10250TA25

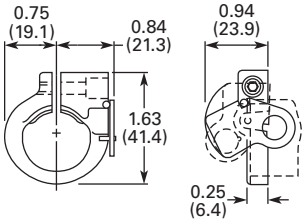


Approximate Dimensions in Inches (mm)

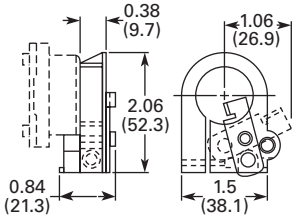
Padlock Attachment—For Knob Selector Switch Catalog No. 10250TA11



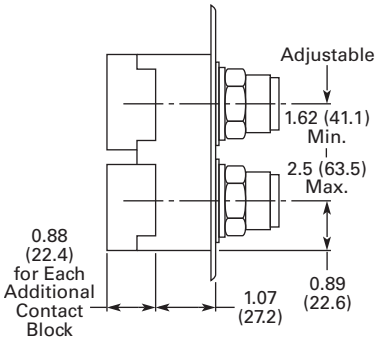
Padlock Attachment—For Flush Pushbutton Catalog No. 10250TA2



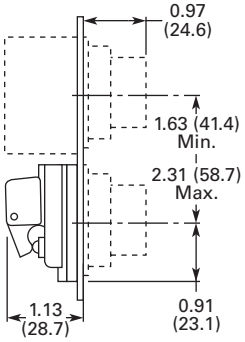
Padlock Attachment—For Extended Pushbutton Catalog No. 10250TA26



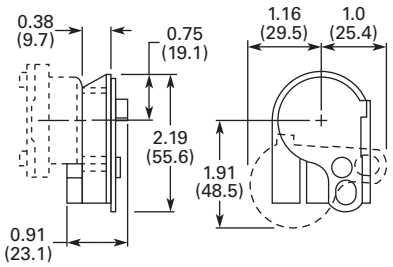
Maintained Pushbutton Catalog No. 10250TA66 Typical



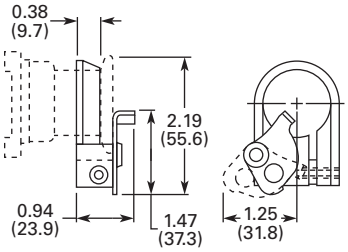
Maintained Contact Attachment Catalog No. 10250TA17 Typical



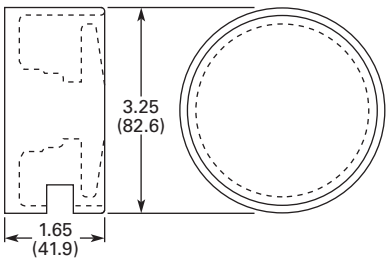
Padlock Cover Guard for Flush Pushbutton Catalog No. 10250TA36



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



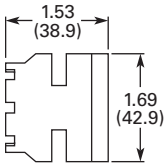
Protecting Shroud for Jumbo Mushroom Head Button Catalog No. 10250TA56



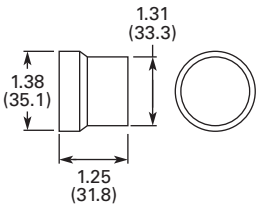
1

Approximate Dimensions in Inches (mm)

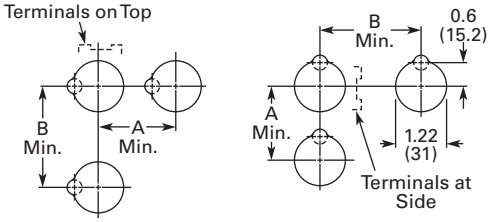
Protecting Shroud for Mushroom Head Button Catalog No. 10250TA6



Extended Retaining Nut Catalog No. 10250TA12

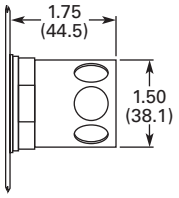


Panel Drilling and Minimum Spacing

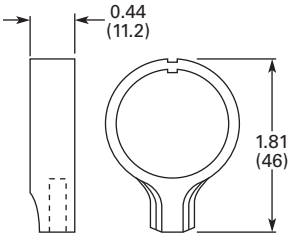


Horizontal Rows **Vertical Rows**

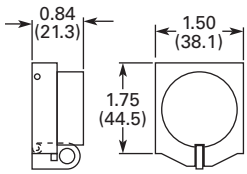
Protecting Shroud for Illuminated Pushbutton Catalog No. 10250TA15



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 (66.0)
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 (66.0)

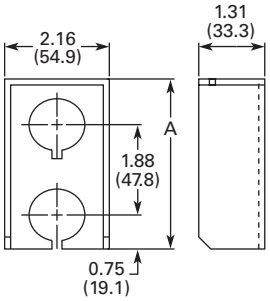
Notes

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.

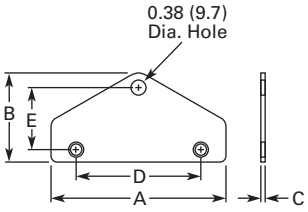
Approximate Dimensions in Inches (mm)

Multiple Button Guard



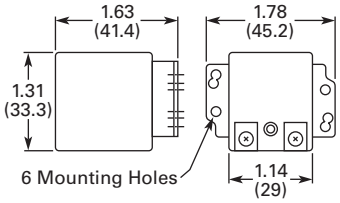
Number of Elements	A
2	4.0 (101.6)
3	5.88 (149.4)
4	7.88 (200.2)
7	13.38 (339.9)

Chain Hook Bracket

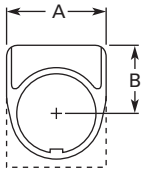


Enclosure Size (No. of Elements)	Wide A	High B	Deep C	Mounting D	E
2, 3 and 4	3.75 (95.3)	1.94 (49.3)	0.13 (3.3)	2.69 (68.3)	1.38 (35.1)
6 and 7	4.0 (101.6)	2.19 (55.6)	0.13 (3.3)	2.88 (73.2)	1.63 (41.4)

Master Test Module, Flasher Module and Legend Plate



Master Test Module, Flasher Module



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).

30.5 mm Corrosion Resistant Watertight/Oiltight—E34

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Product Description

Eaton's E34 Series 30.5 mm pushbutton line features the same rugged die cast construction of our 10250T line with an additional two-layer 100% solid thermosetting cathodic epoxy coating. This coating provides a flat black smooth, consistent, corrosion resistant surface that has passed a demanding 600 hour salt spray test. (The industry standard for this 4X test requires only 200 hours.)

Features

- Epoxy-coated metal operators
- Corrosion resistant
- Integral ground screw terminal on operators
- FDA approved for sanitary chemical resistance requirements

Standards and Certifications

- CE EN60947-5-1 and 60947-5-5
- UL 508—File No. E131568
- CSA C22.2 No. 14—File No. LR68551
- FDA 3-A Sanitary Standards

Ingress Protection

When mounted in similarly rated enclosure—

- Standard indicating lights
  - UL (NEMA) Type 1, 2, 3, 3R, 3S, 4, 4X, 12, 13
  - IEC IP65
- All other operators
  - UL (NEMA) Type 1, 2, 3, 3R, 4, 4X, 12, 13
  - IEC IP65

Product Overview

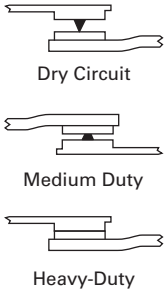
Ultraviolet Light

E34 cathodic coating is not recommended for use in applications where exposure to ultraviolet light exists—use NEMA 4X 10250T operators.

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

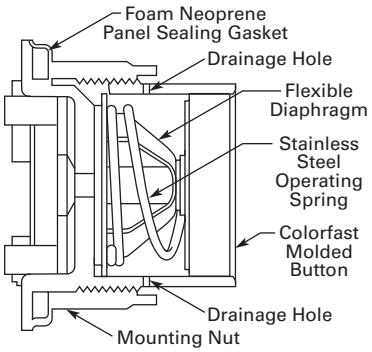


Diaphragm Seal with Drainage Holes

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



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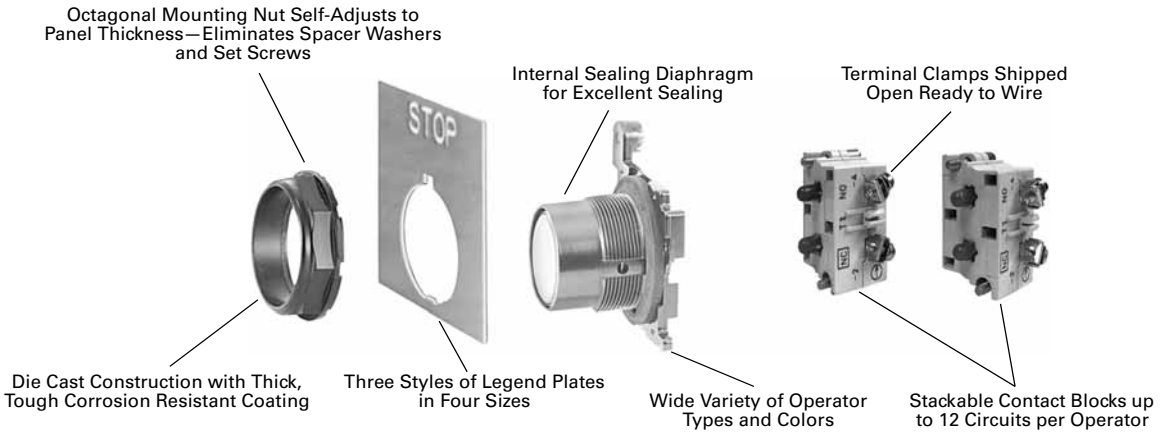
Product Identification

30.5 mm Corrosion Resistant Watertight/Oiltight—E34 Series



Catalog Number Selection

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

Non-Illuminated Pushbuttons

E34 PB 1 – 1 ①

Operator
PB = Flush
EB = Extended
LB = 40 mm mushroom
JB = 65 mm mushroom
EVB = 1/2 shroud vertical mount
EHB = 1/2 shroud horizontal mount

Button Color	
1 = Black	**7** = Gray
2 = Red	**5** = White
3 = Green	**6** = Blue
4 = Yellow	**8** = Orange

Circuit
Blank = Operator only
1 = 1NO-1NC
2 = 2NO
3 = 2NC
51 = 1NC
53 = 1NO

Illuminated and Non-Illuminated Push-Pulls

E34 GDB 63 M2 ___ – 1 ①

Operator
GDB = Two-position maintained
GEB = Three-position mom push-mom pull
GFB = Three-position mt push-mom pull
GHB = Three-position mom push-mom pull

Incandescent Light Unit	LED Light Unit
Blank = Non-illuminated	**Blank** = Non-illuminated
89 = 24V/XFR	**89L** = 24V/XFR
63 = 120V/XFR	**63L** = 120V/XFR
64 = 208V/XFR	**64L** = 208V/XFR
65 = 240V/XFR	**65L** = 240V/XFR
82 = 277V/XFR	**82L** = 277V/XFR
66 = 380V/XFR	**66L** = 380V/XFR
67 = 480V/XFR	**67L** = 480V/XFR
68 = 600V/XFR	**68L** = 600V/XFR
69 = 6V/FV	**97L** = Full voltage
70 = 12V/FV	
79 = 24V/FV	
83 = 32V/FV	
80 = 120V/RES	
81 = 240V/RES	

LED Voltage
Blank = Non-illuminated
Blank = Incandescent
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

Circuit
Blank = Operator only
1 = 1NO-1NC
2 = 2NO
3 = 2NC
51 = 1NC
53 = 1NO

Non-Illuminated	Illuminated		
Button	Incandescent	LED	Lens Type
C1 = Black 40 mm	**M2** =	**RD** =	Red 40 mm
C2 = Red 40 mm	**M2N8** =	**ED** =	Red 40 mm—"E" STOP
C2N8 = Red 40 mm—"E" STOP	**M3** =	**GD** =	Green 40 mm
C3 = Green 40 mm	**M6** =	**LD** =	Blue 40 mm
C6 = Blue 40 mm	**M9** =	**AD** =	Amber 40 mm
— = Black 65 mm	**M5** =	**WD** =	White 40 mm
J2 = Red 65 mm	**M0** =	**—** =	Clear 40 mm
J2N8 = Red 65 mm—"E" STOP			
— = Green 65 mm			
— = Yellow 65 mm			

Note

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

1

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

Illuminated Pushbuttons

E34 XB 24 V2 ___ – 1 ①

Light Unit Type

XB = Transformer
CB = Full voltage
SB = Resistor

Incandescent Light Unit	LED Light Unit
024 = 24V/XFR	**024L** = 24V/XFR
120 = 120V/XFR	**120L** = 120V/XFR
240 = 240V/XFR	**240L** = 240V/XFR
277 = 277V/XFR	**277L** = 277V/XFR
380 = 380V/XFR	**380L** = 380V/XFR
480 = 480V/XFR	**480L** = 480V/XFR
600 = 600V/XFR	**600L** = 600V/XFR
06 = 6V/FV	**397L** = Full voltage
12 = 12V/FV	
24 = 24V/FV	
32 = 32V/FV	
48 = 48V/FV	
120 = 120V/RES	
240 = 240V/RES	

Circuit

Blank = Operator only
1 = 1NO-1NC
2 = 2NO
3 = 2NC
51 = 1NC
53 = 1NO

LED Voltage

Blank = Incandescent	**48** = 48 Vac/Vdc
06 = 6 Vac/Vdc	**60** = 60 Vac/Vdc
12 = 12 Vac/Vdc	**2A** = 120 Vac
24 = 24 Vac/Vdc	**2D** = 120 Vdc

Incandescent Lens Color	LED Lens Color
V2 = Red	**RD** = Red
V3 = Green	**GD** = Green
V4 = Yellow	**YD** = Yellow
V5 = White	**WD** = White
V6 = Blue	**LD** = Blue
V9 = Amber	**AD** = Amber
V0 = Clear	

Standard Indicating Lights, PresTest and Master Test

E34 FB06 H2 ___ ①

Light Unit Type

Standard—Incandescent	Standard—LED
TB120 = 120V/XFR	**TB120L** = 120V/XFR
TB240 = 240V/XFR	**TB240L** = 240V/XFR
TB277 = 277V/XFR	**TB277L** = 277V/XFR
TB380 = 380V/XFR	**TB380L** = 380V/XFR
TB480 = 480V/XFR	**TB480L** = 480V/XFR
TB600 = 600V/XFR	**TB600L** = 600V/XFR
FB06 = 6V/FV	**FB197L** = Full voltage
FB12 = 12V/FV	**PresTest—LED**
FB24 = 24V/FV	**TPB120L** = 120V/XFR
FB32 = 32V/FV	**TPB240L** = 240V/XFR
FB48 = 48V/FV	**TPB380L** = 380V/XFR
RB120 = 120V/RES	**TPB480L** = 480V/XFR
RB240 = 240V/RES	**TPB600L** = 600V/XFR
NB120 = 120V/neon	**FPB297L** = Full voltage
NB240 = 240V/neon	

PresTest—Incandescent

TPB120 = 120V/XFR
TPB240 = 240V/XFR
TPB380 = 380V/XFR
TPB480 = 480V/XFR
TPB600 = 600V/XFR
FPB06 = 6V/FV
FPB12 = 12V/FV
FPB24 = 24V/FV
FPB32 = 32V/FV
FPB48 = 48V/FV
RPB120 = 120V/RES
RPB240 = 240V/RES

Plastic	Glass	Lens Color	Plastic	Glass	Lens Color
Standard/Master—Incandescent			**Standard/Master/PresTest—LED**		
H2 =	**G2** =	Red	**RP** =	**RG** =	Red
H3 =	**G3** =	Green	**GP** =	**GG** =	Green
H4 =	**G4** =	Yellow	**YP** =	**YG** =	Yellow
H5 =	**G5** =	White	**WP** =	**WG** =	White
H6 =	**G6** =	Blue	**LP** =	**LG** =	Blue
H9 =	**G9** =	Amber	**AP** =	**AG** =	Amber
H0 =	**G0** =	Clear			

PresTest—Incandescent

V2 =	**P2** =	Red
V3 =	**P3** =	Green
V4 =	**P4** =	Yellow
V5 =	**P5** =	White
V6 =	**P6** =	Blue
V9 =	**P9** =	Amber
V0 =	**P0** =	Clear

LED Voltage

Blank = Incandescent
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

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.

Ordering Complete Devices

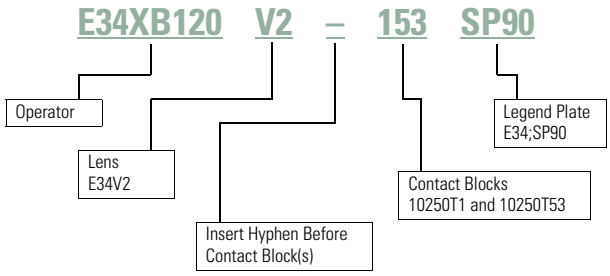
Complete E34 pushbuttons, indicating lights and/or selector switch operators including contact block(s) and legend plate can be ordered using a single composite catalog number. The individually packaged components will be shipped unassembled in a single overpack carton marked with the composite catalog number.

Ordering Example

Illuminated Pushbutton Device—Catalog Number E34XB120V2-153SP90

For a complete Catalog Number breakdown, see **Pages V7-T1-267** to **V7-T1-268.**

For Complete E34 Device Ordering



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Product Selection

Non-Illuminated Momentary Pushbutton Units

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

Flush Button

Extended Button

Mushroom Button

Jumbo Mushroom

Pushbutton Units

Contact Type	Button Color	Flush Button Catalog Number	Extended Button Catalog Number	Mushroom Button Catalog Number	Jumbo Mushroom ① Catalog Number
1NO	Black	**E34PB1-53X**	**E34EB1-53X**	**E34LB1-53X**	**E34JB1-53X**
	Red	**E34PB2-53X**	**E34EB2-53X**	**E34LB2-53X**	**E34JB2-53X**
	Green	**E34PB3-53X**	**E34EB3-53X**	**E34LB3-53X**	**E34JB3-53X**
	Red—Engraved EMERG. STOP	—	—	—	**E34JB2N8-53X**
1NC	Black	**E34PB1-51X**	**E34EB1-51X**	**E34LB1-51X**	**E34JB1-51X**
	Red	**E34PB2-51X**	**E34EB2-51X**	**E34LB2-51X**	**E34JB2-51X**
	Green	**E34PB3-51X**	**E34EB3-51X**	**E34LB3-51X**	**E34JB3-51X**
	Red—Engraved EMERG. STOP	—	—	—	**E34JB2N8-51X**
1NO-1NC	Black	**E34PB1-1X**	**E34EB1-1X**	**E34LB1-1X**	**E34JB1-1X**
	Red	**E34PB2-1X**	**E34EB2-1X**	**E34LB2-1X**	**E34JB2-1X**
	Green	**E34PB3-1X**	**E34EB3-1X**	**E34LB3-1X**	**E34JB3-1X**
	Red—Engraved EMERG. STOP	—	—	—	**E34JB2N8-1X**

Plastic Lens Indicating Light Units

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

24V Full Voltage Indicating Light

Indicating Light Units

Type	Voltage	Color	LED/Lamp Number	Indicating Light ① Catalog Number
LED Lamp				
Full voltage	24 Vac/Vdc	Red	Bayonet base	**E34FB197LRP24**
		Green		**E34FB197LGP24**
		Amber		**E34FB197LAP24**
	120 Vac	Red		**E34FB197LRP2A**
		Green		**E34FB197LGP2A**
		Amber		**E34FB197LAP2A**
Incandescent Lamp				
Full voltage	24 Vac/Vdc	Red	#757	**E34FB24H2X**
		Green		**E34FB24H3X**
		Amber		**E34FB24H9X**
Resistor	120 Vac/Vdc	Red	120MB	**E34RB120H2X**
		Green		**E34RB120H3X**
		Amber		**E34RB120H9X**
Transformer	120 Vac 50/60 Hz	Red	#755	**E34TB120H2X**
		Green		**E34TB120H3X**
		Amber		**E34TB120H9X**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① Anodized aluminum head—may not be suitable for some corrosive environments.

Pushbuttons

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

Momentary Pushbutton Operators, Non-Illuminated

	Button	Color	Catalog Number	
E34PB_	Flush button	Black	**E34PB1**	
		Red	**E34PB2**	
		Green	**E34PB3**	
		Yellow	**E34PB4**	
		White	**E34PB5**	
		Blue	**E34PB6**	
		Gray	**E34PB7**	
		Orange	**E34PB8**	
E34EB_	Extended button	Black	**E34EB1**	
		Red	**E34EB2**	
		Green	**E34EB3**	
		Yellow	**E34EB4**	
		White	**E34EB5**	
		Blue	**E34EB6**	
		Gray	**E34EB7**	
		Orange	**E34EB8**	
E34EHB_	Half shrouded button		**Vertical**	**Horizontal**
		Black	**E34EVB1**	**E34EHB1**
		Red	**E34EVB2**	**E34EHB2**
		Green	**E34EVB3**	**E34EHB3**
		Yellow	**E34EVB4**	**E34EHB4**
		White	**E34EVB5**	**E34EHB5**
		Blue	**E34EVB6**	**E34EHB6**
		Gray	**E34EVB7**	**E34EHB7**
		Orange	**E34EVB8**	**E34EHB8**
E34LB_	Mushroom button	Black	**E34LB1**	
		Red	**E34LB2**	
		Green	**E34LB3**	
		Yellow	**E34LB4**	
		Blue	**E34LB6**	
E34JB_	Anodized aluminum jumbo mushroom button ①	Black	**E34JB1**	
		Red	**E34JB2**	
		Red (Engraved EMERG. STOP)	**E34JB2N8**	
		Green	**E34JB3**	
		Yellow	**E34JB4**	

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① Anodized aluminum head—may not be suitable for some corrosive environments.

1

Illuminated Pushbuttons and Indicating Lights

Illuminated Pushbutton

Indicating Light

PresTest

Operators without Lens

Type	Voltage	Lamp Number	Illuminated Pushbutton Catalog Number	Indicating Light Catalog Number	PresTest Catalog Number
LED Lamp (LEDs not included) ①					
Full voltage	—	Bayonet base	**E34CB497L**	**E34FB197L**	**E34FPB297L**
Transformer AC only	24		**E34XB024L**	—	—
	120		**E34XB120L**	**E34TB120L**	**E34TPB120L**
	240		**E34XB240L**	**E34TB240L**	**E34TPB240L**
	277		**E34XB277L**	**E34TB277L**	—
	380		**E34XB380L**	**E34TB380L**	**E34TPB380L**
	480		**E34XB480L**	**E34TB480L**	**E34TPB480L**
	600		**E34XB600L**	**E34TB600L**	**E34TPB600L**
Incandescent Lamp					
Full voltage AC/DC	6	#755	**E34CB06**	**E34FB06**	**E34FPB06**
	12	#756	**E34CB12**	**E34FB12**	**E34FPB12**
	24	#757	**E34CB24**	**E34FB24**	**E34FPB24**
	32	#1828	**E34CB32**	**E34FB32**	**E34FPB32**
	48	#1835	**E34CB48**	**E34FB48**	**E34FPB48**
Resistor AC/DC ②	120	120MB	**E34SB120**	**E34RB120**	**E34RPB120**
	240		**E34SB240**	**E34RB240**	**E34RPB240**
Transformer AC only	24	#755	**E34XB024**	—	—
	120		**E34XB120**	**E34TB120**	**E34TPB120**
	240		**E34XB240**	**E34TB240**	**E34TPB240**
	277		**E34XB277**	**E34TB277**	—
	380		**E34XB380**	**E34TB380**	**E34TPB380**
	480		**E34XB480**	**E34TB480**	**E34TPB480**
	600		**E34XB600**	**E34TB600**	**E34TPB600**
Neon AC/DC	120	NE51H-R-22	—	**E34NB120**	—
	240	NE51H-4-68	—	**E34NB240**	—

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① These units do not include lamps. Order LED separately to match lens color, see **Page V7-T1-249** for LED Selection and **Pages V7-T1-267** to **V7-T1-268** for Catalog Numbering Selection.

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

Plastic

Glass

Indicating Light Lens

Color	Plastic Catalog Number	Glass ① Catalog Number
Red	**E34H2**	**E34G2**
Green	**E34H3**	**E34G3**
Yellow	**E34H4**	**E34G4**
White	**E34H5**	**E34G5**
Blue	**E34H6**	**E34G6**
Ambler	**E34H9**	**E34G9**
Clear	**E34H0**	**E34G0**

E34V_

Illuminated Pushbutton Lens

Color	Catalog Number
Red	**E34V2**
Green	**E34V3**
Yellow	**E34V4**
White	**E34V5**
Blue	**E34V6**
Ambler	**E34V9**
Clear	**E34V0**

Plastic

Glass

PresTest Lens

Color	Plastic Catalog Number	Glass ① Catalog Number
Red	**E34V2**	**E34P2**
Green	**E34V3**	**E34P3**
Yellow	**E34V4**	**E34P4**
White	**E34V5**	**E34P5**
Blue	**E34V6**	**E34P6**
Ambler	**E34V9**	**E34P9**
Clear	**E34V0**	**E34P0**

Note

① Glass lens has black anodized aluminum bezel.

1

Push-Pull Units

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

- Two- and three-position
- Non-illuminated

Two-Position Push-Pull Unit

Two-Position Push-Pull Units, Non-Illuminated

Operator Position ① Pull	Push	Button Type/Color ②	Contact Type	Mounting Location A	Mounting Location B	Catalog Number
Maintained Push, Maintained Pull						
0	X	40 mm/red	1NO			**E34GDBC2-1X**
X	0	40 mm engraved EMERG. STOP/red	1NC			**E34GDBC2N8-1X**
		65 mm aluminum engraved EMERG. STOP/red				**E34GDBJ2N8-1X**

Three-Position Push-Pull Unit

Three-Position Push-Pull Units, Non-Illuminated

Operator Position ① Pull	Intermediate	Push	Button Type/Color ②	Contact Type	Mounting Location A	Mounting Location B	Catalog Number
Maintained Push, Momentary Pull							
X	0	0	40 mm/black	1NC			**E34GFBC1-3X**
X	X	0	40 mm/red	1NC			**E34GFBC2-3X**
			40 mm engraved EMERG. STOP/red				**E34GFBC2N8-3X**
Momentary Push, Momentary Pull							
X	0	0	40 mm/black	1NC			**E34GEBC1-3X**
X	X	0	40 mm/red	1NC			**E34GEBC2-3X**
0	0	X	40 mm/black	1NO			**E34GHBC1-1X**
X	0	0	40 mm/red	1NC			**E34GHBC2-1X**

Button and Color Selection

Standard

Jumbo Mushroom Head

Color	Suffix Code	Catalog Number
Standard—40 mm		
Black	**C1**	**E34C1**
Red	**C2**	**E34C2**
Red (EMERG. STOP)	**C2N8**	**E34C2N8**
Green	**C3**	**E34C3**
Blue	**C6**	**E34C6**
Jumbo Mushroom Head ③ (Anodized) Aluminum—65 mm		
Red	**J2**	**E34J2**
Red (EMERG. STOP)	**J2N8**	**E34J2N8**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

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: E34GDB**C6**-1X.

③ Anodized aluminum may not be suitable for use on some corrosive applications.

Illuminated Push-Pull Units

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

- Two-position maintained
- Illuminated

Illuminated Push-Pull Unit

Two-Position Illuminated Maintained Push, Maintained Pull

Operator Position ①

Maintained—Pull	Maintained—Intermediate	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	**E34GDB97LRD24-1X**
X	0			120 Vac/Vdc	1NC				**E34GDB97LRD2A-1X**
			Transformer	24 Vac					**E34GDB89LRD06-1X**
				120 Vac					**E34GDB63LRD06-1X**
0	X	Incan-descent	Full voltage	24 Vac/Vdc	1NO			#757	**E34GDB79M2-1X**
X	0		Resistor	120 Vac/Vdc	1NC			120MB	**E34GDB80M2-1X**
			Transformer	24 Vac				#755	**E34GDB89M2-1X**
				120 Vac					**E34GDB63M2-1X**

Standard

Lens and Color Selection

Color	Incandescent Suffix Code	LED Suffix Code	Catalog Number
Standard			
Red	**M2**	**RD**	**E34M2**
Red (EMER. STOP)	**M2N8**	**ED**	**E34M2N8**
Green	**M3**	**GD**	**E34M3**
Blue	**M6**	**LD**	**E34M6**
Amber	**M9**	**AD**	**E34M9**
White	**M5**	**WD**	**E34M5**
Clear	**M0**	**CD**	**E34M0**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① X = closed circuit, 0 = open circuit.

② To order different type or color lens, substitute the underlined characters with appropriate suffix code from Lens and Color Selection table above. Example: E34GDB79**M3**-1X. For LEDs with different voltages see ordering example on **Page V7-T1-281**.

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

- Three-position maintained
- Illuminated

Illuminated Push-Pull Unit

Three-Position Illuminated Momentary Push, Momentary Pull

Operator Position ①

Momentary—Pull	Maintained—Intermediate	Momentary—Push	Lamp	Type	Voltage	Contact Type	Mounting Location A	Mounting Location B	LED/Lamp Number	Red Standard Push-Pull Catalog Number ②
0 X	0 0	X 0	LED	Full voltage	24 Vac/Vdc	1NO			Bayonet base	**E34GHB97LRD24-1X**
					120 Vac	1NC				**E34GHB97LRD2A-1X**
				Trans-former	24 Vac					**E34GHB89LRD06-1X**
					120 Vac					**E34GHB63LRD06-1X**
X X	0 X	0 0		Full voltage	24 Vac/Vdc	1NC			Bayonet base	**E34GEB97LRD24-3X**
					120 Vac	1NC				**E34GEB97LRD2A-3X**
				Trans-former	24 Vac					**E34GEB89LRD06-3X**
					120 Vac					**E34GEB63LRD06-3X**
0 X	0 0	X 0	Incan-descent	Full voltage	24 Vac/Vdc	1NO			#757	**E34GHB79M2-1X**
				Resistor	120 Vac	1NC			120MB	**E34GHB80M2-1X**
				Trans-former	24 Vac				#755	**E34GHB89M2-1X**
					120 Vac					**E34GHB63M2-1X**
X X	0 X	0 0		Full voltage	24 Vac/Vdc	1NC			#757	**E34GEB79M2-3X**
				Resistor	120 Vac	1NC			120MB	**E34GEB80M2-3X**
				Trans-former	24 Vac				#755	**E34GEB89M2-3X**
					120 Vac					**E34GEB63M2-3X**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① X = closed circuit, O = open circuit.

② To order different type or color lens, substitute the underlined characters with appropriate suffix code from Lens and Color Selection table on the bottom of **Page V7-T1-275.** Example: E34GEB79**M3**-3X. For LEDs with different voltages see ordering example on **Page V7-T1-281**.

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

- Three-position—maintained push, momentary pull
- Illuminated

Illuminated Push-Pull Unit

Three-Position Illuminated Maintained Push, Momentary Pull

Operator Position ①

Momentary—Pull	Maintained—Intermediate	Maintained—Push	Lamp	Type	Voltage	Contact Type	Mounting Location A	Mounting Location B	LED/Lamp Number	Red Standard Push-Pull Catalog Number ②
X X	0 X	0 0	LED	Full voltage	24 Vac/Vdc	1NC	○ | ○		Bayonet base	**E34GFB97LRD24-3X**
					120 Vac	1NC		○ | ○		**E34GFB97LRD2A-3X**
				Trans-former	24 Vac					**E34GFB89LRD06-3X**
					120 Vac					**E34GFB63LRD06-3X**
X X	0 X	0 0	Incan-descent	Full voltage	24 Vac/Vdc	1NC	○ | ○		#757	**E34GFB79M2-3X**
				Resistor	120 Vac	1NC		○ | ○	120MB	**E34GFB80M2-3X**
				Trans-former	24 Vac				#755	**E34GFB89M2-3X**
					120 Vac					**E34GFB63M2-3X**

Vertical or Horizontal One-Hole Mounting ③

Potentiometers

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

Potentiometer with Knob and Standard Dial Plate—Linear Type ±10%

Potentiometer Ohms	Catalog Number
2 Watt (60V Max.) Single Potentiometer with Standard Aluminum Dial Plate ④⑤	
1000	**E34PDB1F1**
2500	**E34PDB1F2**
5000	**E34PDB1F5**
10000	**E34PDB1F10**
25000	**E34PDB1F25**
50000	**E34PDB1F50**
Operator only ⑥	**E34PDB1A0**
Alternative—black plastic large legend with standard markings	**E34LP99**

Dimensions, see **Page V7-T1-302**.

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① X = closed circuit, O = open circuit.

② To order different type or color lens, substitute the underlined characters with appropriate suffix code from table on the bottom of **Page V7-T1-275**.
Example: E34GFB79**M3**-3X. For LEDs with different voltages see ordering example on **Page V7-T1-281**.

③ Shown with standard aluminum dial plate.

④ Large dial plate with space for legend is available at no charge. To order, add suffix **36** to catalog number.
Example: E34PDB1F1**36**. To order separately, see footnote ⑤ below.

⑤ 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.

⑥ For use with commercially purchased potentiometers having shaft dimensions per dimension drawing on **Page V7-T1-254**.

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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:

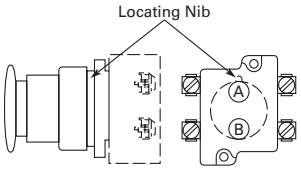
- **Maintained**—(Two-position). Maintains in the pulled or pushed position until manually actuated to the opposite mode.
- **Momentary**—(Three-position). Spring returns to an intermediate position when pulled or pushed and released.
- **Momentary Pull, Maintained Push**—(Three-position). Spring returns 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.

Application Guide

To assist in the selection of contact blocks, the sketch below 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



Two-Position Maint. Push-Pull ①

Push-Pull Operator Components

Type of Operator	Operator Position and Circuit Arrangement: Out—Pull Contact Block Mounting Location A		B	Intermediate A		B	In—Push A		B	Contact Block ②	Catalog Number
Two-Position Operator without Lens											
Maintained push-pull	0 X	or	0 X	No intermediate position			X 0	or	X 0	1NO 1NC	**E34GDB**
	0 X		0 X				X 0		X 0	2NO 2NC	
Three-Position Operator without Lens											
Momentary push-pull	0 X	or	0 X	0 0	or	0 X	X 0	or	0 0	1NO 1NC	**E34GEB** ②
	0 X		0 X	0 0		0 X	X 0		0 0	2NO 2NC	
Maintained push-momentary pull	0 X	or	0 X	0 0	or	0 X	X 0	or	0 0	1NO 1NC	**E34GFB** ②
	0 X		0 X	0 0		0 X	X 0		0 0	2NO 2NC	
Momentary push-pull	0 X	or	0 X	0 0	or	0 0	X 0	or	X 0	1NO 1NC	**E34GHB** ②
	0 X		0 X	0 0		0 0	X 0		X 0	2NO 2NC	

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

See Typical Applications on **Page V7-T1-213**.

① Shown without button on lens.

② Maximum of two blocks, four circuits. Special function contact blocks shown on **Page V7-T1-296** CANNOT be used with three-position push-pull operators E34GEB, E34GFB or E34GHB.

Push-Pull Light Units, Lenses and Buttons

Ordering Example with One Composite Number

Non-illuminated:
E34GDB + E34C2 + 10250T1 = **E34GDBC2-1X**

Incandescent:
E34GDB + 10250T79 + E34M2 + 10250T1 = **E34GDB79M2-1X**

LED:
E34GDB + 10250T97L + E34M2 + Voltage Code + 10250T1 = **E34GDB97LRD24-1X**

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 AC only 50/60 Hz	24		**10250T89L**
		120		**10250T63L**
		208		**10250T64L**
		240		**10250T65L**
		277		**10250T82L**
		380		**10250T66L**
		480		**10250T67L**
		600		**10250T68L**
Incandescent	Full voltage AC or DC	6	#755 #756 #757 #1828	**10250T69**
		12		**10250T70**
		24/28		**10250T79**
		32		**10250T83**
	Resistor AC or DC	120	120MB	**10250T80**
		240		**10250T81**
	Transformer AC only 50/60 Hz	24	#755	**10250T89**
		120		**10250T63**
		208		**10250T64**
		240		**10250T65**
		277		**10250T82**
		380		**10250T66**
		480		**10250T67**
		600		**10250T68**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① These units do not include lamps. Order LED separately to match lens color from chart on **Page V7-T1-281**

Buttons for Non-Illuminated Push-Pull Devices

Standard

Jumbo Mushroom Head

Color	Incandescent Suffix Code	Catalog Number
Standard Button		
Black	**C1**	**E34C1**
Red	**C2**	**E34C2**
Red (EMERG. STOP)	**C2N8**	**E34C2N8**
Green	**C3**	**E34C3**
Blue	**C6**	**E34C6**
Jumbo Mushroom Head		
Red ①	**J2**	**E34J2**
Red (EMERG. STOP)	**J2N8**	**E34J2N8**

Alternate Lenses for Illuminated Push-Pull Devices

E34M_

Color	Incandescent Suffix Code	LED Suffix Code ②	Catalog Number
Red	**M2**	**RD**	**E34M2**
Red (EMERG. STOP)	**M2N8**	**ED**	**E34M2N8**
Green	**M3**	**GD**	**E34M3**
Blue	**M6**	**LD**	**E34M6**
Amber	**M9**	**AD**	**E34M9**
White	**M5**	**WD**	**E34M5**
Clear	**M0**	—	**E34M0**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① Anodized aluminum may not be suitable for use on some corrosive applications.

② Suffix codes should only be used for assembling composite catalog numbers. To order lens, order by catalog number.

Standard LED Lamp

LED Selection

Voltage	Color	Catalog Number
6 Vac/Vdc suitable for use with transformers	Red	**E22LED006RN**
	Orange	**E22LED006ON**
	Yellow	**E22LED006YN**
	Green	**E22LED006GN**
	Blue	**E22LED006BN**
	White	**E22LED006WN**
12 Vac/Vdc	Red	**E22LED012RN**
	Orange	**E22LED012ON**
	Yellow	**E22LED012YN**
	Green	**E22LED012GN**
	Blue	**E22LED012BN**
	White	**E22LED012WN**
24 Vac/Vdc	Red	**E22LED024RN**
	Orange	**E22LED024ON**
	Yellow	**E22LED024YN**
	Green	**E22LED024GN**
	Blue	**E22LED024BN**
	White	**E22LED024WN**
48 Vac/Vdc	Red	**E22LED048RN**
	Orange	**E22LED048ON**
	Yellow	**E22LED048YN**
	Green	**E22LED048GN**
	Blue	**E22LED048BN**
	White	**E22LED048WN**
60 Vac/Vdc	Red	**E22LED060RN**
	Orange	**E22LED060ON**
	Yellow	**E22LED060YN**
	Green	**E22LED060GN**
	Blue	**E22LED060BN**
	White	**E22LED060WN**
120 Vac	Red	**E22LED120RA**
	Orange	**E22LED120OA**
	Yellow	**E22LED120YA**
	Green	**E22LED120GA**
	Blue	**E22LED120BA**
	White	**E22LED120WA**
120 Vdc	Red	**E22LED120RD**
	Orange	**E22LED120OD**
	Yellow	**E22LED120YD**
	Green	**E22LED120GD**
	Blue	**E22LED120BD**
	White	**E22LED120WD**

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Selector Switch Units

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

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

Two-Position Maint. Switch Knob

Two-Position Selector Switch

Operator Position ①		Operator Action ②	Contact Type	Mounting Location A	Mounting Location B	Cam Code	Non-Illuminated Black Knob Catalog Number ③	Non-Illuminated Black Lever Catalog Number ③	Illuminated—120V Transformer Red Knob Catalog Number ③	Illuminated—120V Transformer Red Lever Catalog Number ③
X	0	M M	1NC			1	**E34VFBK1-1X**	**E34VFBL1-1X**	**E34VFB120ER-1X**	**E34VFB120FR-1X**
0	X		1NO							

Three-Position Maint. Switch Knob

Three-Position Selector Switch

Operator Position ①			Operator Action ②	Contact Type	Mounting Location A	Mounting Location B	Cam Code	Non-Illuminated Black Knob Catalog Number ③	Non-Illuminated Black Lever Catalog Number ③	Illuminated—120V Transformer Red Knob Catalog Number ③	Illuminated—120V Transformer Red Lever Catalog Number ③
X	0	0	M	1NO			3	**E34VHBK1-2X**	**E34VHBL1-2X**	**E34VHB120TER-2X**	**E34VHB120TFR-2X**
0	0	X	M M	1NO							
X	0	0		1NO			3	**E34VHBK1-23X**	**E34VHBL1-23X**	**E34VHB120TER-23X**	**E34VHB120TFR-23X**
0	X	0		2NC (Series)							
0	0	X		1NO							

Four-Position Maint. Switch Lever

Four-Position Selector Switch

Operator Position ①				Operator Action ②	Contact Type	Mounting Location A	Mounting Location B	Cam Code	Non-Illuminated Black Knob Catalog Number ③	Non-Illuminated Black Lever Catalog Number ③	Illuminated—120V Transformer Red Knob Catalog Number ③	Illuminated—120V Transformer Red Lever Catalog Number ③
X	0	0	0	M M	1NC			7	**E34VTBK1-23X**	**E34VTBL1-23X**	**E34VRB120TER-23X**	**E34VRB120TFR-23X**
0	X	0	0	M M	1NO							
0	0	X	0		1NO							
0	0	0	X		1NC							

Color Selection, Non-Illuminated

Color	Code Letter	Color	Code Letter
Black	**1**	White	**5**
Red	**2**	Blue	**6**
Green	**3**	Gray	**7**
Yellow	**4**	Orange	**8**

Notes

For Light Unit Voltage Suffix and Knobs, Levers tables, see **Page V7-T1-288**.

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

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: E34VFBK**2**-X1.

Selector Switch Selection

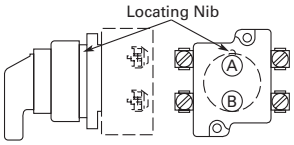
Cam and Contact Block Selection

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" chart (**Page V7-T1-285**) 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.

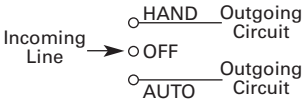
Contact Circuit Locations



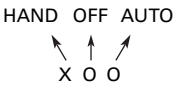
Systematic Approach

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:

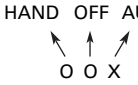


Step 2: "X-O" Pattern.
From the elementary diagram, you can construct an "X-O" diagram which describes when the contacts are to be closed (X) or open (O) in the various positions of the switch. The "X-O" for the **HAND** circuit looks like this:



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:

X O O
O O X

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.

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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.

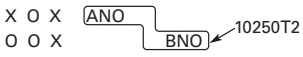
Now to make the cam selection, make a simple worksheet such as:

	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-T1-286**. For the example in step 4, you may want a three-position maintained black knob, cam 3—Catalog Number E34VHBK1.

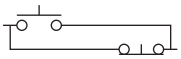
The Complete Switch:
E34VHBK1 with one 10250T2 or, for one composite catalog number, E34VHBK1-Y1 found on **Page V7-T1-283.**

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

Series Connection


Parallel Connection

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

Contact Blocks
For selection and number of available contact blocks per operator, see **Page V7-T1-295**.

Example Selection Table

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

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	NC	or	NC
2	0	X	NO	or	NO

Note
① Wired in series.

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 Mounting Location Top Plunger A	Operator with Cam Code #2 Mounting Location Bottom Plunger B	Operator with Cam Code #3 Mounting Location Top Plunger A	Operator with Cam Code #3 Mounting Location Bottom Plunger B
1	X	0	0	NO	NC	NO	
2	X	X	0		NC		NC
3	X	0	X	NO		NO	NO
4	0	0	X		NO		NO
5	0	X	X	NC	NO	NC	
6	0	X	0	NC		NC	NC

Four-Position Switch—Contact Block Selection

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

1

Selector Switch Operators

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

Two-Position Knob Selector Switch

Operators with Knob Assembled

Positions	Operator Action ①	Black Knob Selector Switch—Vertical Mounting ② Cam Code ③	Catalog Number ④
Two-position—60° throw	M M	1	**E34VFBK1**
	M S	1	**E34VEBK1**
Three-position—60° throw	M M M	2	**E34VGBK1**
		3	**E34VHBK1**
	S M M	2	**E34VJBK1**
		3	**E34VKBK1**
	S M S	2	**E34VLBK1**
		3	**E34VMBK1**
	M M S	2	**E34VNBK1**
		3	**E34VPBK1**
Four-position—40° throw	M M M M	7	**E34VTBK1**

Key Operators

Three-Position Keyed Selector Switch

Key Operators with Cam and Cap

Positions	Operator Action ①	Cam Code ③	Key Removal Positions ⑤	Vertical Mounting Catalog Number	Horiz. Mounting Catalog Number
Two-position—60° throw	M M	1	1, 2, 3	**E34KFB_**	**E34KFHB_**
	M S	1	2	**E34KEB_**	**E34KEHB_**
Three-position—60° throw	M M M	2	1–7	**E34KGB_**	**E34KGHB_**
		3		**E34KHB_**	**E34KHHB_**
	S M M	2	1, 4, 5	**E34KJB_**	**E34KJHB_**
		3		**E34KKB_**	**E34KKHB_**
	S M S	2	4	**E34KLB_**	**E34KLHB_**
		3		**E34KMB_**	**E34KMHB_**
	M M S	2	2, 4, 6	**E34KNB_**	**E34KNHB_**
		3		**E34KPB_**	**E34KPHB_**
Four-position—40° throw	M M M M	7	7	**E34KTB_**	**E34KTHB_**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

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

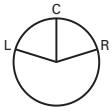
② Field convertible to horizontal mounting.

③ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and tables on **Pages V7-T1-283** to **V7-T1-285**.

④ For other colors of either the knob or lever, replace the underlined characters of the catalog number with the appropriate suffix code from Alternate Knob and Lever table on **Page V7-T1-287**. Example: E34VFB**L2**.

⑤ Choose key removal position required for application from table on **Page V7-T1-287**. Add key removal code number to listed catalog number. Example: E34KFB**2**.

Key Removal Positions ①



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

Dissimilar Locks and Keys

Listed operators have identical locks and keys (Key Code H661), Catalog Number **10250ED824**. For dissimilar lock and key combinations, see **Page V7-T1-222**.

E34K_

E34L_

E34A_

Alternate Knobs and Levers for Operators ②

Color	Knob Suffix Code	Knob Catalog Number	Lever Suffix Code	Lever Catalog Number	Lever Designed for Added Ingress Protection ③ Suffix Code	Lever Designed for Added Ingress Protection ③ Catalog Number
Black	**K1**	**E34K1**	**L1**	**E34L1**	**A1**	**E34A1**
Red	**K2**	**E34K2**	**L2**	**E34L2**	**A2**	**E34A2**
Green	**K3**	**E34K3**	**L3**	**E34L3**	**A3**	**E34A3**
Yellow	**K4**	**E34K4**	**L4**	**E34L4**	**A4**	**E34A4**
White	**K5**	**E34K5**	**L5**	**E34L5**	**A5**	**E34A5**
Blue	**K6**	**E34K6**	**L6**	**E34L6**	**A6**	**E34A6**
Gray	**K7**	**E34K7**	**L7**	**E34L7**	**A7**	**E34A7**
Orange	**K8**	**E34K8**	**L8**	**E34L8**	**A8**	**E34A8**

Notes

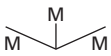
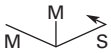
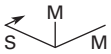
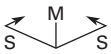
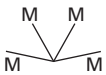
① Key removal in "spring return from" positions not recommended.
② See operators on **Page V7-T1-286**.
③ For use on maintained operators only.

1

Illuminated Selector Switch Operators

120 Vac Transformer Selector Switch, Cam 1

Operator without Knob or Lever

Positions	Operator Action	Transformer Type—50/60 Hz 6V #755 Lamp Catalog Number ③④		Full Voltage Type—AC or DC ① Lamps—#755, #757, #1835, 120MB ② Catalog Number ④	
Two-position—60° throw		**Cam Code 1** ⑤		**Cam Code 1** ⑤	
		E34VFB_		**E34SFB_**	
Three-position—60° throw		**Cam Code 2** ⑤	**Cam Code 3** ⑤	**Cam Code 2** ⑤	**Cam Code 3** ⑤
		E34VGB_	**E34VHB_**	**E34SGB_**	**E34SHB_**
		**E34VNB_** ⑥	**E34VPB_** ⑥	**E34SNB_** ⑦	**E34SPB_** ⑦
		**E34VJB_** ⑥	**E34VKB_** ⑥	**E34SJB_** ⑦	**E34SKB_** ⑦
		**E34VLB_**	**E34VMB_**	**E34SLB_**	**E34SMB_**
Four-position—40° throw		**E34VRB_**	—	**E34SRB_**	—

Knob

Lever

Knobs and Levers

Color ⑨	Knob Catalog Number and Code Number	Lever Catalog Number and Code Number
Red	**10250TER**	**10250TFR**
Green	**10250TEG**	**10250TFG**
Yellow	**10250TEA**	**10250TFA**
Blue	**10250TEL**	**10250TFL**
Clear	**10250TEC**	**10250TFC**
White	**10250TEW**	**10250TFW**
Amber	**10250TEM**	**10250TFM**

Light Unit Voltage Suffix

Add to operator Catalog Number listed in table above.

Type of Light Unit			
Transformer Type 50/60 Hz		Full Voltage Type AC or DC ①	
Voltage	Suffix Code	Voltage	Suffix Code
24	**024**	6	**06**
120	**120**	12	**12**
208	**208**	24	**24**
240	**240**	48	**48**
380	**380**	120	**120**
480	**480**	240 ⑧	**240**
600	**600**		

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Pages V7-T1-192** to **V7-T1-263**.

① Full voltage light units can be used at other than listed voltages by changing lamp. Replacement lamps are listed on **Page V7-T1-249**.
② 120MB lamps are used on both 120V and 240V operators.
③ Operator includes lens gasket and lens attachment screws.
④ Add suffix code for light unit voltage to listed catalog number from Light Unit Voltage Suffix table above.
Example: For 24V transformer type light unit, order E34VFB**024**.
⑤ For selection of the proper cam and contact block required to obtain a specific circuit sequence, see selection tables on **Pages V7-T1-283** to **V7-T1-285**.
⑥ 120 and 240V transformer only.
⑦ 120 full voltage only.
⑧ Resistor type. May generate excess heat if used in high density.
⑨ Amber, clear and white lenses have a black arrow (R). Red, green and blue lenses have a white arrow (R).

Accessories

Accessories

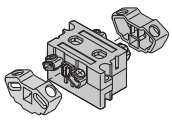
	Description	Catalog Number
E34TA2	**Padlocking Attachment for Flush Pushbutton Operators.** Permits locking NC contacts in open position with 1/4 in padlock. Will not lock NO contact.	**E34TA2**
10250TA_	**Flexible Weather Resistant Boot** for use with flush pushbutton operators.	
	Clear	**10250TA46**
	Black	**10250TA47**
	Red	**10250TA48**
	Green	**10250TA49**
	Flexible Weather Resistant Boot for use with button operators (extended buttons preferred).	
	Black	**10250TA3**
	Red	**10250TA4** ①
	Green	**10250TA10**
	Clear	**10250TA85**
	Transparent Boot for regular, illuminated pushbutton operators and PresTest.	**10250TA25** ②
E34TA3_	**Special Retaining Nut**—to accommodate thick panel.	
	Indicating light	**E34TA30**
	PresTest, pushbuttons and selector switches	**E34TA31**
E34TA6	**Shroud for Mushroom Head Operator**—prevents accidental operation. (Not for push-pull operators.)	**E34TA6**
E34TA12	**Extended Retaining Nut**—replaces standard nut and provides guard for flush type pushbutton operators.	**E34TA12**
E34TA15	**Guard for illuminated pushbutton**	**E34TA15**
E34TA11	**Padlocking Attachment** for non-illuminated knob selector switches—accommodates up to five, 1/4 in padlocks.	**E34TA11**

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
E34TK3	**Thrust Washer**—To meet Ford Motor Company mounting specifications.	**E34TK3**
10250TA7_	**Contact Block Terminal Jumps**—Available in multiples of 100 only.	
	Terminal to terminal—within block (short):	
	100 per package	**10250TA70**
	1000 per package	**10250TA70-2**
	Terminal to terminal—block to block (long):	
	100 per package	**10250TA71**
	1000 per package	**10250TA71-2**
10250TMT8	**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**—Internal Form C relay suitable for AC applications. One unit required for each operator in master test circuit.	
	24 Vac	**10250TFL2**
	120 Vac	**10250TFL1**
E22CW	**Panel Mounting Nut Wrench**—E22, E30, E34 and octagonal 10250T.	**E22CW**
10250TA101 	**Fingerproof Shroud**—10 per package Fits new style contact blocks and light units.	**10250TA101**

Options

Legend Plates ①

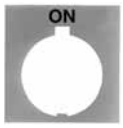
Field Color

Legend plates can be supplied printed on black, red, silver or white field. To order legend printed on a color other than indicated—add suffix code to the end of the catalog number as follows:

"R" for Red field;
"W" for White field; or
"S" for Silver field.

Example: E34SP26**R**—Standard plate with red field marked OPEN.

Standard



Jumbo

For Pushbutton Operators and Indicating Lights

Legend	Color of Field	Standard ② Catalog Number	Jumbo Catalog Number	Legend	Color of Field	Standard ② Catalog Number	Jumbo Catalog Number
Letters on Legend Plates Below are 3/16 in High							
CLAMP	Black	**E34SP90**	**E34LP90**	OFF	Red	**E34SP24**	**E34LP24**
CLOSE		**E34SP73**	**E34LP73**	ON	Black	**E34SP25**	**E34LP25**
DOWN		**E34SP74**	**E34LP74**	OPEN		**E34SP26**	**E34LP26**
EMERG. STOP	Red	**E34SP13**	**E34LP13**	OUT		**E34SP27**	**E34LP27**
FAST	Black	**E34SP75**	**E34LP75**	POWER ON		**E34SP80**	**E34LP80**
FASTER		**E34SP87**	**E34LP87**	RAISE		**E34SP28**	**E34LP28**
FEEDER ON		**E34SP94**	**E34LP94**	READY		**E34SP86**	**E34LP86**
FEEDER OFF		**E34SP95**	**E34LP95**	RESET		**E34SP29**	**E34LP29**
FORWARD		**E34SP15**	**E34LP15**	REVERSE		**E34SP30**	**E34LP30**
HIGH		**E34SP16**	**E34LP16**	RUN		**E34SP31**	**E34LP31**
IN		**E34SP17**	**E34LP17**	SAFE		**E34SP85**	**E34LP85**
INCH		**E34SP18**	**E34LP18**	SLOW		**E34SP32**	**E34LP32**
JOG		**E34SP19**	**E34LP19**	SLOWER		**E34SP88**	**E34LP88**
JOG FOR.		**E34SP20**	**E34LP20**	START		**E34SP33**	**E34LP33**
JOG REV.		**E34SP21**	**E34LP21**	STOP	Red	**E34SP34**	**E34LP34**
LOW		**E34SP22**	**E34LP22**	TEST	Black	**E34SP83**	**E34LP83**
LOWER		**E34SP23**	**E34LP23**	TRANSFER		**E34SP93**	**E34LP93**
LUBE-FAIL		**E34SP92**	**E34LP92**	TRIP		**E34SP84**	**E34LP84**
MOTOR RUN		**E34SP81**	**E34LP81**	UNCLAMP		**E34SP91**	**E34LP91**
MOTOR STOP		**E34SP82**	**E34LP82**	UP		**E34SP35**	**E34LP35**

Blank Plastic Legend Plates—Square ③

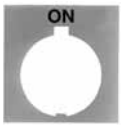
Color Lettering	Field Side 1	Side 2	Standard Catalog Number	Jumbo Catalog Number	Extra Large Catalog Number
Black	White	Silver	**10250TSP76**	**10250TLP76**	**10250TEP76**
White	Red	Black	**10250TSP77**	**10250TLP77**	**10250TEP77**

Notes

① For dimensions, see **Page V7-T1-268**.
② 3/32 in high lettering.
③ Legend plates with non-standard markings or aluminum legend plates see 10250T listing on **Page V7-T1-242**.

1

Standard



Jumbo

For Selector Switch Operators

Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number
Two-Position—3/16 in High Lettering			
FOR. REV.	Black	**E34SP38**	**E34LP38**
HAND AUTO		**E34SP39**	**E34LP39**
HIGH LOW		**E34SP40**	**E34LP40**
JOG RUN		**E34SP41**	**E34LP41**
MAN. AUTO		**E34SP67**	**E34LP67**
OFF ON		**E34SP42**	**E34LP42**
OPEN CLOSE		**E34SP43**	**E34LP43**
RUN JOG		**E34SP44**	**E34LP44**
SAFE RUN		**E34SP45**	**E34LP45**
START JOG		**E34SP46**	**E34LP46**
START STOP		**E34SP47**	**E34LP47**
UP DOWN		**E34SP48**	**E34LP48**

Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number
Three-Position—3/16 in High Lettering			
AUTO OFF HAND	Black	**E34SP49**	**E34LP49**
FOR. OFF REV.		**E34SP50**	**E34LP50**
FOR. SAFE REV.		**E34SP69**	**E34LP69**
HAND OFF AUTO		**E34SP51**	**E34LP51**
MAN. OFF AUTO		**E34SP68**	**E34LP68**
OPEN OFF CLOSE		**E34SP53**	**E34LP53**
RUN SAFE JOG		**E34SP70**	**E34LP70**
UP OFF DOWN		**E34SP54**	**E34LP54**
ON STOP SAFE		**E34SP71**	**E34LP71**

For Push-Pull Units

Legend	Color of Field	Standard ① Catalog Number	Jumbo ② Catalog Number
PULL ON/PUSH OFF	Black	**E34PP5**	**E34R5**
PULL OPEN/PUSH CLOSE	Black	**E34PP8**	**E34R8**
PULL UP/PUSH DOWN	Black	**E34PP11**	**E34R11**

Notes

① 3/32 in (2.4 mm) high lettering.
② 1/8 in (3.2 mm) high lettering.

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** ②③ **NEMA 4, 4X, 12, 13**		
	1	**E34N1**	**E34N11**
	2	**E34N2**	**E34N12**
	3	**E34N3**	**E34N13**
	4	—	**E34N14**
Polyester Enclosure	**Polyester—In-Line NEMA 3, 4X, 12**		
	1	—	**E34N51**
	2	—	**E34N52**
	3	—	**E34N53**
	4	—	**E34N54**
Stainless Steel Enclosure	**Stainless Steel** ④ **—In-Line NEMA 4, 4X, 12**		
	1	—	**10250TN33**
	2	—	**10250TN34**
	3	—	**10250TN35**
	4	—	**10250TN36**

Dimensions, see **Page V7-T1-302**.

Mounting Instructions

These E34 Die Cast Enclosures feature a corrosion resistant coating identical to finish on the E34 operators except gray in color. Not for use in ultraviolet light applications.

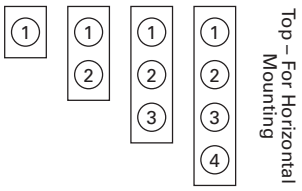
One and Two Contact Block Depth Enclosures

One Contact Block Depth Enclosure

Two Contact Block Depth Enclosure

Enclosure Layouts

Top – For Vertical Mounting



Top – For Horizontal Mounting

Notes

① For spacing increments, see **Page V7-T1-294**.
② All die cast enclosures can be converted to base mounting of contact blocks with spacers 10250TA22 or 10250TA23. See listing on **Page V7-T1-237.**
③ When used with E30 pushbuttons, only the one element enclosure can be used.
④ 14 gauge, type 304.

1

Die Cast and Stainless Steel—Flush Mount, Covers Only ①

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	**E34F11**	**E34F1**
2	**E34F12**	**E34F2**
3	**E34F13**	**E34F3**
4	**E34F14**	**E34F4**
In-Line Stainless Steel Flush Plates ②		
	With Pullbox	**Without Pullbox**
1	**10250TS10**	**10250TS1**
2	**10250TS11**	**10250TS2**
3	**10250TS12**	**10250TS3**
4	**10250TS14**	**10250TS4**

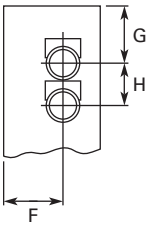
Dimensions, see **Page V7-T1-303**.

Spacing Increments

Approximate Dimensions in Inches (mm)

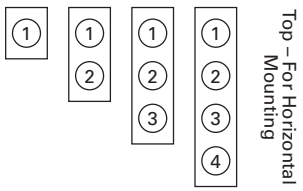
Type	F	G	H
Die cast	2.44 (62.0)	2.5 (63.5)	1.88 (47.8)
Polyester	1.88 (47.8)	Min. 2.13 (54.1)	2.25 (57.2)
Stainless steel	1.69 (42.9)	Min. 1.73 (43.9)	2.25 (57.2)

Spacing Increments for Enclosures



Enclosure Layouts

Top – For Vertical Mounting



Notes

① These E34 die cast covers feature a corrosion resistant coating identical to the finish on the E34 operators except gray in color.

② 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"
- Black (opaque) or amber (translucent) housings
- Pressure plate or spade terminals
- Fingerproof shrouds (for pressure terminals only)

Logic Level Contact Blocks

- UL A600/P600 rated
- Black plungers
- Inert palladium knife-blade contacts
- Black (opaque) housings
- Pressure plate or spade terminals
- Fingerproof shrouds not available

Special Function Contact Blocks

- UL A600/P600 rated
- Black plungers
- Silver contact tips with "reliability nibs"
- Black (opaque) housings
- Pressure plate terminals only
- Fingerproof shrouds not available

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

1

10250T1

Contact Blocks

Symbol	Circuit	Description ①	Standard Pressure Terminal Catalog Number	Standard Spade Terminal ② Catalog Number	Logic Level Pressure Terminal Catalog Number	Logic Level Spade Terminal ② Catalog Number
Blank No Plunger	1NC	Stack up to six blocks (six circuits) unless otherwise noted.	**10250T51**	**10250T59**	**10250T51E**	**10250T59E**
Blank No Plunger	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						
Blank No Plunger	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.

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**
	NO-NC	Stack up to six blocks (12 circuits) unless otherwise noted.	**10250T1P**	**10250T1EP**
	2NC	Stack up to six blocks (12 circuits) unless otherwise noted.	**10250T3P**	**10250T3EP**
	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
	ECNO-NC	Early closing NO and standard NC. Stack up to six blocks unless otherwise noted.	**10250T47P** ③④	**10250T47EP** ④
	ECNO-NO	Early closing NO and standard NO. Stack up to four blocks unless otherwise noted.	**10250T57P** ③④	**10250T57EP** ④
	2LONC	Two late opening NC contacts. Stack up to six blocks unless otherwise noted.	**10250T45P** ④	**10250T45EP** ④
	LONC-ECNO	Overlapping contacts. Stack up to four blocks unless otherwise noted.	**10250T55P** ③④	**10250T55EP** ④

Replacement Parts

Replacement Lamps—For E34 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**

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.

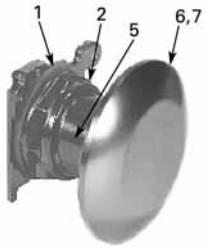
② To order contact blocks with translucent amber housing, change suffix P to **CP** in catalog number, e.g., 10250T51**CP**.

③ ECNO contact blocks are not suitable for use with two-position joysticks or when operators are used with padlock attachments.

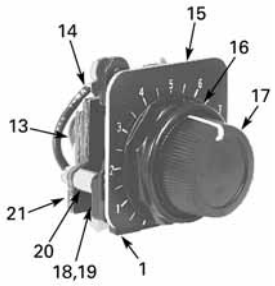
④ Special function contact blocks are not suitable for use with roto-push operators, three-position push-pull operators, or four-position selector switches.

Flush Head Pushbutton Operator

Mushroom Head Pushbutton Operator



Jumbo Mushroom Head Operator

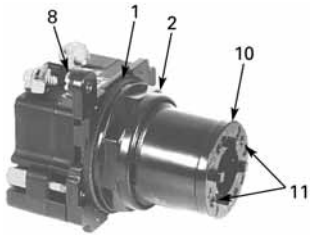


Potentiometers

Illuminated Pushbutton Operator

Transformer Type Indicating Light

Knob-Operated Selector Switch Operator



Full Voltage, Resistor and Transformer Type Illuminated Selector Switch

E34 Style Operator Replacement Parts

Item No.	Description	No. Req.	Part Number
1	Gasket	1	**16-1548**
2	Mounting nut	1	**15-1530-4**
3	Set screw (#6-32 x 0.250 in long hollow hex)	2	**11-2014**
4	Mushroom head button (includes [2] item 5)	1	**As Req. Below**
	Black	—	**53-1317**
	Red	—	**53-1317-2**
	Yellow	—	**53-1317-3**
	Green	—	**53-1317-4**
	Blue	—	**53-1317-22**
5	Set screw (#10-32 x 0.250 in long hollow hex)	2	**11-544**
6	Jumbo mushroom head button (aluminum—includes [2] item 5)	1	**As Req. Below**
	Red	—	**53-1317-9**
	Black	—	**53-1317-10**
	Yellow	—	**53-1317-11**
	Green	—	**53-1317-12**
7	Jumbo mushroom head button (aluminum—red EMERG. STOP) does not include item 5	1	**53-1349-18**
8	Mounting screw (#6-32 x 0.710 in long)	2	**10250TA79**
	Washer	2	**16-2038**
9	Terminal screw and lug (captive)	Req.	**80-5502**
10	Gasket (supplied with basic unit)	1	**32-803**
11	Round head screw (#4-40 x 0.344 in long) (supplied with basic unit)	2	**11-4553**

Item No.	Description	No. Req.	Part Number
12	Mounting screw	2	**11-1632**
13	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**
14	Connector (includes screw and lug)	2	**25-1851**
15	Indicating plate	1	**As Req. Above**
	Standard size (without legend)	—	**30-4460**
	Large size (specify legend)	—	**10250TR30**
16	Retaining nut	1	**15-1547-3**
17	Knob	1	**53-1314**
	Socket set screw (#6-32 x 0.250 in long)	1	**11-2014**
18	Coupling	1	**11-2014**
			29-3749-2
19	Set screw (#6-32 x 0.188 in long)	1	**11-1199**
20	Spacer	2	**56-1066-18**
21	Connector (includes screw and lug)	1	**25-1851-2**
22	Mounting nut	1	**15-1938-2**

Technical Data and Specifications

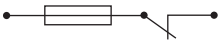
Mechanical Ratings

Description	Specification
Frequency of Operation	
All pushbuttons	6000 operations/hr.
Key and lever selector switches	3000 operations/hr.
Auto-latch devices	1200 operations/hr.
Life	
Pushbuttons	10 x 10^6 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	210 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 60947-5-1
Bulbs—average life:	
Transformer type	20,000 hrs.
Resistor/direct voltage type	2500 hrs. minimum at rated V
LED	60,000 to 100,000 hrs.

Electrical Ratings

Description	Specification
Insulation	U_i = 660 Vac or Vdc
Thermal	I_{th} = 10A
Short Circuit Coordination to IEC/EN 60947-5-1	
Rated conditional short circuit current	1 kA
Fuse type 	GE power controls TIA 10, red spot type gG, 10A, 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 x 10^6 operations
5A	250V pf 0.4—1 x 10^6 operations
2A	600V pf 0.4—1 x 10^6 operations
Switching capacity	
AC 15 rated make/break (11 x I_e at 1.1 x U_e)	
6A	120V pf 0.3
4A	240V pf 0.3
2A	660V pf 0.3
DC13 rated make/break (1.1 x I_e at 1.1 x U_e)	
1.0A	125V L/R ≥0.95 at 300 ms
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
Low voltage switching	Conical shaped points or "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, Vac/Vdc.
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.

Electrical Ratings—Contact Block

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

	50 Vac or 60 H				Vdc		
Description	**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

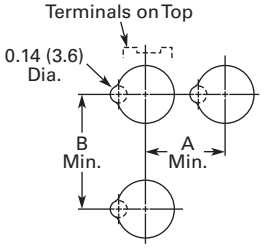
Panel Thickness

- 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

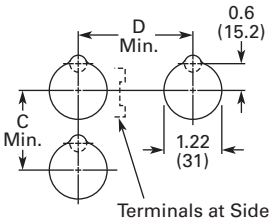
Mounting Matrix

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

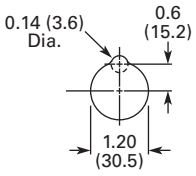


Vertical Mounting

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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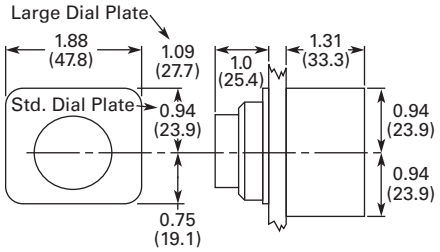
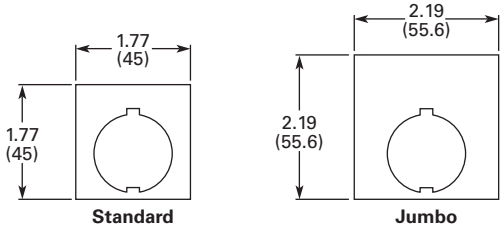
Dimensions

Approximate Dimensions in Inches (mm)

Potentiometer

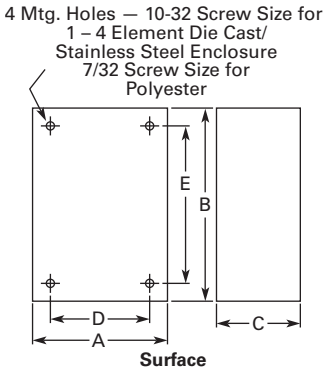


Legend Plates



Surface Mounting

Die Cast, Polyester and Stainless Steel Enclosures



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)	4.00 (101.6)	3.00 (76.3) ①	2.69 (68.3)	3.25 (82.6)	3/4
2		3.88 (98.6)	5.88 (149.4)	3.00 (76.3) ①	2.69 (68.3)	5.13 (130.3)	
3		3.88 (98.6)	7.75 (196.9)	3.00 (76.3) ①	2.69 (68.3)	7.00 (177.8)	1
4		3.88 (98.6)	9.63 (244.6)	3.00 (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

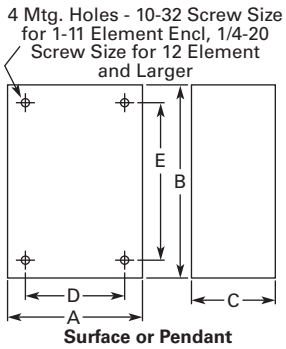
① Depth given is for two contact block deep stations. One contact block deep stations subtract 3/4 in (19.1 mm).

② No conduit entrance holes provided. Drill as required.

Approximate Dimensions in Inches (mm)

Flush Mounting

Die Cast and Stainless Steel Covers Only



Surface or Pendant

Number of Elements	Wide A	High B	Deep C	Mounting D	E
Die Cast					
1	3.88 (98.6)	4.00 (101.6)	0.25 (6.4) ①	3.50 (88.9)	3.63 (92.2)
2	3.88 (98.6)	5.88 (149.4)	0.25 (6.4) ①	3.50 (88.9)	5.50 (139.7)
3	3.88 (98.6)	7.75 (196.9)	0.25 (6.4) ①	3.50 (88.9)	6.00 (152.4)
4	3.88 (98.6)	9.63 (244.6)	0.25 (6.4) ①	3.50 (88.9)	9.25 (235.0)
Stainless Steel					
1	5.00 (127.0)	5.00 (127.0)	2.50 (63.5) ②	3.25 (82.6)	1.88 (47.8)
2	5.00 (127.0)	6.88 (174.8)	2.50 (63.5) ②	3.25 (82.6)	3.63 (92.2)
3	5.00 (127.0)	8.63 (219.2)	2.50 (63.5) ②	3.25 (82.6)	5.50 (139.7)
4	5.00 (127.0)	10.50 (266.7)	2.50 (63.5) ②	3.25 (82.6)	7.25 (184.2)

Notes

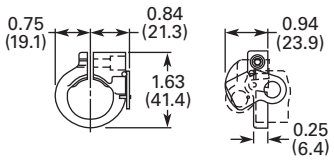
① Depth given is for flat cover. Deep cover is 3/4 in (19.1 mm) deeper.

② Depth given includes pull box.

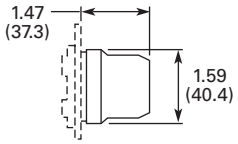
1

Approximate Dimensions in Inches (mm)

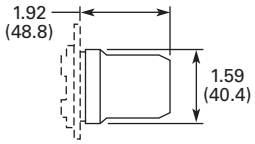
Padlocking Attachment for Flush Pushbutton Operators



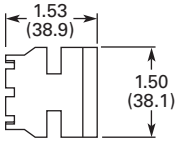
Flexible Weather Resistant Boot



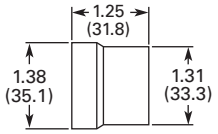
Transparent Boot



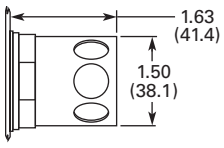
Shroud for Mushroom Head Operator



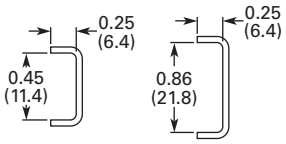
Extended Retaining Nut



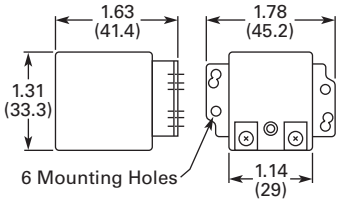
Guard for Illuminated Pushbutton



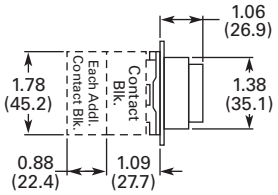
Contact Block Terminal Jumps



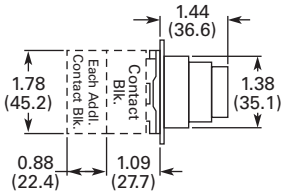
Master Test Module and Flasher Module



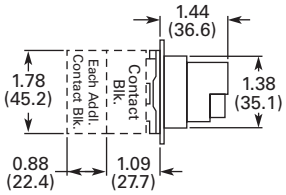
Flush Pushbutton



Extended Pushbutton

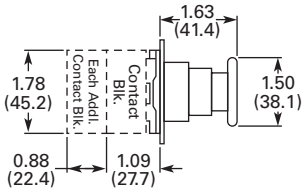


Half Shroud Pushbutton

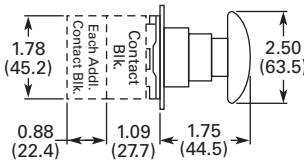


Approximate Dimensions in Inches (mm)

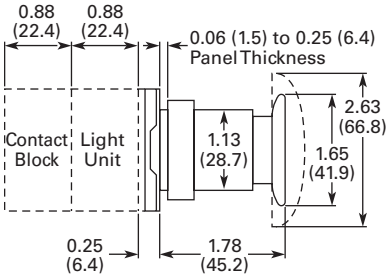
Mushroom Pushbutton



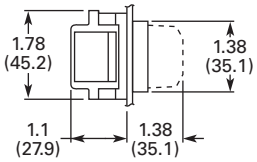
Jumbo Mushroom Pushbutton



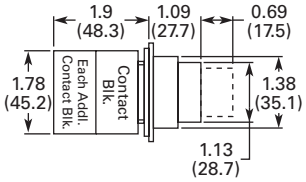
Push-Pull Switch



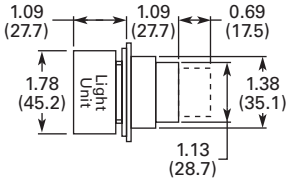
Indicating Light



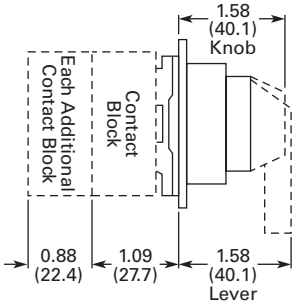
PresTest Indicating Light



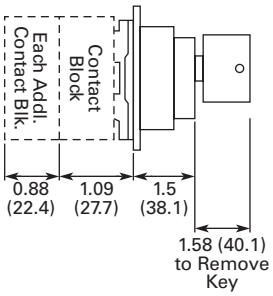
Illuminated Pushbutton



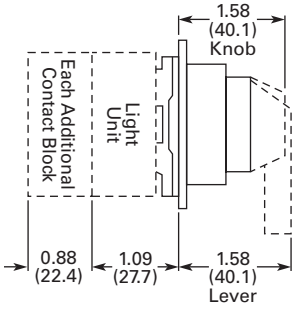
Selector Switch



Key Selector Switch



Illuminated Selector Switch



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30.5 mm Watertight/Oiltight—HT800

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Product Description

The HT800 Series from Eaton's Electrical Sector is a family of 30.5 mm pushbutton devices which includes momentary, illuminated and mushroom head pushbuttons, selector switches, indicating lights and push-pull switches. The HT800 devices have a familiar appearance found in most industrial applications and are suitable for replacement of several other manufacturers' 30.5 mm pushbutton devices.

Features

- Anodized aluminum mounting rings
- Watertight double V-gasket seals
- Extended height bulbs
- Transparent housing contact blocks
- Color-coded contact blocks
- Gold-plated contacts (on low voltage contact block)
- Reliability ridge on movable contact
- Stackable screw-mounted contact blocks
- Contact blocks can be mounted in left/right or top/bottom positions
- Standard NC contact opens before NO contact closes (break before make operation)
- Bright and long lasting LED indicating lights in six colors
- Field convertible maintained selector switches—from two- to three-position and vice versa
- Field selectable knob/lever mounting positions—at any 22.5° increment

Benefits

- Corrosion resistant NEMA 4X finish
- Watertight and oiltight NEMA 4, 13 ingress protection
- Increased side illumination of indicating lights and illuminated pushbuttons
- Easy visual inspection of contact conditions
- Easily identifiable NO (white) or NC (black) contact blocks
- Gold-plated contacts suitable for logic level circuits
- Reliability ridge penetrates contamination buildup on stationary contacts
- Left/right or top/bottom mounted contact blocks allow correct positioning in retrofit applications
- All-purpose selector switches are convertible and can rotate in 22.5° increments to suit panel layouts

Standards and Certifications

- UL508 per File No. E131568
- CSA C22.2 No. 14 per File No. LR68551

Ingress Protection

- UL (NEMA) Type 1, 2, 3, 3R, 4, 4X, 12 and 13 when mounted in similarly rated enclosures

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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.

HT800 Pushbuttons, Push-Pulls and Indicating Lights

HT8 GB R AB T1

Style
Pushbuttons
AA = Flush
AB = Extended
AE = Mushroom head
Illuminated Pushbuttons
GB = Illuminated PB
Push-Pull Operators
CB = Two-position, maintained
Indicating Lights
HF = Full voltage/resistor type
HB = Transformer type
Push-to-Test Operators
GT = All types

Button Color
G = Green
H = Black
R = Red
Lens Color
A = Amber/Orange
B = Blue
C = Clear
G = Green
R = Red
W = White
Y = Yellow

Contact Block Location (viewed from rear) ①	
Left Side	**Right Side**
A = NO	**A5** = NO
A2 = 2NO	**A6** = 2NO
B1 = NC	**B** = NC
B2 = 2NC	**B6** = 2NC
C = NOEM	**C5** = NOEM
C2 = 2 NOEM	**C6** = 2 NOEM
D1 = NCLB	**D** = NCLB
D2 = 2NCLB	**D6** = 2NCLB
E1 = NOEM-NCLB	**E5** = NOEM-NCLB
F1 = NO and NC	**Q1** = NO and NC
F4 = 1NO-1NC	

Light Unit Type/Voltage
F3 = 24V FV, LED
F7 = 120V FV, LED
L1 = 120V transformer, LED
T1 = 120V transformer, incandescent
V3 = 24V FV, incandescent
V7 = 120V res., incandescent

HT800 Selector Switch

HT8 JA H 3A F1Q1

Operator
JA = Two-pos., knob, maint.
JB = Three-pos., knob, maint.
JC = Four-pos., knob, maint.
JD = Two-pos., lever, maint.
JE = Three-pos., lever, maint.
JF = Four-pos., lever, maint.
JK = Two-pos., knob, spr. rtn., left
JL = Two-pos., lever, spr. rtn., left
JN = Two-pos., knob, spr. rtn., right
JP = Two-pos., lever, spr. rtn., right
JR = Three-pos., knob, spr. rtn., left
JS = Three-pos., lever, spr. rtn., left
JU = Three-pos., knob, spr. rtn., right
JV = Three-pos., lever, spr. rtn., right
JX = Three-pos., knob, spr. rtn., both
JY = Three-pos., lever, spr. rtn., both
LN = Four-pos., knob, spr. rtn., pos 1 to 2
LP = Four-pos., lever, spr. rtn., pos 1 to 2
LR = Four-pos., knob, spr. rtn., pos 4 to 3
LS = Four-pos., lever, spr. rtn., pos 4 to 3

Switch Color
H = Black

Cam Location/Type
1D = For all three-pos.
3A = For all two-pos.
8E = For all four-pos.

Contact Block Location (viewed from rear) ②	
Left Side	**Right Side**
A = NO	**A5** = NO
A2 = 2NO	**A6** = 2NO
B1 = NC	**B** = NC
B2 = 2NC	**B6** = 2NC
C = NOEM	**C5** = NOEM
C2 = 2 NOEM	**C6** = 2 NOEM
D1 = NCLB	**D** = NCLB
D2 = 2NCLB	**D6** = 2NCLB
E1 = NOEM-NCLB	**E5** = NOEM-NCLB
F1 = NO and NC	**Q1** = NO and NC
F4 = 1NO-1NC	

Notes

① Maximum of four contact blocks per side or a total of eight contact blocks recommended.

② Maximum of two contact blocks per side or a total of four contacts blocks recommended.

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Product Selection

Momentary Pushbutton Units, Non-Illuminated

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

- Flush, extended or 40 mm mushroom head operators

HT800 Pushbuttons

HT800 Pushbuttons—Point-of-Purchase Units

Description	Catalog Number
Two-position maintained selector switch 1NO/1NC contact block, three square legend plates: OFF ON, MAN. AUTO, UP DOWN	**HT8JAH3AAB-POP**
Three-position maintained selector switch, black knob, 1NO/1NC contact block, three square legend plates: HAND OFF AUTO, FOR. OFF REV., OPEN OFF CLOSE	**HT8JBH1DAB-POP**
Three-position selector switch, spring return from left and right, black knob, 1NO/1NC contact block, three square legend plates: UP OFF DOWN, FOR OFF REV., OPEN OFF CLOSE	**HT8JXH1DAB-POP**
Red push-pull emergency stop, 1NO/1NC contact block, three square legend plates: STOP, EMERG. STOP, OFF	**HT8CBRAB-POP**
Illuminated push-pull maintained red pushbutton, 120V full voltage low profile LED, three square legend plates: STOP, EMERG. STOP, OFF	**HT8FBRABFL7-POP**
Illuminated push-pull maintained red pushbutton, 24V full voltage low profile LED, three square legend plates: STOP, EMERG. STOP, OFF	**HT8FBRABFL3-POP**
Green flush pushbutton, 1NO/1NC contact block, three square legend plates: START, ON, RUN	**HT8AAGAB-POP**
Black flush pushbutton, 1NO/1NC contact block, three square legend plates: RESET, JOG, OPEN	**HT8AAHAB-POP**
Red flush pushbutton, 1NO/1NC contact block, three square legend plates: STOP, CLOSE, OFF	**HT8AARAB-POP**
Red extended pushbutton, 1NO/1NC contact block, three square legend plates: STOP, CLOSE, OFF	**HT8ABRAB-POP**
Black extended pushbutton, 1NO/1NC contact block, three square legend plates: RESET, JOG, OPEN	**HT8ABHAB-POP**
Illuminated green pushbutton, 120V full voltage incandescent, 1NO/1NC contact block, three square legend plates: START, ON, RUN	**HT8GBGABV7-POP**
Illuminated green pushbutton, 24V full voltage incandescent, 1NO/1NC contact block, three square legend plates: START, ON, RUN	**HT8GBGABV3-POP**

Flush Head Operator

Extended Head Operator

40 mm Mushroom Head Operator

Momentary Contact Pushbutton Units, Non-Illuminated

Contact Type	Button Color	Flush Head Catalog Number	Extended Head Catalog Number	Mushroom Head (40 mm) Catalog Number
No contact	Black	**HT8AAH**	**HT8ABH**	**HT8AEH**
	Red	**HT8AAR**	**HT8ABR**	**HT8AER**
	Green	**HT8AAG**	**HT8ABG**	**HT8AEG**
1NO	Black	**HT8AAHA**	**HT8ABHA**	**HT8AEHA**
	Red	**HT8AARA**	**HT8ABRA**	**HT8AERA**
	Green	**HT8AAGA**	**HT8ABGA**	**HT8AEGA**
1NC	Black	**HT8AAHB**	**HT8ABHB**	**HT8AEHB**
	Red	**HT8AARB**	**HT8ABRB**	**HT8AERB**
	Green	**HT8AAGB**	**HT8ABGB**	**HT8AEGB**
1NO-1NC	Black	**HT8AAHAB**	**HT8ABHAB**	**HT8AEHAB**
	Red	**HT8AARAB**	**HT8ABRAB**	**HT8AERAB**
	Green	**HT8AAGAB**	**HT8ABGAB**	**HT8AEGAB**
2NO-2NC	Black	**HT8AAHF1Q1**	**HT8ABHF1Q1**	**HT8AEHF1Q1**
	Red	**HT8AARF1Q1**	**HT8ABRF1Q1**	**HT8AERF1Q1**
	Green	**HT8AAGF1Q1**	**HT8ABGF1Q1**	**HT8AEGF1Q1**

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Illuminated Pushbutton Units

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

- Incandescent or LED
- Full voltage or transformer type
- 24V and 120V

Illuminated Pushbutton Operator

Illuminated Pushbuttons

Type	Volts	Lens Color	Operator Only Catalog Number	1NO Catalog Number	1NC Catalog Number	1NO-1NC Catalog Number	2NO-2NC Catalog Number
Incandescent Lamp							
Full voltage	120 Vac/Vdc	No lens ①	**HT8GBFV**	—	—	—	—
		Red	**HT8GBRV7**	**HT8GBRAV7**	**HT8GBRBV7**	**HT8GBRABV7**	**HT8GBRF1Q1V7**
		Green	**HT8GBGV7**	**HT8GBGAV7**	**HT8GBGBV7**	**HT8GBGABV7**	**HT8GBGF1Q1V7**
		Amber	**HT8GBAV7**	**HT8GBAAV7**	**HT8GBABV7**	**HT8GBAABV7**	**HT8GBAF1Q1V7**
		Clear	**HT8GBCV7**	**HT8GBCAV7**	**HT8GBCBV7**	**HT8GBCABV7**	**HT8GBCF1Q1V7**
		White	**HT8GBWV7**	**HT8GBWAV7**	**HT8GBWBV7**	**HT8GBWABV7**	**HT8GBWF1Q1V7**
		Yellow	**HT8GBYV7**	**HT8GBYAV7**	**HT8GBYBV7**	**HT8GBYABV7**	**HT8GBYF1Q1V7**
		Blue	**HT8GBBV7**	**HT8GBBAV7**	**HT8GBBBV7**	**HT8GBBABV7**	**HT8GBBF1Q1V7**
	24 Vac/Vdc	No lens ①	**HT8GBFV**	—	—	—	—
		Red	**HT8GBRV3**	**HT8GBRAV3**	**HT8GBRBV3**	**HT8GBRABV3**	**HT8GBRF1Q1V3**
		Green	**HT8GBGV3**	**HT8GBGAV3**	**HT8GBGBV3**	**HT8GBGABV3**	**HT8GBGF1Q1V3**
		Amber	**HT8GBAV3**	**HT8GBAAV3**	**HT8GBABV3**	**HT8GBAABV3**	**HT8GBAF1Q1V3**
		Clear	**HT8GBCV3**	**HT8GBCAV3**	**HT8GBCBV3**	**HT8GBCABV3**	**HT8GBCF1Q1V3**
		White	**HT8GBWV3**	**HT8GBWAV3**	**HT8GBWBV3**	**HT8GBWABV3**	**HT8GBWF1Q1V3**
		Yellow	**HT8GBYV3**	**HT8GBYAV3**	**HT8GBYBV3**	**HT8GBYABV3**	**HT8GBYF1Q1V3**
		Blue	**HT8GBBV3**	**HT8GBBAV3**	**HT8GBBBV3**	**HT8GBBABV3**	**HT8GBBF1Q1V3**
Transformer	120 Vac	No lens ①	**HT8GBT1**	—	—	—	—
		Red	**HT8GBRT1**	**HT8GBRAT1**	**HT8GBRBT1**	**HT8GBRABT1**	**HT8GBRF1Q1T1**
		Green	**HT8GBGT1**	**HT8GBGAT1**	**HT8GBGBT1**	**HT8GBGABT1**	**HT8GBGF1Q1T1**
		Amber	**HT8GBAT1**	**HT8GBAAT1**	**HT8GBABT1**	**HT8GBAABT1**	**HT8GBAF1Q1T1**
		Clear	**HT8GBCT1**	**HT8GBCAT1**	**HT8GBCBT1**	**HT8GBCABT1**	**HT8GBCF1Q1T1**
		White	**HT8GBWT1**	**HT8GBWAT1**	**HT8GBWBT1**	**HT8GBWABT1**	**HT8GBWF1Q1T1**
		Yellow	**HT8GBYT1**	**HT8GBYAT1**	**HT8GBYBT1**	**HT8GBYABT1**	**HT8GBYF1Q1T1**
		Blue	**HT8GBBT1**	**HT8GBBAT1**	**HT8GBBBT1**	**HT8GBBABT1**	**HT8GBBF1Q1T1**

Note

① Light unit base operator without lens or bulb.

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

Illuminated Pushbutton Operator

Illuminated Pushbuttons, continued

Type	Volts	Lens Color	Operator Only Catalog Number	1NO Catalog Number	1NC Catalog Number	1NO-1NC Catalog Number	2NO-2NC Catalog Number
LED							
Full voltage	120 Vac/Vdc	No lens ①	**HT8GBFV**	—	—	—	—
		Red	**HT8GBRF7**	**HT8GBRAF7**	**HT8GBRBF7**	**HT8GBRABF7**	**HT8GBRF1Q1F7**
		Green	**HT8GBGF7**	**HT8GBGAF7**	**HT8GBGBF7**	**HT8GBGABF7**	**HT8GBGF1Q1F7**
		Amber	**HT8GBAF7**	**HT8GBAAF7**	**HT8GBABF7**	**HT8GBAABF7**	**HT8GBAF1Q1F7**
		Clear	**HT8GBCF7**	**HT8GBCAF7**	**HT8GBCBF7**	**HT8GBCABF7**	**HT8GBCF1Q1F7**
		White	**HT8GBWF7**	**HT8GBWAF7**	**HT8GBWBF7**	**HT8GBWABF7**	**HT8GBWF1Q1F7**
		Yellow	**HT8GBYF7**	**HT8GBYAF7**	**HT8GBYBF7**	**HT8GBYABF7**	**HT8GBYF1Q1F7**
		Blue	**HT8GBBF7**	**HT8GBBAF7**	**HT8GBBBF7**	**HT8GBBABF7**	**HT8GBBF1Q1F7**
	24 Vac/Vdc	No lens ①	**HT8GBFV**	—	—	—	—
		Red	**HT8GBRF3**	**HT8GBRAF3**	**HT8GBRBF3**	**HT8GBRABF3**	**HT8GBRF1Q1F3**
		Green	**HT8GBGF3**	**HT8GBGAF3**	**HT8GBGBF3**	**HT8GBGABF3**	**HT8GBGF1Q1F3**
		Amber	**HT8GBAF3**	**HT8GBAAF3**	**HT8GBABF3**	**HT8GBAABF3**	**HT8GBAF1Q1F3**
		Clear	**HT8GBCF3**	**HT8GBCAF3**	**HT8GBCBF3**	**HT8GBCABF3**	**HT8GBCF1Q1F3**
		White	**HT8GBWF3**	**HT8GBWAF3**	**HT8GBWBF3**	**HT8GBWABF3**	**HT8GBWF1Q1F3**
		Yellow	**HT8GBYF3**	**HT8GBYAF3**	**HT8GBYBF3**	**HT8GBYABF3**	**HT8GBYF1Q1F3**
		Blue	**HT8GBBF3**	**HT8GBBAF3**	**HT8GBBBF3**	**HT8GBBABF3**	**HT8GBBF1Q1F3**
Transformer	120 Vac	No lens ①	**HT8GBT1**	—	—	—	—
		Red	**HT8GBRL1**	**HT8GBRAL1**	**HT8GBRBL1**	**HT8GBRABL1**	**HT8GBRF1Q1L1**
		Green	**HT8GBGL1**	**HT8GBGAL1**	**HT8GBGBL1**	**HT8GBGABL1**	**HT8GBGF1Q1L1**
		Amber	**HT8GBAL1**	**HT8GBAAL1**	**HT8GBABL1**	**HT8GBAABL1**	**HT8GBAF1Q1L1**
		Clear	**HT8GBCL1**	**HT8GBCAL1**	**HT8GBCBL1**	**HT8GBCABL1**	**HT8GBCF1Q1L1**
		White	**HT8GBWL1**	**HT8GBWAL1**	**HT8GBWBL1**	**HT8GBWABL1**	**HT8GBWF1Q1L1**
		Yellow	**HT8GBYL1**	**HT8GBYAL1**	**HT8GBYBL1**	**HT8GBYABL1**	**HT8GBYF1Q1L1**
		Blue	**HT8GBBL1**	**HT8GBBAL1**	**HT8GBBBL1**	**HT8GBBABL1**	**HT8GBBF1Q1L1**

Note

① Light unit base operator without lens or bulb.

1

Guarded Illuminated Pushbutton Units

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

- Incandescent or LED
- Full voltage or transformer type
- 24V and 120V

Guarded Illuminated Pushbutton Operator

Guarded Illuminated Pushbuttons

Type	Volts	Lens Color	Operator Only Catalog Number	1NO Catalog Number	1NC Catalog Number	1NO-1NC Catalog Number	2NO-2NC Catalog Number
Incandescent Lamp							
Full voltage	120 Vac/Vdc	No lens ①	**HT8GDFV**	—	—	—	—
		Red	**HT8GDRV7**	**HT8GDRAV7**	**HT8GDRBV7**	**HT8GDRABV7**	**HT8GDRF1Q1V7**
		Green	**HT8GDGV7**	**HT8GDGAV7**	**HT8GDGBV7**	**HT8GDGABV7**	**HT8GDGF1Q1V7**
		Amber	**HT8GDAV7**	**HT8GDAAV7**	**HT8GDABV7**	**HT8GDAABV7**	**HT8GDAF1Q1V7**
		Clear	**HT8GDCV7**	**HT8GDVAV7**	**HT8GDCBV7**	**HT8GDCABV7**	**HT8GDCF1Q1V7**
		White	**HT8GDWV7**	**HT8GDWAV7**	**HT8GDWBV7**	**HT8GDWABV7**	**HT8GDWF1Q1V7**
		Yellow	**HT8GDYV7**	**HT8GDYAV7**	**HT8GDYBV7**	**HT8GDYABV7**	**HT8GDYF1Q1V7**
		Blue	**HT8GDBV7**	**HT8GDBAV7**	**HT8GDBBV7**	**HT8GDBABV7**	**HT8GDBF1Q1V7**
	24 Vac/Vdc	No lens ①	**HT8GDFV**	—	—	—	—
		Red	**HT8GDRV3**	**HT8GDRAV3**	**HT8GDRBV3**	**HT8GDRABV3**	**HT8GDRF1Q1V3**
		Green	**HT8GDGV3**	**HT8GDGAV3**	**HT8GDGBV3**	**HT8GDGABV3**	**HT8GDGF1Q1V3**
		Amber	**HT8GDAV3**	**HT8GDAAV3**	**HT8GDABV3**	**HT8GDAABV3**	**HT8GDAF1Q1V3**
		Clear	**HT8GDCV3**	**HT8GDVAV3**	**HT8GDCBV3**	**HT8GDCABV3**	**HT8GDCF1Q1V3**
		White	**HT8GDWV3**	**HT8GDWAV3**	**HT8GDWBV3**	**HT8GDWABV3**	**HT8GDWF1Q1V3**
		Yellow	**HT8GDYV3**	**HT8GDYAV3**	**HT8GDYBV3**	**HT8GDYABV3**	**HT8GDYF1Q1V3**
		Blue	**HT8GDBV3**	**HT8GDBAV3**	**HT8GDBBV3**	**HT8GDBABV3**	**HT8GDBF1Q1V3**
Transformer	120 Vac	No lens ①	**HT8GDT1**	—	—	—	—
		Red	**HT8GDRT1**	**HT8GDRAT1**	**HT8GDRBT1**	**HT8GDRABT1**	**HT8GDRF1Q1T1**
		Green	**HT8GDGT1**	**HT8GDGAT1**	**HT8GDGBT1**	**HT8GDGABT1**	**HT8GDGF1Q1T1**
		Amber	**HT8GDAT1**	**HT8GDAAT1**	**HT8GDABT1**	**HT8GDAABT1**	**HT8GDAF1Q1T1**
		Clear	**HT8GDCT1**	**HT8GDCAT1**	**HT8GDCBT1**	**HT8GDCABT1**	**HT8GDCF1Q1T1**
		White	**HT8GDWT1**	**HT8GDWAT1**	**HT8GDWBT1**	**HT8GDWABT1**	**HT8GDWF1Q1T1**
		Yellow	**HT8GDYT1**	**HT8GDYAT1**	**HT8GDYBT1**	**HT8GDYABT1**	**HT8GDYF1Q1T1**
		Blue	**HT8GDBT1**	**HT8GDBAT1**	**HT8GDBBT1**	**HT8GDBABT1**	**HT8GDBF1Q1T1**

Note

① Light unit base operator without lens or bulb.

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

Guarded Illuminated Pushbutton Operator

Guarded Illuminated Pushbuttons, continued

Type	Volts	Lens Color	Operator Only Catalog Number	1NO Catalog Number	1NC Catalog Number	1NO-1NC Catalog Number	2NO-2NC Catalog Number
LED							
Full voltage	120 Vac/Vdc	No lens ①	**HT8GDFV**	—	—	—	—
		Red	**HT8GDRF7**	**HT8GDRAF7**	**HT8GDRBF7**	**HT8GDRABF7**	**HT8GDRF1Q1F7**
		Green	**HT8GDGF7**	**HT8GDGAF7**	**HT8GDGBF7**	**HT8GDGABF7**	**HT8GDGF1Q1F7**
		Amber	**HT8GDAF7**	**HT8GDAAF7**	**HT8GDABF7**	**HT8GDAABF7**	**HT8GDAF1Q1F7**
		Clear	**HT8GDCF7**	**HT8GDCAF7**	**HT8GDCBF7**	**HT8GDCABF7**	**HT8GDCF1Q1F7**
		White	**HT8GDWF7**	**HT8GDWAF7**	**HT8GDWBF7**	**HT8GDWABF7**	**HT8GDWF1Q1F7**
		Yellow	**HT8GDYF7**	**HT8GDYAF7**	**HT8GDYBF7**	**HT8GDYABF7**	**HT8GDYF1Q1F7**
		Blue	**HT8GDBF7**	**HT8GDBAF7**	**HT8GDBBF7**	**HT8GDBABF7**	**HT8GDBF1Q1F7**
	24 Vac/Vdc	No lens ①	**HT8GDFV**	—	—	—	—
		Red	**HT8GDRF3**	**HT8GDRAF3**	**HT8GDRBF3**	**HT8GDRABF3**	**HT8GDRF1Q1F3**
		Green	**HT8GDGF3**	**HT8GDGAF3**	**HT8GDGBF3**	**HT8GDGABF3**	**HT8GDGF1Q1F3**
		Amber	**HT8GDAF3**	**HT8GDAAF3**	**HT8GDABF3**	**HT8GDAABF3**	**HT8GDAF1Q1F3**
		Clear	**HT8GDCF3**	**HT8GDCAF3**	**HT8GDCBF3**	**HT8GDCABF3**	**HT8GDCF1Q1F3**
		White	**HT8GDWF3**	**HT8GDWAF3**	**HT8GDWBF3**	**HT8GDWABF3**	**HT8GDWF1Q1F3**
		Yellow	**HT8GDYF3**	**HT8GDYAF3**	**HT8GDYBF3**	**HT8GDYABF3**	**HT8GDYF1Q1F3**
		Blue	**HT8GDBF3**	**HT8GDBAF3**	**HT8GDBBF3**	**HT8GDBABF3**	**HT8GDBF1Q1F3**
Transformer	120 Vac	No lens ①	**HT8GDT1**	—	—	—	—
		Red	**HT8GDRL1**	**HT8GDRAL1**	**HT8GDRBL1**	**HT8GDRABL1**	**HT8GDRF1Q1L1**
		Green	**HT8GDGL1**	**HT8GDGAL1**	**HT8GDGBL1**	**HT8GDGABL1**	**HT8GDGF1Q1L1**
		Amber	**HT8GDAL1**	**HT8GDAAL1**	**HT8GDABL1**	**HT8GDAABL1**	**HT8GDAF1Q1L1**
		Clear	**HT8GDCL1**	**HT8GDCAL1**	**HT8GDCBL1**	**HT8GDCABL1**	**HT8GDCF1Q1L1**
		White	**HT8GDWL1**	**HT8GDWAL1**	**HT8GDWBL1**	**HT8GDWABL1**	**HT8GDWF1Q1L1**
		Yellow	**HT8GDYL1**	**HT8GDYAL1**	**HT8GDYBL1**	**HT8GDYABL1**	**HT8GDYF1Q1L1**
		Blue	**HT8GDBL1**	**HT8GDBAL1**	**HT8GDBBL1**	**HT8GDBABL1**	**HT8GDBF1Q1L1**

Note

① Light unit base operator without lens or bulb.

1

Indicating Light Units

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

- Incandescent or LED
- Full voltage or transformer type
- Standard and PresTest types
- 24V and 120V

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.

Indicating Light Unit

PresTest Light Unit

Indicating Light Units

Type	Volts	Lens Color	Indicating Light Catalog Number	PresTest Catalog Number
Incandescent				
Full voltage	120 Vac/Vdc	No lens ①	**HT8HFFV**	**HT8GTFV**
		Red	**HT8HFRV7**	**HT8GTRV7**
		Green	**HT8HFGV7**	**HT8GTGV7**
		Amber	**HT8HFAV7**	**HT8GTAV7**
		Clear	**HT8HFCV7**	**HT8GTCV7**
		White	**HT8HFWV7**	**HT8GTWV7**
		Yellow	**HT8HFYV7**	**HT8GTYV7**
		Blue	**HT8HFBV7**	**HT8GTBV7**
	24 Vac/Vdc	No lens ①	**HT8HFFV**	**HT8GTFV**
		Red	**HT8HFRV3**	**HT8GTRV3**
		Green	**HT8HFGV3**	**HT8GTGV3**
		Amber	**HT8HFAV3**	**HT8GTAV3**
		Clear	**HT8HFCV3**	**HT8GTCV3**
		White	**HT8HFWV3**	**HT8GTWV3**
		Yellow	**HT8HFYV3**	**HT8GTYV3**
		Blue	**HT8HFBV3**	**HT8GTBV3**
Transformer	120 Vac 50/60 Hz	No lens ①	**HT8HBT1**	**HT8GTT1**
		Red	**HT8HBRT1**	**HT8GTRT1**
		Green	**HT8HBGT1**	**HT8GTGT1**
		Amber	**HT8HBAT1**	**HT8GTAT1**
		Clear	**HT8HBCT1**	**HT8GTCT1**
		White	**HT8HBWT1**	**HT8GTWT1**
		Yellow	**HT8HBYT1**	**HT8GTYT1**
		Blue	**HT8HBBT1**	**HT8GTBT1**

Note

① Light unit base operator without lens or bulb.

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

Indicating Light Unit

PresTest Light Unit

Indicating Light Units, continued

Type	Volts	Lens Color	Indicating Light Catalog Number	PresTest Catalog Number
LED				
Full voltage	120 Vac/Vdc	No lens ①	**HT8HFFV**	**HT8GTFV**
		Red	**HT8HFRF7**	**HT8GTRF7**
		Green	**HT8HFGF7**	**HT8GTGF7**
		Amber	**HT8HFAF7**	**HT8GTAF7**
		Clear	**HT8HFCF7**	**HT8GTCF7**
		White	**HT8HFWF7**	**HT8GTWF7**
		Yellow	**HT8HFYF7**	**HT8GTYF7**
		Blue	**HT8HFBF7**	**HT8GTBF7**
	24 Vac/Vdc	No lens ①	**HT8HFFV**	**HT8GTFV**
		Red	**HT8HFRF3**	**HT8GTRF3**
		Green	**HT8HFGF3**	**HT8GTGF3**
		Amber	**HT8HFAF3**	**HT8GTAF3**
		Clear	**HT8HFCF3**	**HT8GTCF3**
		White	**HT8HFWF3**	**HT8GTWF3**
		Yellow	**HT8HFYF3**	**HT8GTYF3**
		Blue	**HT8HFBF3**	**HT8GTBF3**
Transformer	120 Vac 50/60 Hz	No lens ①	**HT8HBT1**	**HT8GTT1**
		Red	**HT8HBRL1**	**HT8GTRL1**
		Green	**HT8HBGL1**	**HT8GTGL1**
		Amber	**HT8HBAL1**	**HT8GTAL1**
		Clear	**HT8HBCL1**	**HT8GTCL1**
		White	**HT8HBWL1**	**HT8GTWL1**
		Yellow	**HT8HBYL1**	**HT8GTYL1**
		Blue	**HT8HBBL1**	**HT8GTBL1**

Note

① Light unit base operator without lens or bulb.

1

Push-Pull Units

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

- 40 mm mushroom head
- Two-position maintained
- Non-illuminated

Round Head Two-Position Push-Pull Unit

Flat Head Two-Position Push-Pull Unit

Two-Position Push-Pull, Maintained, Non-Illuminated

	Operator Position—Maintained				
				Round Head Mushroom Head Button	Flat Head Mushroom Head Button
Contact Type	Out	In	Button Color	Catalog Number	Catalog Number
No contact	—	—	Black	**HT8CBH**	**HT8DBH**
			Red	**HT8CBR**	**HT8DBR**
			Green	**HT8CBG**	**HT8DBG**
NO	0	X	Black	**HT8CBHA**	**HT8DBHA**
			Red	**HT8CBRA**	**HT8DBRA**
			Green	**HT8CBGA**	**HT8DBGA**
NC	X	0	Black	**HT8CBHB**	**HT8DBHB**
			Red	**HT8CBRB**	**HT8DBRB**
			Green	**HT8CBGB**	**HT8DBGB**
NO-NC	0 X	X 0	Black	**HT8CBHAB**	**HT8DBHAB**
			Red	**HT8CBRAB**	**HT8DBRAB**
			Green	**HT8CBGAB**	**HT8DBGAB**
NCLB ①	X	0	Black	**HT8CBHD1B**	**HT8DBHD1B**
NC	X	0	Red	**HT8CBRD1B**	**HT8DBRD1B**
			Green	**HT8CBGD1B**	**HT8DBGD1B**
NCLB ①	X	0	Black	**HT8CBHD1D**	**HT8DBHD1D**
NCLB ①	X	0	Red	**HT8CBRD1D**	**HT8DBRD1D**
			Green	**HT8CBGD1D**	**HT8DBGD1D**

Note

① NCLB = normally closed late break.

1

Illuminated Push-Pull Units

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

- Incandescent or LED
- Full voltage or transformer type
- 24V and 120V

Illuminated Push-Pull Unit

Illuminated Push-Pull Units

Type	Volts	Lens Color	Operator Only Catalog Number	1NO Catalog Number	1NC Catalog Number	1NO-1NC Catalog Number	2NCLB Catalog Number
Incandescent Lamp							
Full voltage	120 Vac/Vdc	Red	**HT8FBRV7**	**HT8FBRAV7**	**HT8FBRBV7**	**HT8FBRABV7**	**HT8FBRD1DV7**
		Green	**HT8FBGV7**	**HT8FBGAV7**	**HT8FBGBV7**	**HT8FBGABV7**	**HT8FBGD1DV7**
	24 Vac/Vdc	Red	**HT8FBRV3**	**HT8FBRAV3**	**HT8FBRBV3**	**HT8FBRABV3**	**HT8FBRD1DV3**
		Green	**HT8FBGV3**	**HT8FBGAV3**	**HT8FBGBV3**	**HT8FBGABV3**	**HT8FBGD1DV3**
Transformer	120 Vac	Red	**HT8FBRT1**	**HT8FBRAT1**	**HT8FBRBT1**	**HT8FBRABT1**	**HT8FBRD1DT1**
		Green	**HT8FBGT1**	**HT8FBGAT1**	**HT8FBGBT1**	**HT8FBGABT1**	**HT8FBGD1DT1**
LED Lamp							
Full voltage	120 Vac/Vdc	Red	**HT8FBRF7**	**HT8FBRAF7**	**HT8FBRBF7**	**HT8FBRABF7**	**HT8FBRD1DF7**
		Green	**HT8FBGF7**	**HT8FBGAF7**	**HT8FBGBF7**	**HT8FBGABF7**	**HT8FBGD1DF7**
	24 Vac/Vdc	Red	**HT8FBRF3**	**HT8FBRAF3**	**HT8FBRBF3**	**HT8FBRABF3**	**HT8FBRD1DF3**
		Green	**HT8FBGF3**	**HT8FBGAF3**	**HT8FBGBF3**	**HT8FBGABF3**	**HT8FBGD1DF3**
Transformer	120 Vac	Red	**HT8FBRL1**	**HT8FBRAL1**	**HT8FBRBL1**	**HT8FBRABL1**	**HT8FBRD1DL1**
		Green	**HT8FBGL1**	**HT8FBGAL1**	**HT8FBGBL1**	**HT8FBGABL1**	**HT8FBGD1DL1**

Note: Complete illuminated push-pull switches will not fit in a standard 3 in deep enclosure.

Illuminated Push-Pull Units with Low Profile Light Units

Type	Voltage	Color	Fingersafe	Operator Only Catalog Number	1NO Catalog Number	1NC Catalog Number	1NO-1NC Catalog Number	2NCLB Catalog Number	1NO-1NCLB Catalog Number
LED Lamp									
Full voltage	120 Vac/Vdc	Red	Yes	**HT8FBRFL7P**	**HT8FBRAFL7P**	**HT8FBRBFL7P**	**HT8FBRABFL7P**	**HT8FBRD1DFL7P**	**HT8FBRD1BFL7P**
		Red	No	**HT8FBRFL7**	**HT8FBRAFL7**	**HT8FBRBFL7**	**HT8FBRABFL7**	**HT8FBRD1DFL7**	**HT8FBRD1BFL7**
	24 Vac/Vdc	Red	Yes	**HT8FBRFL3P**	**HT8FBRAFL3P**	**HT8FBRBFL3P**	**HT8FBRABFL3P**	**HT8FBRD1DFL3P**	**HT8FBRD1BFL3P**
		Red	No	**HT8FBRFL3**	**HT8FBRAFL3**	**HT8FBRBFL3**	**HT8FBRABFL3**	**HT8FBRD1DFL3**	**HT8FBRD1BFL3**
Incandescent									
Full voltage	120 Vac/Vdc	Red	Yes	**HT8FBRVL7P**	**HT8FBRAVL7P**	**HT8FBRBVL7P**	**HT8FBRABVL7P**	**HT8FBRD1DVL7P**	**HT8FBRD1BVL7P**
		Red	No	**HT8FBRVL7**	**HT8FBRAVL7**	**HT8FBRBVL7**	**HT8FBRABVL7**	**HT8FBRD1DVL7**	**HT8FBRD1BVL7**
	24 Vac/Vdc	Red	Yes	**HT8FBRVL3P**	**HT8FBRAVL3P**	**HT8FBRBVL3P**	**HT8FBRABVL3P**	**HT8FBRD1DVL3P**	**HT8FBRD1BVL3P**
		Red	No	**HT8FBRVL3**	**HT8FBRAVL3**	**HT8FBRBVL3**	**HT8FBRABVL3**	**HT8FBRD1DVL3**	**HT8FBRD1BVL3**

1

Selector Switch Units

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

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

Standard Knob Operator

Standard Lever Operator

Two-Position Selector Switch Units, Non-Illuminated

Contact Type	Operator Position ①		Operating Mode ②		Standard Black Knob Catalog Number	Standard Black Lever Catalog Number
No contacts	—	—	M	M	**HT8JAH3A**	**HT8JDH3A**
			S	M	**HT8JKH3A**	**HT8JLH3A**
			M	S	**HT8JNH3A**	**HT8JPH3A**
1NO	0	X	M	M	**HT8JAH3AA5**	**HT8JDH3AA5**
			S	M	**HT8JKH3AA5**	**HT8JLH3AA5**
			M	S	**HT8JNH3AA5**	**HT8JPH3AA5**
2NO	X 0	0 X	M	M	**HT8JAH3AAA5**	**HT8JDH3AAA5**
			S	M	**HT8JKH3AAA5**	**HT8JLH3AAA5**
			M	S	**HT8JNH3AAA5**	**HT8JPH3AAA5**
2NO-2NC	X 0 0 X	0 X X 0	M	M	**HT8JAH3AF1Q1**	**HT8JDH3AF1Q1**
			S	M	**HT8JKH3AF1Q1**	**HT8JLH3AF1Q1**
			M	S	**HT8JNH3AF1Q1**	**HT8JPH3AF1Q1**

Standard Knob Operator

Standard Lever Operator

Three-Position Selector Switch Units, Non-Illuminated

Contact Type	Operator Position ①			Operating Mode ②			Standard Black Knob Catalog Number	Standard Black Lever Catalog Number
No contacts	—	—	—	M	M	M	**HT8JBH1D**	**HT8JEH1D**
				S	M	M	**HT8JRH1D**	**HT8JSH1D**
				M	M	S	**HT8JUH1D**	**HT8JVH1D**
				S	M	S	**HT8JXH1D**	**HT8JYH1D**
2NO	X 0	0 0	0 X	M	M	M	**HT8JBH1DAA5**	**HT8JEH1DAA5**
				S	M	M	**HT8JRH1DAA5**	**HT8JSH1DAA5**
				M	M	S	**HT8JUH1DAA5**	**HT8JVH1DAA5**
				S	M	S	**HT8JXH1DAA5**	**HT8JYH1DAA5**
2NO-2NC ③	X 0 0	0 X 0	0 0 X	M	M	M	**HT8JBH1DF1Q1**	**HT8JEH1DF1Q1**
				S	M	M	**HT8JRH1DF1Q1**	**HT8JSH1DF1Q1**
				M	M	S	**HT8JUH1DF1Q1**	**HT8JVH1DF1Q1**
				S	M	S	**HT8JXH1DF1Q1**	**HT8JYH1DF1Q1**
2NO-2NC	X 0 0 X	0 X 0 X	0 X X 0	M	M	M	**HT8JBH1DF1Q1**	**HT8JEH1DF1Q1**
				S	M	M	**HT8JRH1DF1Q1**	**HT8JSH1DF1Q1**
				M	M	S	**HT8JUH1DF1Q1**	**HT8JVH1DF1Q1**
				S	M	S	**HT8JXH1DF1Q1**	**HT8JYH1DF1Q1**

Notes

① X = closed circuit, 0 = open circuit.

② M = Maintained, S = Momentary.

③ For 0X0, NC contacts must be wired in series—see Three-Position Selector Switch table on **Page V7-T1-320**.

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

Standard Knob Operator

Standard Lever Operator

Four-Position Selector Switch Units, Non-Illuminated

Contact Type	Operator Position ①				Operating Mode ②				Standard Black Knob Catalog Number	Standard Black Lever Catalog Number
No contacts	—	—	—	—	M	M	M	M	**HT8JCH8E**	**HT8JFH8E**
					S	M	M	M	**HT8LNH8E**	**HT8LPH8E**
					M	M	M	S	**HT8LRH8E**	**HT8LSH8E**
2NO-2NC	X 0 0 0	0 X 0 0	0 0 X 0	0 0 0 X	M	M	M	M	**HT8JCH8EF1Q1**	**HT8JFH8EF1Q1**
					S	M	M	M	**HT8LNH8EF1Q1**	**HT8LPH8EF1Q1**
					M	M	M	S	**HT8LRH8EF1Q1**	**HT8LSH8EF1Q1**

Notes

① X = closed circuit, 0 = open circuit.

② M = Maintained, S = Momentary.

1

Selector Switch Contact Block Selection

For Two-, Three- and Four-Position Selector Switches

Two-Position Selector Switch (Cam Code 3A)

Operator Position

		Left		Right
X	0	NO	or	NC
0	X	NC	or	NO

Three-Position Selector Switch (Cam Code 1D)

Operator Position

			Left	Right
X	0	0	NO	—
0	X	0	NC	NC
0	0	X	—	NO
0	X	X	NC	—
X	X	0	—	NC

Four-Position Selector Switch (Cam Code 8E)

Operator Position

				Left	Right
X	0	0	0	NO	—
0	X	0	0	NC	—
0	0	X	0	—	NO
0	0	0	X	—	NC

Accessories

HT800 Accessories

	Description	Catalog Number
HT8A15	**Illuminated Pushbutton Guard**	**HT8A15**
HT8WRENCH	**Wrench Tool**	**HT8WRENCH**
HT8LAMPTOOL	**Lamp/Bulb Removal Tool**	**HT8LAMPTOOL**
HT8X1	**Thrust Washer (Anti-rotation)** (Included with every operator)	**HT8X1**
HT8X2	**Trim Ring** (Included with every operator)	**HT8X2**
HT8X3	**Sealing/Spacer Washer** (Five included with every operator)	**HT8X3**
HT8GR1	**Grounding Kit for Pushbuttons and Selector Switches** (Included with every operator)	**HT8GR1**
HT8GR2	**Grounding Kit for Indicating Lights** (Included with indicating lights)	**HT8GR2**

Light Units

Light Unit

Type	Voltage	Catalog Number
Full voltage	24 Vac/Vdc	**HT8F3V3**
	120 Vac/Vdc	**HT8F7V8**
Transformer	120 Vac	**HT8L1T1**

1

Options

Legend Plates ①

Standard

Jumbo

For Pushbutton Operators and Indicating Lights

Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number	Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number
Letters on Legend Plates Below are 3/16 in High							
CLAMP	Black	**HT8SP90**	**HT8LP90**	OFF	Red	**HT8SP24**	**HT8LP24**
CLOSE		**HT8SP73**	**HT8LP73**	ON	Black	**HT8SP25**	**HT8LP25**
DOWN		**HT8SP74**	**HT8LP74**	OPEN		**HT8SP26**	**HT8LP26**
EMERG. STOP		**HT8SP13**	**HT8LP13**	OUT		**HT8SP27**	**HT8LP27**
FAST		**HT8SP75**	**HT8LP75**	POWER ON		**HT8SP80**	**HT8LP80**
FASTER		**HT8SP87**	**HT8LP87**	RAISE		**HT8SP28**	**HT8LP28**
FEEDER ON		**HT8SP94**	**HT8LP94**	READY		**HT8SP86**	**HT8LP86**
FEEDER OFF		**HT8SP95**	**HT8LP95**	RESET		**HT8SP29**	**HT8LP29**
FORWARD		**HT8SP15**	**HT8LP15**	REVERSE		**HT8SP30**	**HT8LP30**
HIGH		**HT8SP16**	**HT8LP16**	RUN		**HT8SP31**	**HT8LP31**
IN		**HT8SP17**	**HT8LP17**	SAFE		**HT8SP85**	**HT8LP85**
INCH		**HT8SP18**	**HT8LP18**	SLOW		**HT8SP32**	**HT8LP32**
JOG		**HT8SP19**	**HT8LP19**	SLOWER		**HT8SP88**	**HT8LP88**
JOG FOR.		**HT8SP20**	**HT8LP20**	START		**HT8SP33**	**HT8LP33**
JOG REV.		**HT8SP21**	**HT8LP21**	STOP	Red	**HT8SP34**	**HT8LP34**
LOW		**HT8SP22**	**HT8LP22**	TEST	Black	**HT8SP83**	**HT8LP83**
LOWER		**HT8SP23**	**HT8LP23**	TRANSFER		**HT8SP93**	**HT8LP93**
LUBE-FAIL		**HT8SP92**	**HT8LP92**	TRIP		**HT8SP84**	**HT8LP84**
MOTOR RUN		**HT8SP81**	**HT8LP81**	UNCLAMP		**HT8SP91**	**HT8LP91**
MOTOR STOP		**HT8SP82**	**HT8LP82**	UP		**HT8SP35**	**HT8LP35**

Standard

Jumbo

For Selector Switch Operators

Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number	Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number
Two-Position—3/16 in High Lettering				**Three-Position—3/16 in High Lettering**			
FOR. REV.	Black	**HT8SP38**	**HT8LP38**	AUTO OFF HAND	Black	**HT8SP49**	**HT8LP49**
HAND AUTO		**HT8SP39**	**HT8LP39**	FOR. OFF REV.		**HT8SP50**	**HT8LP50**
HIGH LOW		**HT8SP40**	**HT8LP40**	FOR. SAFE REV.		**HT8SP69**	**HT8LP69**
JOG RUN		**HT8SP41**	**HT8LP41**	HAND OFF AUTO		**HT8SP51**	**HT8LP51**
MAN. AUTO		**HT8SP67**	**HT8LP67**	MAN. OFF AUTO		**HT8SP68**	**HT8LP68**
OFF ON		**HT8SP42**	**HT8LP42**	OPEN OFF CLOSE		**HT8SP53**	**HT8LP53**
OPEN CLOSE		**HT8SP43**	**HT8LP43**	RUN SAFE JOG		**HT8SP70**	**HT8LP70**
RUN JOG		**HT8SP44**	**HT8LP44**	UP OFF DOWN		**HT8SP54**	**HT8LP54**
SAFE RUN		**HT8SP45**	**HT8LP45**	ON STOP SAFE		**HT8SP71**	**HT8LP71**
START JOG		**HT8SP46**	**HT8LP46**				
START STOP		**HT8SP47**	**HT8LP47**				
UP DOWN		**HT8SP48**	**HT8LP48**				

For Push-Pull Units

Legend	Color of Field	Standard ② Catalog Number	Jumbo ③ Catalog Number
ON/OFF	Black	**HT8PP5**	**HT8R5**
OPEN/CLOSE		**HT8PP8**	**HT8R8**
UP/DOWN		**HT8PP11**	**HT8R11**

Blank Plastic Legend Plates—Square

Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number
Black	White/Silver	**HT8SP76**	**HT8LP76**
White	Red/ Black	**HT8SP77**	**HT8LP77**

Notes

① For dimensions, see **Page V7-T1-330**.
② 3/32 in high lettering.
③ 1/8 in high lettering.

Legend Plates with Non-Standard Markings

When Ordering Specify

- Catalog number of blank plate.
- Insert the following into Order Notes: legend, letter size and locations. See information below.

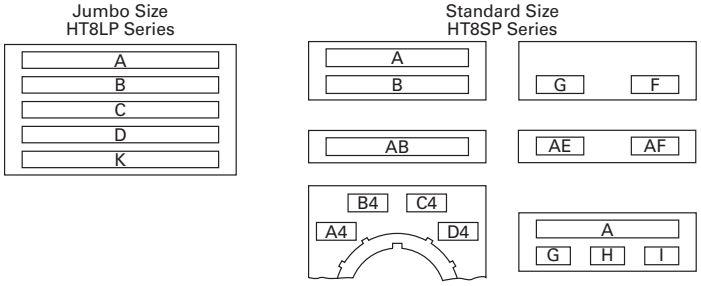
Ordering Example:

Catalog no.: **HT85P76STAMP**
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 Positions



Blank Plastic Legend Plates for Non-Standard Markings—Plastic

Legend	Color of Field	Standard Catalog Number	Jumbo Catalog Number
Black	White/Silver	**HT8SP76STAMP**	**HT8LP76STAMP**
White	Red/Black	**HT8SP77STAMP**	**HT8LP77STAMP**

Maximum Characters per Legend Plate and Approximate Dimensions

Top (Aluminum and Plastic)	Style	Character Size 3/32 in High Number of Lines	3/32 in High Number of Characters	1/8 in High Number of Lines	1/8 in High Number of Characters	3/16 in High Number of Lines	3/16 in High Number of Characters
Standard	Square	2	18	2	13	1	9
Jumbo ①	Square	5	23	3	18	2	12

Note

① Can be used on top row only of any enclosure.

1

Contact Blocks

NO Contact Block

NC Contact Block

Contact Blocks ①②

Description/Function	Contact Type	Without Guard Catalog Number	Fingerproof Catalog Number
Standard normally open contact	NO	**HT8A**	**HT8AP**
Standard normally closed contact	NC	**HT8B**	**HT8BP**
Normally open early make contact will make circuit before standard NO contact. DC ratings do not apply.	NOEM	**HT8C**	**HT8CP**
Normally closed late break contact will open after standard NC contact. DC ratings do not apply.	NCLB	**HT8D**	**HT8DP**
Logic level, low voltage NO contact. Gold plated contacts.	NO	**HT8E**	**HT8EP**

Contact Block Location (Viewed from Rear) Suffix Codes ③④

Left Side	Right Side
A = NO	**A5** = NO
A2 = 2NO	**A6** = 2NO
B1 = NC	**B** = NC
B2 = 2NC	**B6** = 2NC
C = NOEM	**C5** = NOEM
C2 = 2 NOEM	**C6** = 2 NOEM
D1 = NCLB	**D** = NCLB
D2 = 2 NCLB	**D6** = 2 NCLB
E1 = NOEM-NCLB	**E5** = NOEM-NCLB
F1 = NO and NC	**Q1** = NO and NC
F4 = 1NO-1NC	

Notes

① See **Page V7-T1-326** for contact block electrical ratings.
② Maximum of four contact blocks per side or a total of eight contact blocks recommended.
③ Maximum of two contact blocks per side or a total of four contact blocks recommended.
④ Standard contact blocks without fingerproof protection.

Replacement Parts

Replacement Bulbs and LEDs

Incandescent Bulb

LED Bulb

Voltage	Color	Catalog Number
Incandescent		
6V	—	**HT8BULBV1**
24V	—	**HT8BULBV3**
120V	—	**HT8BULBV7**
LED		
6–12V (For use with transformers with 6V secondary winding)	Red	**HT8LEDRF1**
	Green	**HT8LEDGF1**
	Amber/orange	**HT8LEDAF1**
	White/clear	**HT8LEDWF1**
	Yellow	**HT8LEDYF1**
	Blue	**HT8LEDBF1**
24V	Red	**HT8LEDRF3**
	Green	**HT8LEDGF3**
	Amber/orange	**HT8LEDAF3**
	White/clear	**HT8LEDWF3**
	Yellow	**HT8LEDYF3**
	Blue	**HT8LEDBF3**
120V	Red	**HT8LEDRF7**
	Green	**HT8LEDGF7**
	Amber/orange	**HT8LEDAF7**
	White/clear	**HT8LEDWF7**
	Yellow	**HT8LEDYF7**
	Blue	**HT8LEDBF7**

Replacement Lenses

Color	Indicating Lights Catalog Number	PresTest Lights Illuminated Pushbuttons Catalog Number
Amber	**HT8LA**	**HT8BA**
Blue	**HT8LB**	**HT8BB**
Clear	**HT8LC**	**HT8BC**
Green	**HT8LG**	**HT8BG**
Red	**HT8LR**	**HT8BR**
White	**HT8LW**	**HT8BW**
Yellow	**HT8LY**	**HT8BY**

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Technical Data and Specifications

HT800—Specifications

Description	Specification
Mechanical Ratings	
Frequency of operation	
Pushbuttons	6,000 operations per hour
Selector switches	3,000 operations per hour
Push-pull operators	3,000 operations per hour
Mechanical endurance/life	
Pushbuttons	10 x 10^6 operations 6K ops/hr with 6 NO on left and 6 NC on right
Selector switches	250 x 10^3 operations 3K ops/hr with 2 NO on left and 2 NC on right
Push-pull operators	250 x 10^3 operations 3K ops/hr with 6 NO on left and 6 NC on right
Climatic Conditions	
Operating temperature	10° to 140°F (–12° to 60°C)
Storage temperature	–40° to 176°F (–40° to 80°C)
Altitude	6,562 ft (2,000m)
Humidity	95% RH at 60°C
Terminals	
Contact blocks	#6-32 posidrive saddle clamp type, 1 x 16 AWG to 2 x 14 AWG, 12 in-lbs max.
Light units	#6-32 posidrive saddle clamp type, 1 x 22 AWG to 2 x 14 AWG, 7 in-lbs max.
Electrical Ratings	
Standard contact blocks UL (NEMA) rating	See table below.
Logic level contact block power rating	5V 1 mA (minimum) 28V 500 mA (maximum)

Electrical Ratings—HT800 Standard Contact Blocks, UL Rating

Description/Function	Contact Type	AC	DC	Catalog Number
Standard normally open contact	NO	A600 ①	P600 ②	**HT8A**
Standard normally closed contact	NC	A600 ①	P600 ②	**HT8B**
Normally open early make contact will make circuit before standard NO contact. DC ratings do not apply.	NOEM	A600 ①	—	**HT8C**
Normally closed late break contact will open after standard NC contact. DC ratings do not apply.	NCLB	A600 ①	—	**HT8D**
Logic level, low voltage NO contact. Gold plated contacts.	NO	5V 1 mA (minimum) 28V 500 mA (maximum)		**HT8E**

UL A600 and P600 Ratings

	50 Vac or 60 Hz				Vdc ③		
Description	**120**	**240**	**480**	**600**	**125**	**250**	**600**
Make and emerg. interrupting capacity (amp)	60	30	15	12	1.1	0.55	0.2
Normal load break (amp)	6	3	1.5	1.2	1.1	0.55	0.2
Thermal current (amp)	10	10	10	10	5	5	5
Voltamperes:							
Make and emerg. interrupting capacity	7200	7200	7200	7200	138 ④	138 ④	138 ④
Normal load break	720	720	720	720	138	138	138

Notes

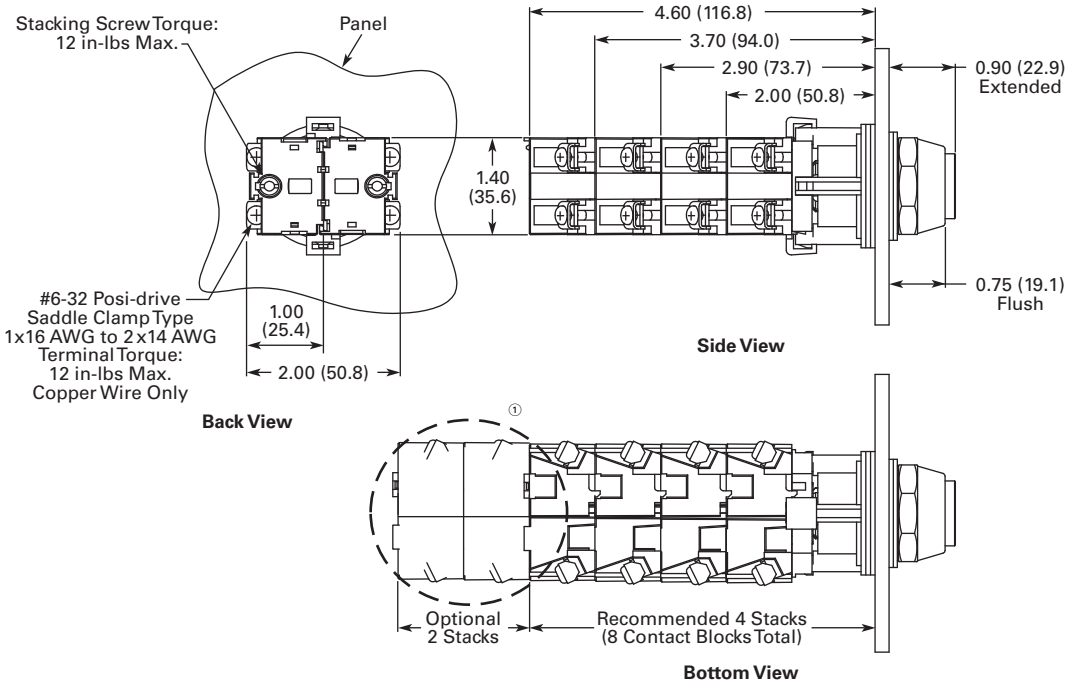
① Heavy-duty.
② Standard-duty.
③ DC ratings do not apply to NOEM (Normally Open Early Make) and NCLB (Normal Closed Late Break) contact blocks HT8C and HT8D.
④ Maximum make or break volt-amperes at 300V or less.

Dimensions

Approximate Dimensions in Inches (mm)

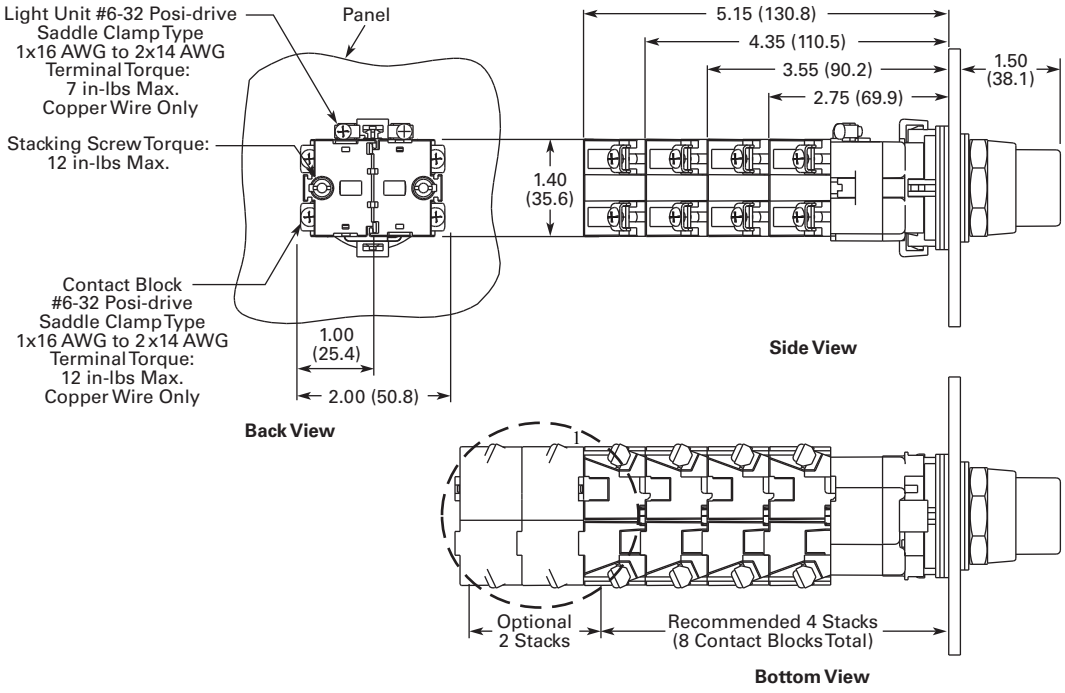
Momentary Pushbuttons—Non-Illuminated

Back, side and bottom views of pushbutton operator with attached contact blocks.



Illuminated Pushbuttons

Back, side and bottom views of pushbutton operator with attached contact blocks.



Note

① Recommended maximum of four tandem stacks of contact blocks behind operator. At users' discretion, two additional tandem stacks may be added.

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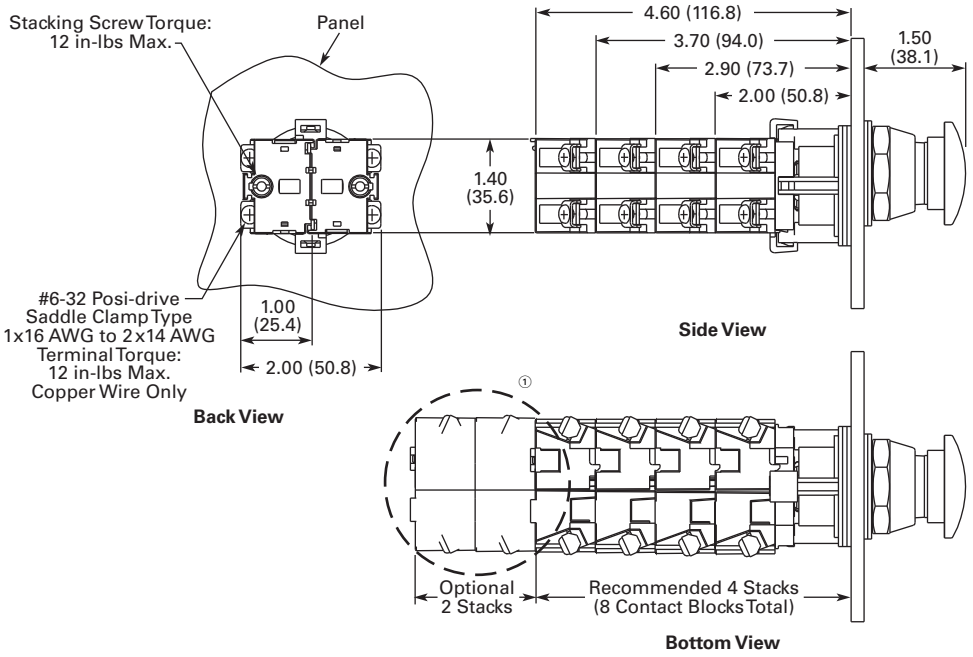
Approximate Dimensions in Inches (mm)

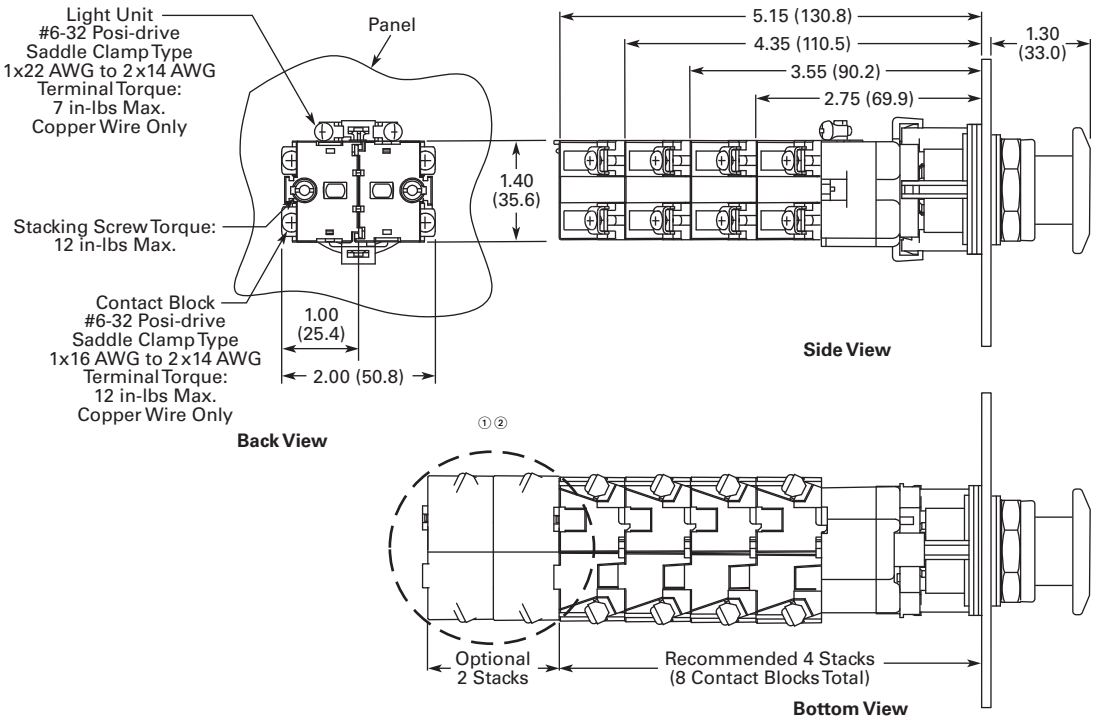
Mushroom Head Pushbuttons and Round Head MRH Push-Pull Operators

Back, side and bottom views of mushroom head operator with attached contact blocks.



Illuminated and Non-Illuminated Flat Head MRH Push-Pull Operators

Back, side and bottom views of push-pull operator with attached contact blocks.



Notes

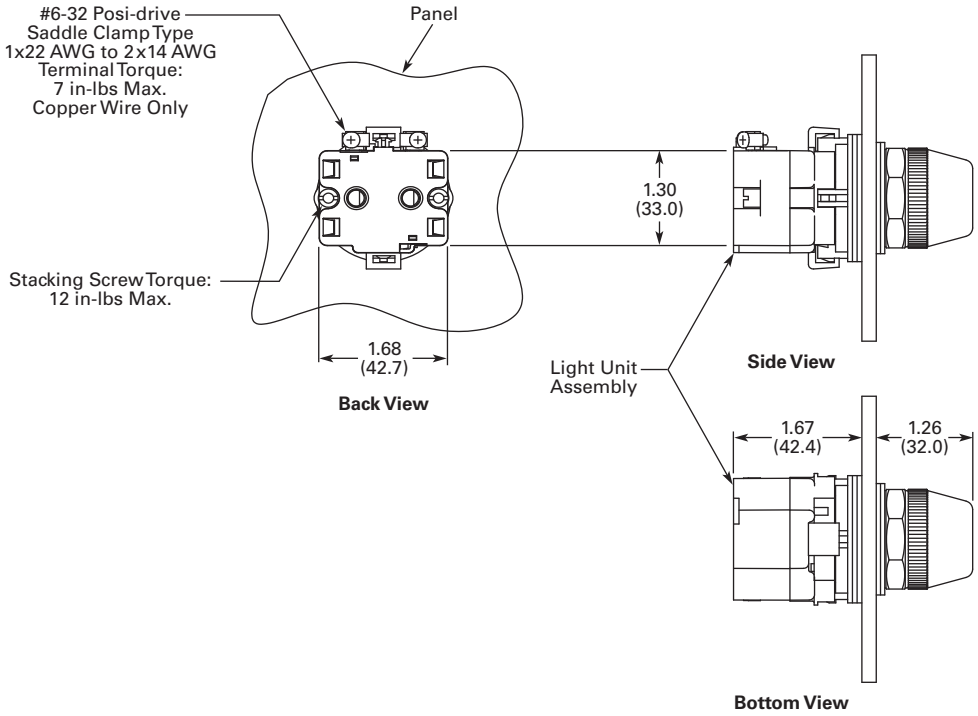
① Recommended maximum of four tandem stacks of contact blocks behind operator. At users' discretion, two additional tandem stacks may be added.

② Contact blocks mount directly to operator adaptor in non-illuminated version.

Approximate Dimensions in Inches (mm)

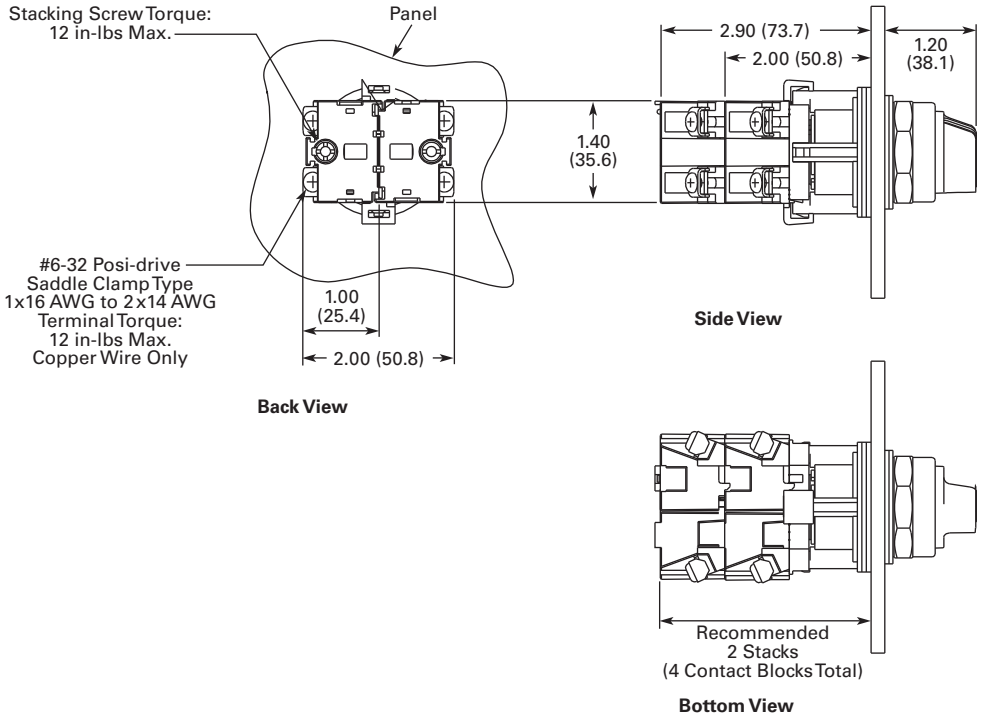
Indicating Lights

Back, side and bottom views of indicating light operator with attached contact blocks.



Selector Switches

Back, side and bottom views of selector switch operator with attached contact blocks.



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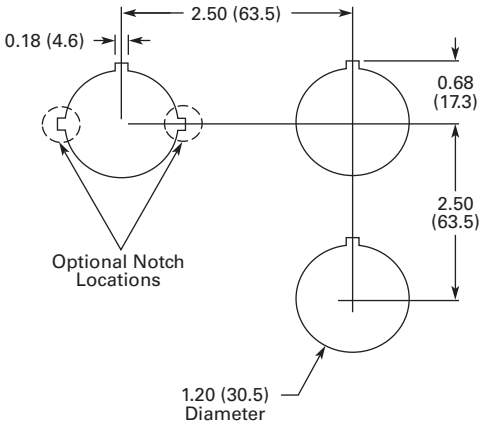
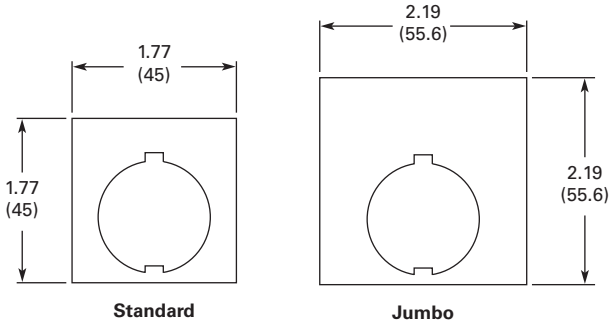
Approximate Dimensions in Inches (mm)

Mounting Matrix and Minimum Panel Spacing Requirements



Legend Plates



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Product Description

All the Industry-Proven Quality of Eaton's 10250T and E34 Series of Logic Devices, plus Class I Division 2 Certification

The **10250T1H** consists of a normally open-normally closed factory sealed contact block that is UL Listed for use in Class I, Division 2, Groups B, C and D (NEC 500–503)—Class I, Zone 2, IIB + H2 (NEC 505) hazardous locations and is rated for both NEMA A600 and NEMA Q300. 10250T and E34 illuminated components have also been UL Listed for use in Class I, Division 2, Groups B, C and D (NEC 500–503)—Class I, Zone 2, IIB + H2 (NEC 505).

This, combined with the industry-proven Eaton 10250T 30.5 mm pushbutton line, offers a complete solution to Division 2 hazardous location requirements.

Single composite catalog numbers for complete assembled stations and operators for use in Division 2 hazardous locations are featured throughout this section.

Features

- Factory sealed contact blocks
- Heavy-duty zinc die cast construction
- NEMA rated 1, 2, 3, 3R, 4, 4X, 12, 13
- Front-of-panel drainage holes
- Grounding nibs on the operator casing
- Solid thermosetting cathodic epoxy coating on E34
- Corrosion resistance in E34

Benefits

- Pushbutton for hazardous locations
- Drainage holes prevent buildup of liquid inside the operator which can prevent operation in freezing environments
- Grounding nibs bite through paint and other coatings to provide secure ground
- Suitable for corrosive environments (E34 only)
- Earth terminal provides additional grounding point and allows for daisy chain grounding (E34 line)

Standards and Certifications

- UL 508—File No. E131568
- UL 1604—File No. E10323
- CSA Certified C22.2 No.14—File No. LR 68551
- CSA Certified C22.2 No. 213-M1987—File No. LR 20713

Ingress Protection

- Standard indicating lights
  - UL (NEMA) Type 3, 3R, 3S, 4, 4X, 12, 13
  - IEC IP65
- All other operators
  - UL (NEMA) Type 3, 3R, 4, 4X, 12, 13
  - IEC IP65

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Product Overview

Operator

The 30.5 mm 10250T pushbutton line features a zinc die cast construction with chrome-plated housing and mounting nut.

Eaton's E34 Series 30.5 mm pushbutton line features the same rugged die cast construction of our 10250T line with an additional two-layer 100% solid thermosetting cathodic epoxy coating. This coating provides a flat black smooth, consistent, corrosion resistant surface that has passed a demanding 600 hour salt spray test. (The industry standard for this 4X test requires only 200 hours.)

Ultraviolet Light

E34 epoxy coating is not recommended for use in applications where exposure to ultraviolet light exists—use NEMA 4X 10250T operators.

Ratings

Our Class I Division 2 line of pushbuttons are UL Listed (NEMA type) 1, 2, 3, 3R, 4, 4X, 12 and 13. Our Class I Division 2 E34 line meets IEC 947-1 IP66 standards and the cathodic coating meets FDA 3A sanitary chemical resistance requirements. For a complete listing of all applicable ratings see **Pages V7-T1-367** to **V7-T1-368.**

10250T Grounding Nibs

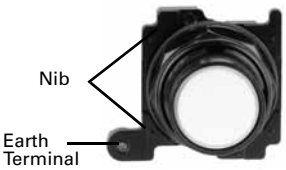
10250T line operators have "grounding nibs"—four metal points on the operator casting designed to bite through most paints and other coatings on metal panels to enhance the grounding connection when the operator is securely tightened.

10250T Grounding Nibs

E34 Grounding Nibs

E34 line of operators is equipped with a ground screw terminal as part of its die cast construction. This earthing terminal provides an easily accessible point for grounding operators when used in a painted or nonmetallic enclosure and eliminates the need for extra kits when daisy chain grounding is required.

E34 Grounding Nibs

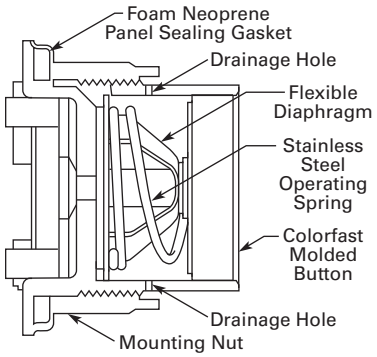


Diaphragm Seal with Drainage Holes

Liquid Drainage

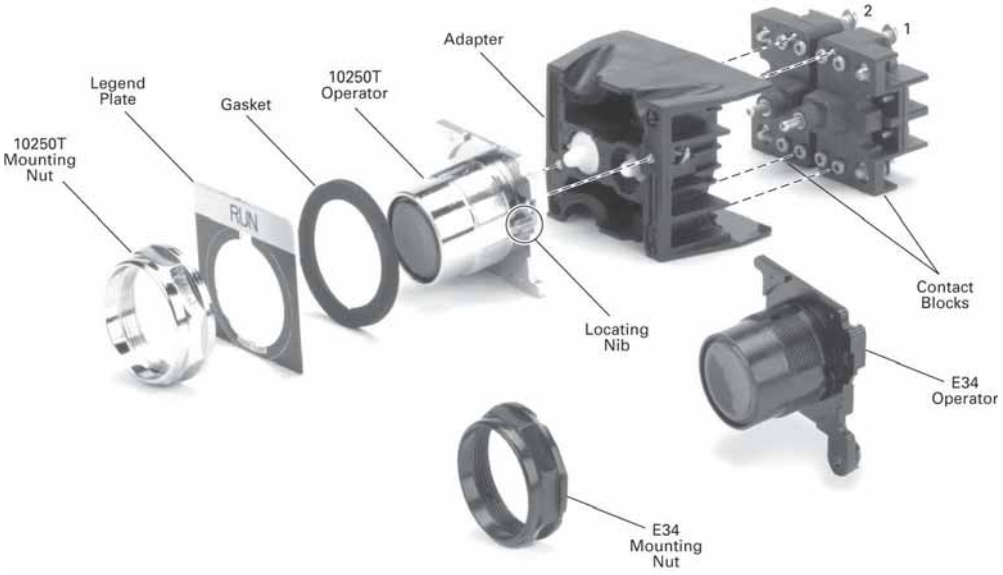
Eaton's pushbutton operators offer front of panel drainage via holes in the operator bushing. Hidden from view by the mounting nut, these holes prevent buildup of liquid inside the operator, which can prevent operation in freezing environments. The holes also provide a route for escaping liquid in high 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 Class I Division 2 Hazardous Locations



Catalog Number Selection

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

Non-Illuminated Assembled Operators

10250T 718 E J

Operator Type

10250T =	Heavy-duty oiltight
E34EX =	Corrosion resistant oiltight

Operator and Contact Block

706 = Flush 1NO-1NC	**722** = 2P SS MT XO,OX-CAM1
707 = Flush 2NO-2NC	**723** = 2P SS MT XO,OX,XO,OX-CAM1
708 = Extended 1NO-1NC	**724** = 2P SS SPR-R XO,OX-CAM1
709 = Extended 2NO-2NC	**725** = 2P SS SPR-R XO,OX,XO,OX-CAM1
710 = Mushroom 1NO-1NC	**726** = 3P SS MT XOO,OOX-CAM3
711 = Mushroom 2NO-2NC	**727** = 3P SS MT XOO,OXO,OOX-CAM3
712 = JMB mushroom 1NO-1NC	**728** = 3P SS SPR-L XOO,OOX-CAM3
713 = JMB mushroom 2NO-2NC	**729** = 3P SS SPR-L XOO,OXO,OOX-CAM3
714 = 2P MT push-pull 1NO-1NC	**730** = 3P SS SPR-L&R XOO,OOX-CAM3
715 = 2P MT push-pull 2NO-2NC	**731** = 3P SS SPR-L&R XOO,OXO,OOX-CAM3
716 = 3P MT push-mom pull 1NO-1NC	**732** = 3P SS SPR-R XOO,OOX-CAM3
717 = 3P MT push-mom pull 2NO-2NC	**733** = 3P SS SPR-R XOO,OXO,OOX-CAM3
718 = 3P mom push-pull 1NO-1NC	**743** = 4P SS MT XOOO,OXOO,OOXO,OOOX-CAM7
721 = 3P mom push-pull 2NO-2NC	

Button Color

B = Black	
R = Red	
G = Green	
Y = Yellow	
W = White	
L = Blue	
N = Orange	
E = Red EMERG. STOP	
T = Keyed-SS	

ACC/SS Type

Blank =	None
J =	JMB push-pull
B =	Booted-FL/EXT
G =	Guarded-FL
K =	Knob-SS
L =	Lever-SS
A =	Lever W/IP-SS
C =	Coin-SS
	Keyed-SS

Cam

1
2
3
7

Key Removal

1 =	RT only
2 =	LT only
3 =	RT and LT
4 =	CT only
5 =	RT and CT
6 =	LT and CT
7 =	All

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Product Selection

Momentary Pushbutton Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

10250T Flush Button

E34 Flush Button

10250T Extended Button

E34 Extended Button

Non-Illuminated Flush and Extended Pushbuttons

Contact Type	Button Color ①	Flush Button 10250T Catalog Number	Flush Button E34 Catalog Number	Extended Button 10250T Catalog Number	Extended Button E34 Catalog Number
1NO-1NC	Black	**10250T706B**	**E34EX706B**	**10250T708B**	**E34EX708B**
	Red	**10250T706R**	**E34EX706R**	**10250T708R**	**E34EX708R**
	Green	**10250T706G**	**E34EX706G**	**10250T708G**	**E34EX708G**
2NO-2NC	Black	**10250T707B**	**E34EX707B**	**10250T709B**	**E34EX709B**
	Red	**10250T707R**	**E34EX707R**	**10250T709R**	**E34EX709R**
	Green	**10250T707G**	**E34EX707G**	**10250T709G**	**E34EX709G**

Color Selection

Color	Suffix Code	Color	Suffix Code
Black	**B**	White	**W**
Red	**R**	Blue	**L** ②
Green	**G**	Orange ③	**N**
Yellow	**Y**	Red (EMERG. STOP) ④	**E**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

① To order different color guarded button, simply substitute the underlined character in catalog number with appropriate suffix code from Color Selection table above. Example: 10250T710**Y**.

② Blue not available on jumbo mushroom pushbutton.

③ Orange is only available on flush or extended pushbuttons.

④ Red with EMERG. STOP engraved on button head for jumbo mushroom pushbutton only.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

10250T Mushroom Button

E34 Mushroom Button

10250T Jumbo Mushroom Button

E34 Jumbo Mushroom Button

Non-Illuminated Mushroom and Jumbo Mushroom Pushbuttons

		Mushroom Button		Jumbo Mushroom Button	
Contact Type	Button Color ①	10250T Catalog Number	E34 Catalog Number	10250T ② Catalog Number	E34 ② Catalog Number
1NO-1NC	Black	**10250T710B**	**E34EX710B**	**10250T712B**	**E34EX712B**
	Red	**10250T710R**	**E34EX710R**	**10250T712R**	**E34EX712R**
	Green	**10250T710G**	**E34EX710G**	**10250T712G**	**E34EX712G**
2NO-2NC	Black	**10250T711B**	**E34EX711B**	**10250T713B**	**E34EX713B**
	Red	**10250T711R**	**E34EX711R**	**10250T713R**	**E34EX713R**
	Green	**10250T711G**	**E34EX711G**	**10250T713G**	**E34EX713G**

Color Selection

Color	Suffix Code	Color	Suffix Code
Black	**B**	White	**W**
Red	**R**	Blue	**L** ③
Green	**G**	Orange ④	**N**
Yellow	**Y**	Red (EMERG. STOP) ⑤	**E**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

① To order different color guarded button, simply substitute the underlined character in catalog number with appropriate suffix code from Color Selection table above. Example: 10250T710**Y**.

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

③ Blue not available on jumbo mushroom pushbutton.

④ Orange is only available on flush or extended pushbuttons.

⑤ Red with EMERG. STOP engraved on button head for jumbo mushroom pushbutton only.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Momentary contact
- Non-illuminated
- Booted or guarded

Booted Flush Button

Booted Extended Button

Guarded Extended Button

10250T Pushbuttons Booted and Guarded

Contact Type	Button Color	Booted Flush Button Catalog Number	Booted Extended Button Catalog Number	Guarded Extended Button ① Catalog Number
1NO-1NC	Black	**10250T706BB**	**10250T708BB**	**10250T706BG**
	Red	**10250T706RB** ②	**10250T708RB**	**10250T706RG**
	Green	**10250T706GB**	**10250T708GB**	**10250T706GG**
2NO-2NC	Black	**10250T707BB**	**10250T709BB**	**10250T707BG**
	Red	**10250T707RB** ②	**10250T709RB**	**10250T707RG**
	Green	**10250T707GB**	**10250T709GB**	**10250T707GG**

Color Selection

Color	Suffix Code	Color	Suffix Code
Black	**B**	White	**W**
Red	**R**	Blue	**L**
Green	**G**	Orange	**N**
Yellow	**Y**		

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

① To order different color guarded button, simply substitute the underlined character in catalog number with appropriate suffix code from Color Selection table above. Example: 10250T706**Y**G.

② Red booted flush pushbutton is not recommended for STOP function.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Momentary contact
- Non-illuminated
- Booted or guarded

Booted Flush Button

Booted Extended Button

Guarded Extended Button

E34 Pushbuttons Booted and Guarded

Contact Type	Button Color	Booted Flush Button Catalog Number	Booted Extended Button Catalog Number	Guarded Extended Button ① Catalog Number
1NO-1NC	Black	**E34EX706BB**	**E34EX708BB**	**E34EX706BG**
	Red	**E34EX706RB** ②	**E34EX708RB**	**E34EX706RG**
	Green	**E34EX706GB**	**E34EX708GB**	**E34EX706GG**
2NO-2NC	Black	**E34EX707BB**	**E34EX709BB**	**E34EX707BG**
	Red	**E34EX707RB** ②	**E34EX709RB**	**E34EX707RG**
	Green	**E34EX707GB**	**E34EX709GB**	**E34EX707GG**

Color Selection

Color	Suffix Code	Color	Suffix Code
Black	**B**	White	**W**
Red	**R**	Blue	**L**
Green	**G**	Orange	**N**
Yellow	**Y**		

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

① To order different color guarded button, simply substitute the underlined character in catalog number with appropriate suffix code from Color Selection table above. Example: 10250T706**Y**G.

② Red booted flush pushbutton is not recommended for STOP function.

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Non-Illuminated Pushbutton Units

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

10250T Flush Button

E34 Flush Button

10250T Extended Button

E34 Extended Button

10250T Half Shrouded Button

E34 Half Shrouded Button

Non-Illuminated Pushbuttons, Momentary Contact

Color	Flush Button 10250T ① Catalog Number	Flush Button E34 Catalog Number	Extended Button 10250T Catalog Number	Extended Button E34 Catalog Number	Half Shrouded Button 10250T Vertical Catalog Number	Half Shrouded Button 10250T Horizontal Catalog Number	Half Shrouded Button E34 Vertical Catalog Number	Half Shrouded Button E34 Horizontal Catalog Number
Black	**10250T101**	**E34PB1**	**10250T111**	**E34EB1**	**10250T501**	**10250T511**	**E34EVB1**	**E34EHB1**
Red	**10250T102**	**E34PB2**	**10250T112**	**E34EB2**	**10250T502**	**10250T512**	**E34EVB2**	**E34EHB2**
Green	**10250T103**	**E34PB3**	**10250T113**	**E34EB3**	**10250T503**	**10250T513**	**E34EVB3**	**E34EHB3**
Yellow	**10250T104**	**E34PB4**	**10250T120**	**E34EB4**	**10250T504**	**10250T514**	**E34EVB4**	**E34EHB4**
Gray	**10250T105**	**E34PB5**	—	**E34EB5**	**10250T505**	**10250T515**	**E34EVB5**	**E34EHB5**
White	**10250T106**	**E34PB6**	**10250T116**	**E34EB6**	**10250T506**	**10250T516**	**E34EVB6**	**E34EHB6**
Blue	**10250T108**	**E34PB7**	**10250T118**	**E34EB7**	**10250T508**	**10250T518**	**E34EVB7**	**E34EHB7**
Orange	**10250T109**	**E34PB8**	**10250T119**	**E34EB8**	**10250T509**	**10250T519**	**E34EVB8**	**E34EHB8**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

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

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

10250T Mushroom Button

E34 Mushroom Button

10250T Jumbo Mushroom Button

E34 Jumbo Mushroom Button

Mushroom Head Non-Illuminated Pushbuttons, Momentary Contact

	Mushroom Button		Anodized Aluminum Jumbo Mushroom Button	
Color	10250T Catalog Number	E34 Catalog Number	10250T ① Catalog Number	E34 ② Catalog Number
Black	**10250T121**	**E34LB1**	**10250T171**	**E34JB1**
Red	**10250T122**	**E34LB2**	**10250T172**	**E34JB2**
Red (EMERG. STOP)	—	—	**10250T17213**	**E34JB2N8**
Green	**10250T123**	**E34LB3**	**10250T173**	**E34JB3**
Yellow	**10250T124**	**E34LB4**	**10250T174**	**E34JB4**
Blue	**10250T129**	**E34LB6**	—	—

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

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

② Anodized aluminum head may not be suitable for some corrosive environments.

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Illuminated Pushbutton Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Momentary contact
- Illuminated
- Plastic lenses

10250T8_

E34EX8_

Illuminated Pushbuttons

Type	Voltage	Color	Contact	10250T LED/Lamp Number	10250T Catalog Number ①	E34 LED/Lamp Number	E34 Catalog Number ①
LED Lamp							
Full voltage	24 Vac/Vdc	Red	1NO-1NC	Bayonet base	**10250T828RD24**	Bayonet base	**E34EX828RD24**
		Green			**10250T828GD24**		**E34EX828GD24**
		Amber			**10250T828AD24**		**E34EX828AD24**
	120 Vac	Red	1NO-1NC		**10250T828RD2A**		**E34EX828RD2A**
		Green			**10250T828GD2A**		**E34EX828GD2A**
		Amber			**10250T828AD2A**		**E34EX828AD2A**
Transformer	120 Vac	Red	1NO-1NC		**10250T802RD06**	Bayonet base 6 Vac	**E34EX802RD06**
		Green			**10250T802GD06**		**E34EX802GD06**
		Amber			**10250T802AD06**		**E34EX802AD06**
Incandescent Lamp							
Full voltage	24 Vac/Vdc	Red	1NO-1NC	#757	**10250T818RD**	#757	**E34EX818RD**
		Green			**10250T818GD**		**E34EX818GD**
		Amber			**10250T818AD**		**E34EX818AD**
Resistor	120 Vac/Vdc	Red	1NO-1NC	120MB	**10250T824RD**	120MB	**E34EX824RD**
		Green			**10250T824GD**		**E34EX824GD**
		Amber			**10250T824AD**		**E34EX824AD**
Transformer	120 Vac	Red	1NO-1NC	#755	**10250T802RD**	#755 6 Vac	**E34EX802RD**
		Green			**10250T802GD**		**E34EX802GD**
		Amber			**10250T802AD**		**E34EX802AD**

10250TC_

E34V _

Lens Selection

Color	Suffix Code	Catalog Number	Color	Suffix Code	Catalog Number
10250T			**E34**		
Red	**R**	**10250TC21**	Red	**R**	**E34V2**
Green	**G**	**10250TC22**	Green	**G**	**E34V3**
Yellow	**Y**	**10250TC23**	Yellow	**Y**	**E34V4**
Amber	**A**	**10250TC43**	Amber	**A**	**E34V9**
Blue	**L**	**10250TC24**	Blue	**L**	**E34V6**
Clear	**C**	**10250TC25**	Clear	**C**	**E34V0**
White	**W**	**10250TC26**	White	**W**	**E34V5**

Note

① To order different color lens, simply substitute the underlined character in the catalog number with appropriate suffix code from Lens Selection table above. Example: 10250T828**Y**D24.

Guarded Illuminated Pushbutton Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Momentary contact
- Guarded illuminated
- Plastic lenses

10250T8_

E34EX8_

Guarded Illuminated Pushbuttons

Type	Voltage	Color	Contact	10250T LED/Lamp Number	10250T Catalog Number ①	E34 LED/Lamp Number	E34 Catalog Number ①
LED Lamp							
Full voltage	24 Vac/Vdc	Red	1NO-1NC	Bayonet base	**10250T828RG24**	Bayonet base	**E34EX828RG24**
		Green			**10250T828GG24**		**E34EX828GG24**
		Amber			**10250T828AG24**		**E34EX828AG24**
	120 Vac	Red	1NO-1NC		**10250T828RG2A**		**E34EX828RG2A**
		Green			**10250T828GG2A**		**E34EX828GG2A**
		Amber			**10250T828AG2A**		**E34EX828AG2A**
Transformer	120 Vac	Red	1NO-1NC		**10250T802RG06**		**E34EX802RG06**
		Green			**10250T802GG06**		**E34EX802GG06**
		Amber			**10250T802AG06**		**E34EX802AG06**
Incandescent Lamp							
Full voltage	24 Vac/Vdc	Red	1NO-1NC	#757	**10250T818RG**	#757	**E34EX818RG**
		Green			**10250T818GG**		**E34EX818GG**
		Amber			**10250T818AG**		**E34EX818AG**
Resistor	120 Vac/Vdc	Red	1NO-1NC	120MB	**10250T824RG**	120MB	**E34EX824RG**
		Green			**10250T824GG**		**E34EX824GG**
		Amber			**10250T824AG**		**E34EX824AG**
Transformer	120 Vac	Red	1NO-1NC	#755	**10250T802RG**	#755 6 Vac	**E34EX802RG**
		Green			**10250T802GG**		**E34EX802GG**
		Amber			**10250T802AG**		**E34EX802AG**

10250TC2_

E34V_

Lens Selection

Color	Suffix Code	Catalog Number	Color	Suffix Code	Catalog Number
10250T			**E34**		
Red	**R**	**10250TC21**	Red	**R**	**E34V2**
Green	**G**	**10250TC22**	Green	**G**	**E34V3**
Yellow	**Y**	**10250TC23**	Yellow	**Y**	**E34V4**
Amber	**A**	**10250TC43**	Amber	**A**	**E34V9**
Blue	**L**	**10250TC24**	Blue	**L**	**E34V6**
Clear	**C**	**10250TC25**	Clear	**C**	**E34V0**
White	**W**	**10250TC26**	White	**W**	**E34V5**

Note

① To order different color lens, simply substitute the underlined character in the catalog number with appropriate suffix code from Lens Selection table above. Example: 10250T828**Y**D24.

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Indicating Light Units

UL (NEMA) Type 3, 3R, 3S, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Standard
- Plastic lenses

10250T_

E34_

Indicating Lights

Type	Voltage	Color	LED/Lamp Number	10250T Catalog Number ①	E34 Catalog Number ①
LED Lamp					
Full voltage	24 Vac/Vdc	Red	Bayonet base	**10250T197HLRP24**	**E34FB197HLRP24**
		Green		**10250T197HLGP24**	**E34FB197HLGP24**
		Amber		**10250T197HLAP24**	**E34FB197HLAP24**
	120 Vac	Red		**10250T197HLRP2A**	**E34FB197HLRP2A**
		Green		**10250T197HLGP2A**	**E34FB197HLGP2A**
		Amber		**10250T197HLAP2A**	**E34FB197HLAP2A**
Transformer	120 Vac	Red		**10250T181HLRP06**	**E34TB120HLRP06**
		Green		**10250T181HLGP06**	**E34TB120HLGP06**
		Amber		**10250T181HLAP06**	**E34TB120HLAP06**
Incandescent Lamp					
Full voltage	24 Vac/Vdc	Red	#757	**10250T206HRP**	**E34FB24HRP**
		Green		**10250T206HGP**	**E34FB24HGP**
		Amber		**10250T206HAP**	**E34FB24HAP**
Resistor	120 Vac/Vdc	Red	120MB	**10250T201HRP**	**E34RB120HRP**
		Green		**10250T201HGP**	**E34RB120HGP**
		Amber		**10250T201HAP**	**E34RB120HAP**
Transformer	120 Vac	Red	#755	**10250T181HRP**	**E34TB120HRP**
		Green		**10250T181HGP**	**E34TB120HGP**
		Amber		**10250T181HAP**	**E34TB120HAP**

Plastic

Glass

Lens Selection

Color	Plastic Suffix Code	Plastic Catalog Number	Glass Suffix Code	Glass Catalog Number	Color	Plastic Suffix Code	Plastic Catalog Number	Glass Suffix Code	Glass Catalog Number
10250T					**E34**				
Red	**RP**	**10250TC1N**	**RG**	**10250TC7N**	Red	**RP**	**E34H2**	**RG**	**E34G2**
Green	**GP**	**10250TC2N**	**GG**	**10250TC8N**	Green	**GP**	**E34H3**	**GG**	**E34G3**
Amber	**AP**	**10250TC19N**	**AG**	**10250TC9N**	Amber	**AP**	**E34H9**	**AG**	**E34G9**
Yellow	**YP**	**10250TC3N**	—	—	Yellow	**YP**	**E34H4**	**YG**	**E34G4**
Blue	**LP**	**10250TC4N**	**LG**	**10250TC10N**	Blue	**LP**	**E34H6**	**LG**	**E34G6**
Clear	**CP**	**10250TC5N**	**CG**	**10250TC11N**	Clear	**CP**	**E34H0**	**CG**	**E34G0**
White	**WP**	**10250TC6N**	**WG**	**10250TC12N**	White	**WP**	**E34H5**	**WG**	**E34G5**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

① To order different color lens, simply substitute the underlined characters in the catalog number with appropriate suffix code from the Lens Selection table above. Example: 10250T201HYP.

Illuminated Pushbuttons and Indicating Lights

NEC Class I Division 2, Groups B, C and D

10250T Illuminated Pushbutton

E34 Illuminated Pushbutton

10250T Indicating Light

E34 Indicating Light

Operators without Lenses

Type	Voltage	LED/Lamp Number	Illuminated Pushbutton 10250T Catalog Number	Illuminated Pushbutton E34 Catalog Number	Indicating Light 10250T Catalog Number	Indicating Light E34 Catalog Number
LED Light Unit Type (LEDs not included) ①						
Full voltage	—	Bayonet base	**10250T397HL**	**E34CB497HL**	**10250T197HL**	**E34FB197HL**
Transformer AC only	24		**10250T416HL**	**E34XB024HL**	—	—
	120		**10250T411HL**	**E34XB120HL**	**10250T181HL**	**E34TB120HL**
	240		**10250T412HL**	**E34XB240HL**	**10250T182HL**	**E34TB240HL**
	277		**10250T419HL**	**E34XB277HL**	**10250T198HL**	**E34TB277HL**
	380		**10250T413HL**	**E34XB380HL**	**10250T183HL**	**E34TB380HL**
	480		**10250T414HL**	**E34XB480HL**	**10250T184HL**	**E34TB480HL**
	600		**10250T415HL**	**E34XB600HL**	**10250T185HL**	**E34TB600HL**
Incandescent Light Unit Type						
Full voltage AC/DC	6	#755	**10250T473H**	**E34CB06H**	**10250T203H**	**E34FB06H**
	12	#756	**10250T474H**	**E34CB12H**	**10250T204H**	**E34FB12H**
	24	#757	**10250T476H**	**E34CB24H**	**10250T206H**	**E34FB24H**
	32	#1828	**10250T477H**	**E34CB32H**	**10250T207H**	**E34FB32H**
	48	#1835	**10250T478H**	**E34CB48H**	**10250T208H**	**E34FB48H**
Resistor ② AC/DC	120	120MB	**10250T471H**	**E34SB120H**	**10250T201H**	**E34RB120H**
	240	120MB	**10250T472H**	**E34SB240H**	**10250T202H**	**E34RB240H**
Transformer AC only	24	#755	**10250T416H**	**E34XB024H**	—	—
	120		**10250T411H**	**E34XB120H**	**10250T181H**	**E34TB120H**
	240		**10250T412H**	**E34XB240H**	**10250T182H**	**E34TB240H**
	277		**10250T419H**	**E34XB277H**	**10250T198H**	**E34TB277H**
	380		**10250T413H**	**E34XB380H**	**10250T183H**	**E34TB380H**
	480		**10250T414H**	**E34XB480H**	**10250T184H**	**E34TB480H**
	600		**10250T415H**	**E34XB600H**	**10250T185H**	**E34TB600H**
Neon AC/DC	120	NE51H-R-22	—	—	**10250T226H**	**E34NB120H**
	240	NE51H-4-68	—	—	**10250T227H**	**E34NB240H**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

① These units do not include lamps. Order LED separately to match lens color from the LED Selection table on **Page V7-T1-353.**

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

Indicating Light Lenses

Plastic

10250TC_

E34H_

Glass

10250TC_

E34G_

Color	10250T Catalog Number	E34 Catalog Number
Plastic		
Red	**10250TC1N**	**E34H2**
Green	**10250TC2N**	**E34H3**
Amber	**10250TC19N**	**E34H9**
Yellow	**10250TC3N**	**E34H4**
Blue	**10250TC4N**	**E34H6**
Clear	**10250TC5N**	**E34H0**
White	**10250TC6N**	**E34H5**
Glass		
Red	**10250TC7N**	**E34G2**
Green	**10250TC8N**	**E34G3**
Amber	**10250TC9N**	**E34G9**
Yellow	—	**E34G4**
Blue	**10250TC10N**	**E34G6**
Clear	**10250TC11N**	**E34G0**
White	**10250TC12N**	**E34G5**

Illuminated Pushbutton Lenses

10250TC_

E34V_

Color	10250T Catalog Number	E34 Catalog Number
Red	**10250TC21**	**E34V2**
Green	**10250TC22**	**E34V3**
Yellow	**10250TC23**	**E34V4**
Amber	**10250TC43**	**E34V9**
Blue	**10250TC24**	**E34V6**
Clear	**10250TC25**	**E34V0**
White	**10250TC26**	**E34V5**

1

Push-Pull Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Two- and three-position
- Non-illuminated

10250T71_

E34EX71_

Two-Position Maintained Push, Maintained Pull

Operator Function (Position) ①

Maintained—Pull	Maintained—Push	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Red Standard Push-Pull ② 10250T Catalog Number	Red Standard Push-Pull ② E34 Catalog Number
0 X	X 0	1NO 1NC			**10250T714R**	**E34EX714R**
0 X 0 X	X 0 X 0	2NO 2NC			**10250T715R**	**E34EX715R**

10250T71_

E34EX71_

Three-Position Maintained Push, Momentary Pull

Operator Function (Position) ①

Momentary—Pull	Maintained—Intermediate	Maintained—Push	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Red Standard Push-Pull ③ 10250T Catalog Number	Red Standard Push-Pull ③ E34 Catalog Number
0 X	0 0	X 0	1NO 1NC			**10250T716R**	**E34EX716R**
X X	0 X	0 0	1NC 1NC			**10250T717R**	**E34EX717R**

Notes

① Bolded circuit corresponds to "X-O" circuit selection. X = closed circuit, O = open circuit.

② To order different type or color buttons, simply substitute underlined character with appropriate suffix code from the Button and Color Selection table on **Page V7-T1-346**. Example: 10250T714**G**.

③ To order different type or color buttons, simply substitute underlined character with appropriate suffix code from the Button and Color Selection table on **Page V7-T1-346**. Example: 10250T716**G**.

1

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Two- and three-position
- Non-illuminated

10250T7_

E34EX7_

Three-Position Momentary Push, Momentary Pull

Operator Function (Position) ①						Red Standard Push-Pull ②	
Momentary—Pull	Maintained—Intermediate	Momentary—Push	Contact Type	Mounting Location ① 1	2	10250T Catalog Number	E34 Catalog Number
0 X	0 0	X 0	1NO 1NC			**10250T718R**	**E34EX718R**
X X	0 X	0 0	1NC 1NC			**10250T721R**	**E34EX721R**

Button and Color Selection

Standard

Jumbo Mushroom Head

Color	Suffix Code	10250T Catalog Number	E34 Catalog Number
Standard			
Red	**R**	**10250TB62**	**E34C2**
Red (EMERG. STOP)	**E**	**10250TB63**	**E34C2N8**
Green	**G**	**10250TB61**	**E34C3**
Black	**B**	**10250TB60**	**E34C1**
Blue	**L**	**10250TB64**	**E34C6**
Jumbo Mushroom Head (Anodized) Aluminum			
Red	**RJ**	**10250TJ62**	**E34J2**
Red (EMERG. STOP)	**EJ**	**10250TJ63**	**E34J2N8**
Green	**GJ**	**10250TJ61**	—
Black	**BJ**	**10250TJ60**	—
Yellow	**YJ**	**10250TJ64**	—

Notes

① Bolded circuit corresponds to "X-0" circuit selection. X = closed circuit, 0 = open circuit.

② To order different type or color buttons, simply substitute underlined character with appropriate suffix code from the Button and Color Selection table above. Example: 10250T718**G**.

1

Illuminated Push-Pull Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Two-position maintained
- Illuminated

10250T8_

E34EX8_

Two-Position Illuminated Maintained Push, Maintained Pull

Operator Function (Position) ①							Red Standard Push-Pull ②	
Maintained—Pull	Maintained—Push	Type	Voltage	Contact Type	Mounting Location ① 1	2	10250T Catalog Number	E34 Catalog Number
LED Lamp								
O X	X O	Full voltage	24 Vac/Vdc	1NO 1NC			**10250T853RD24**	**E34EX853RD24**
			120 Vac				**10250T853RD2A**	**E34EX853RD2A**
		Transformer	24 Vac				**10250T843RD06**	**E34EX843RD06**
			120 Vac				**10250T844RD06**	**E34EX844RD06**
Incandescent Lamp								
O X	X O	Full voltage	24 Vac/Vdc	1NO 1NC			**10250T849RD**	**E34EX849RD**
		Resistor	120 Vac/Vdc				**10250T851RD**	**E34EX851RD**
		Transformer	24 Vac				**10250T843RD**	**E34EX843RD**
			120 Vac				**10250T844RD**	**E34EX844RD**

Lens and Color Selection

Standard

Side-Lighted (Anodized) Aluminum

HD Aluminum with Transparent Center

Color	10250T Suffix Code	10250T Catalog Number	E34 Suffix Code	E34 Catalog Number
Standard				
Red	**RD**	**10250TC47**	**RD**	**E34M2**
Red (EMERG. STOP)	**ED**	**10250TC53**	**ED**	**E34M2N8**
Green	**GD**	**10250TC48**	**GD**	**E34M3**
Blue	**LD**	**10250TC49**	**LD**	**E34M6**
Amber	**AD**	**10250TC50**	**AD**	**E34M9**
White	**WD**	**10250TC51**	**WD**	**E34M5**
Clear	**CD**	**10250TC52**	**CD**	**E34M0**
Side-Lighted (Anodized) Aluminum				
Red	**RS**	**10250TC57**	—	—
Red (EMERG. STOP)	**ES**	**10250TC63**	—	—
Green	**GS**	**10250TC58**	—	—
Blue	**LS**	**10250TC59**	—	—
Amber	**AS**	**10250TC64**	—	—
Yellow	**YS**	**10250TC60**		
White	**WS**	**10250TC61**	—	—
Clear	**CS**	**10250TC62**	—	—
Heavy-Duty Aluminum with Transparent Center				
Red	**RH**	**10250TC65**	—	—
Green	**GH**	**10250TC66**	—	—
Amber	**AH**	**10250TC67**	—	—

Notes

① Bolded circuit corresponds to "X-O" circuit selection. X = closed circuit, O = open circuit.

② To order different type or color lens, simply substitute the underlined characters with appropriate suffix code from the Lens and Color Selection table above. Example: 10250T851**GS**.

1

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Three-position—maintained push, momentary pull
- Illuminated

10250T8_

E34EX8_

Three-Position Illuminated Maintained Push, Momentary Pull

Operator Function (Position) ①

Momentary—Pull	Maintained—Intermediate	Maintained—Push	Type	Voltage	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Red Standard Push-Pull ② 10250T Catalog Number	Red Standard Push-Pull ② E34 Catalog Number
LED Lamp									
0	0	X	Full voltage	24 Vac/Vdc	1NO 1NC			**10250T864RD24**	**E34EX864RD24**
X	0	0		120 Vac				**10250T864RD2A**	**E34EX864RD2A**
			Transformer	24 Vac				**10250T854RD06**	**E34EX854RD06**
				120 Vac				**10250T855RD06**	**E34EX855RD06**
X	0	0	Full voltage	24 Vac/Vdc	1NC 1NC			**10250T875RD24**	**E34EX875RD24**
X	X	0		120 Vac				**10250T875RD2A**	**E34EX875RD2A**
			Transformer	24 Vac				**10250T865RD06**	**E34EX865RD06**
				120 Vac				**10250T866RD06**	**E34EX866RD06**
Incandescent Lamp									
0	0	X	Full voltage	24 Vac/Vdc	1NO 1NC			**10250T860RD**	**E34EX860RD**
X	0	0	Resistor	120 Vac				**10250T862RD**	**E34EX862RD**
			Transformer	24 Vac				**10250T854RD**	**E34EX854RD**
				120 Vac				**10250T855RD**	**E34EX855RD**
X	0	0	Full voltage	24 Vac/Vdc	1NC 1NC			**10250T871RD**	**E34EX871RD**
X	X	0	Resistor	120 Vac				**10250T873RD**	**E34EX873RD**
			Transformer	24 Vac				**10250T865RD**	**E34EX865RD**
				120 Vac				**10250T866RD**	**E34EX866RD**

Notes

① Bolded circuit corresponds to "X-O" circuit selection. X = closed circuit, O = open circuit.

② To order different type or color lens, simply substitute the underlined characters with appropriate suffix code from the Lens and Color Selection table on the bottom of **Page V7-T1-347.** Example: 10250T862**AS**.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Three-position—momentary
- Illuminated

10250T8_

E34EX8_

Three-Position Illuminated Momentary Push, Momentary Pull

Operator Function (Position) ①

Momentary—Pull	Maintained—Intermediate	Maintained—Push	Type	Voltage	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Red Standard Push-Pull ② 10250T Catalog Number	Red Standard Push-Pull ② E34 Catalog Number
LED Lamp									
0	0	X	Full voltage	24 Vac/Vdc	1NO 1NC			**10250T886RD24**	**E34EX886RD24**
X	0	0		120 Vac				**10250T886RD2A**	**E34EX886RD2A**
			Transformer	24 Vac				**10250T876RD06**	**E34EX876RD06**
				120 Vac				**10250T877RD06**	**E34EX877RD06**
X	0	0	Full voltage	24 Vac/Vdc	1NC 1NC			**10250T897RD24**	**E34EX897RD24**
X	X	0		120 Vac				**10250T897RD2A**	**E34EX897RD2A**
			Transformer	24 Vac				**10250T887RD06**	**E34EX887RD06**
				120 Vac				**10250T888RD06**	**E34EX888RD06**
Incandescent Lamp									
0	0	X	Full voltage	24 Vac/Vdc	1NO 1NC			**10250T882RD**	**E34EX882RD**
X	0	0	Resistor	120 Vac				**10250T884RD**	**E34EX884RD**
			Transformer	24 Vac				**10250T876RD**	**E34EX876RD**
				120 Vac				**10250T877RD**	**E34EX877RD**
X	0	0	Full voltage	24 Vac/Vdc	1NC 1NC			**10250T893RD**	**E34EX893RD**
X	X	0	Resistor	120 Vac				**10250T895RD**	**E34EX895RD**
			Transformer	24 Vac				**10250T887RD**	**E34EX887RD**
				120 Vac				**10250T888RD**	**E34EX888RD**

Notes

① Bolded circuit corresponds to "X-0" circuit selection. X = closed circuit, 0 = open circuit.

② To order different type or color lens, simply substitute the underlined characters with appropriate suffix code from the Lens and Color Selection table on the bottom of **Page V7-T1-347.** Example: 10250T862**AS**.

1

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:

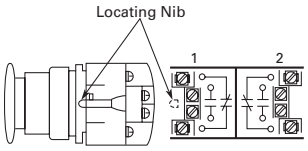
- **Maintained**—(Two-position). Maintains in the pulled or pushed position until manually actuated to the opposite mode.
- **Momentary**—(Three-position). Spring returns to an intermediate position when pulled or pushed and released.
- **Momentary Pull, Maintained Push**—(Three-position). Spring returns 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.

Application Guide

To assist in the selection of contact blocks, the sketch below shows pictorially by symbols **1** and **2** 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).

Locating Nibs



10250T_

E34G_

Push-Pull Operator Components

Type of Operator	Contact Block	Operator Position and Circuit Arrangement: Out—Pull — Contact Block Mounting Location 1	2	Intermediate 1	2	In—Push 1	2	10250T Catalog Number	E34 Catalog Number
Two-Position Operator without Lens									
Maintained push-pull	1NO 1NC	0 X	or 0 X	No intermediate position		X 0	or X 0	**10250T5**	**E34GDB**
	2NO 2NC	0 X	0 X			X 0	X 0		
Three-Position Operator without Lens									
Momentary push-pull	1NO 1NC	0 X	or 0 X	0 0	or 0 X	X 0	or 0 0	**10250T4**	**E34GEB**
Maintained push-momentary pull	2NO 2NC	0 X	0 X	0 0	0 X	X 0	0 0	**10250T9**	**E34GFB**
Momentary push-pull	1NO 1NC	0 X	or 0 X	0 0	or 0 0	X 0	or X 0	**10250T10**	**E34GHB**
	2NO 2NC	0 X	0 X	0 0	0 0	X 0	X 0		

Note

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

Push-Pull Light Units, Lenses and Buttons

NEC Class I Division 2 Groups B, C and D

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	**10250T97HL**
	Transformer AC only 50/60 Hz	24		**10250T89HL**
		120		**10250T63HL**
		208		**10250T64HL**
		240		**10250T65HL**
		277		**10250T82HL**
		380		**10250T66HL**
		480		**10250T67HL**
		600		**10250T68HL**
Incandescent	Full voltage AC or DC	6	#755 #756 #757 #1828	**10250T69H**
		12		**10250T70H**
		24/28		**10250T79H**
		32		**10250T83H**
	Resistor AC or DC	120	120MB	**10250T80H**
		240		**10250T81H**
	Transformer AC only 50/60 Hz	24	#755	**10250T89H**
		120		**10250T63H**
		208		**10250T64H**
		240		**10250T65H**
		277		**10250T82H**
		380		**10250T66H**
		480		**10250T67H**
		600		**10250T68H**

Note

① These units do not include lamps. Order LED separately to match lens color from table on **Page V7-T1-353**.

Alternate Lenses for Illuminated Push-Pull Devices

Standard

Color	10250T Catalog Number	E34 Catalog Number
Standard		
Red	**10250TC47**	**E34M2**
Red (EMERG. STOP)	**10250TC53**	**E34M2N8**
Green	**10250TC48**	**E34M3**
Blue	**10250TC49**	**E34M6**
Amber	**10250TC50**	**E34M9**
White	**10250TC51**	**E34M5**
Clear	**10250TC52**	**E34M0**

Side-Lighted (Anodized) Aluminum

Side-Lighted Anodized Aluminum Ring		
Red	**10250TC57**	—
Red (EMERG. STOP)	**10250TC63**	—
Green	**10250TC58**	—
Blue	**10250TC59**	—
Amber	**10250TC64**	—
Yellow	**10250TC60**	—
White	**10250TC61**	—
Clear	**10250TC62**	—

HD Aluminum with Transparent Center

Heavy-Duty Aluminum with Transparent Center		
Red	**10250TC65**	—
Green	**10250TC66**	—
Amber	**10250TC67**	—

Buttons for Non-Illuminated Push-Pull Devices

Standard

Color	10250T Catalog Number	E34 Catalog Number
Standard		
Red	**10250TB62**	**E34C2**
Red (EMERG. STOP)	**10250TB63**	**E34C2N8**
Green	**10250TB61**	**E34C3**
Black	**10250TB60**	**E34C1**
Blue	**10250TB64**	**E34C6**

Jumbo Mushroom Head

Jumbo Mushroom Head (Anodized) Aluminum ①		
Red	**10250TJ62**	**E34J2**
Red (EMERG. STOP)	**10250TJ63**	**E34J2N8**
Green	**10250TJ61**	—
Black	**10250TJ60**	—
Yellow	**10250TJ64**	—

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light.

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

Standard LED Lamp

LED Selection

Voltage	Color	Catalog Number
6 Vac/Vdc suitable for use with transformers	Red	**E22LED006RN**
	Orange	**E22LED006ON**
	Yellow	**E22LED006YN**
	Green	**E22LED006GN**
	Blue	**E22LED006BN**
	White	**E22LED006WN**
12 Vac/Vdc	Red	**E22LED012RN**
	Orange	**E22LED012ON**
	Yellow	**E22LED012YN**
	Green	**E22LED012GN**
	Blue	**E22LED012BN**
	White	**E22LED012WN**
24 Vac/Vdc	Red	**E22LED024RN**
	Orange	**E22LED024ON**
	Yellow	**E22LED024YN**
	Green	**E22LED024GN**
	Blue	**E22LED024BN**
	White	**E22LED024WN**
48 Vac/Vdc	Red	**E22LED048RN**
	Orange	**E22LED048ON**
	Yellow	**E22LED048YN**
	Green	**E22LED048GN**
	Blue	**E22LED048BN**
	White	**E22LED048WN**
60 Vac/Vdc	Red	**E22LED060RN**
	Orange	**E22LED060ON**
	Yellow	**E22LED060YN**
	Green	**E22LED060GN**
	Blue	**E22LED060BN**
	White	**E22LED060WN**
120 Vac	Red	**E22LED120RA**
	Orange	**E22LED120OA**
	Yellow	**E22LED120YA**
	Green	**E22LED120GA**
	Blue	**E22LED120BA**
	White	**E22LED120WA**
120 Vdc	Red	**E22LED120RD**
	Orange	**E22LED120OD**
	Yellow	**E22LED120YD**
	Green	**E22LED120GD**
	Blue	**E22LED120BD**
	White	**E22LED120WD**

Note

For a complete listing of all LEDs available, see **Page V7-T1-249**.

1

Selector Switch Units

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Two- and three-position
- Non-illuminated

10250T72_

E34EX72_

Two-Position Selector Switch—Non-Illuminated

Operator Position ①		Operator Action ②	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Cam Code	Black Knob—Selector Switch ③ 10250T Catalog Number	Black Knob—Selector Switch ③ E34 Catalog Number
X	0	M M	1NC 1NO			1	**10250T722BK**	**E34EX722BK**
0	X							
		M S					**10250T724BK**	**E34EX724BK**
X	0	M M	1NC 1NO			1	**10250T723BK**	**E34EX723BK**
0	X							
X	0		1NC 1NO					
0	X	M S					**10250T725BK**	**E34EX725BK**

10250T_

Three-Position Selector Switch—Non-Illuminated

Operator Position ①			Operator Action ②	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Cam Code	Black Knob—Selector Switch ④ 10250T Catalog Number	Black Knob—Selector Switch ④ E34 Catalog Number
X	0	0	M M M	1NO 1NO			3	**10250T726BK**	**E34EX726BK**
0	0	X							
			M S M					**10250T728BK**	**E34EX728BK**
			M S S					**10250T730BK**	**E34EX730BK**
			M M S					**10250T732BK**	**E34EX732BK**
X	0	0	M M M	1NO 1NC-1NC (Series) 1NO			3	**10250T727BK**	**E34EX727BK**
0	X	0							
0	0	X							
			M S M					**10250T729BK**	**E34EX729BK**
			M S S					**10250T731BK**	**E34EX731BK**
			M M S					**10250T733BK**	**E34EX733BK**

Notes

① Bolded circuit corresponds to "X-O" circuit selection. X = closed circuit, O = open circuit.

② M = Maintained. S = Spring return in direction of arrow (→).

③ To order different type or color selector switch, simply substitute the underlined characters with appropriate suffix code from the table on **Page V7-T1-355.**
Example: 10250T722**LL**. For keyed selector switch, substitute the underlined characters with **T_ (cam)+_ (key removal position)**. Example: 10250T722**T13**.

④ To order different type or color selector switch, simply substitute the underlined characters with appropriate suffix code from the Switch and Color Selection table on **Page V7-T1-355**.
Example: 10250T726**LL**. For keyed selector switch, substitute the underlined characters with **T_ (cam)+_ (key removal position).** Example: 10250T726**T13**.

UL (NEMA) Type 3, 3R, 4, 4X, 12, 13, NEC Class I Division 2, Groups B, C and D

- Four-position maintained
- Non-illuminated

10250T743_

E34EX743_

Four-Position Selector Switch—Non-Illuminated

Operator Position ①				Operator Action ②	Contact Type	Mounting Location ① 1	Mounting Location ① 2	Cam Code	Black Knob—Selector Switch ③ 10250T Catalog Number	Black Knob—Selector Switch ③ E34 Catalog Number
X	0	0	0	M M	1NC			7	**10250T743BK**	**E34EX743BK**
0	X	0	0		1NO					
0	0	X	0		1NO					
0	0	0	X	M M	1NC					

Knob

Lever

Coin Slot ⑤

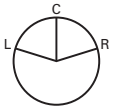
Switch and Color Selection

Color	Knob Suffix Code	Lever Suffix Code	Lever ④ Suffix Code	Coin Slot ⑤ Suffix Code
Black	**BK**	**BL**	**BA**	**BC**
Red	**RK**	**RL**	**RA**	**RC**
Green	**GK**	**GL**	**GA**	**GC**
Yellow	**YK**	**YL**	**YA**	**YC**
White	**WK**	**WL**	**WA**	**WC**
Gray	**AK**	**AL**	**AA**	**AC**
Blue	**LK**	**LL**	**LA**	**LC**
Orange	**NK**	**NL**	**NA**	**NC**

Key Operated Selection

Number of Position	Operator Action ⑥	Suffix and Removal Position
2	M M	T1 + 1, 2, 3
	M ← S	T1 + 2
3	M M M	T3 + 1–7
	S → M M	T3 + 1, 4, 5
	S → M ← S	T3 + 4
	M M ← S	T3 + 2, 4, 6
4	MMMM	T7 + 7

Key Removal Positions ⑦



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

Notes

① Bolded circuit corresponds to "X-0" circuit selection. X = closed circuit, 0 = open circuit.
② M = Maintained.
③ To order different type or color selector switch, simply substitute the underlined characters with appropriate suffix code from the Switch and Color Selection table above. Example: 10250T743**LL**. For keyed selector switch, substitute the underlined characters with **T_ (cam) + _ (key removal position).** Example: 10250T743**T77**.
④ Designed for added ingress protection. For use in maintained operators only.
⑤ 10250T only.
⑥ M = Maintained. S = Spring return in direction of arrow (→).
⑦ Key removal in "spring return from" positions not recommended.

1

Selector Switch Selection

10250T

E34

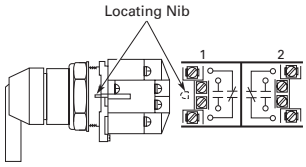
Cam and Contact Block Selection

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-T1-358**) shows how that contact will act after assembly to the operator with the selected cam shape. X = closed circuit, O = open circuit.
- One NO-NC contact block may be mounted behind each plunger of the mounting adapter for a total of four circuits.
- 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 1 (locating nib side) and position 2 (opposite of locating nib). The position designations give direction in selecting and mounting of the contact blocks.

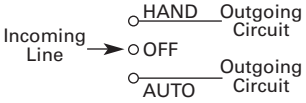
Contact Circuit Locations



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:

HAND OFF AUTO
X O O

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:

HAND OFF AUTO
O O X

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

X O O
O O X

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 below. (1) or (2) = mounting location from chart above:

	Cam 2	Cam 3
X O O	(1)NO-(2)NC ①	**(1)NO**
O O X	(2)NO	**(2)NO**

It becomes obvious that cam 3 is the better choice because the series connection can be avoided, making it simpler to wire.

Step 4: Contact Block Selection.
Having selected the cam, contact block selection is simply a matter of determining if you require one NO-NC contact block (Cat. No 10250T1H) or two. Given the limitations of the factory sealed contact block and the desired "X-O" application, you may have circuits that will not be needed—as seen here with the two additional NC circuits. (1) or (2) = mounting location from chart above.

Qty	Catalog No.	Cam 3	
2	10250TIH	**(1)NO**	(2)NC
		(1)NC	**(2)NO**

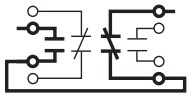
Step 5: Selector Switch Operator.
Lastly, you have to choose from the many types of operators—knob and lever in various colors or keyed. Also what combinations of maintained and spring return functions are required. Selection of these operators can be found on **Page V7-T1-359**. For the example in step 4, you may want a three-position maintained black knob, cam 3—Catalog Number 10250T1323 (or 34VHBK1).

The Complete Switch:
10250T1323 (or 34VHBK1) with two 10250T1H or for one composite catalog number—10250T726BK (or E34EX726BK) found on **Page V7-T1-354.**

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

X = Closed circuit
O = Open circuit

Example Selection Table

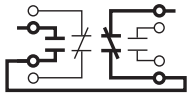
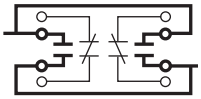
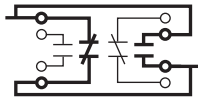
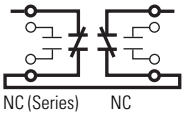
No.	Desired Circuit and Operator Position			Cam Code #2 Contact Blocks and Mounting Location		Cam Code #3 Contact Blocks and Mounting Location	
				1	2	1	2
1	X	O	O	 NO	NC ①	NO	—
4	O	O	X	—	NO	—	NO

Note
① Wired in series.

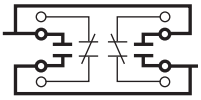
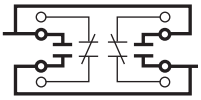
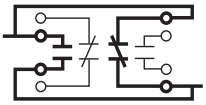
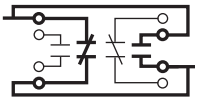
Two-Position Selector Switch

Number	Desired Circuit and Operator Position		Cam Code #1 Contact Blocks and Mounting Location 1	2
1	X	0	NC	NC
2	0	X	NO	NO

Three-Position Selector Switch

No.	Desired Circuit and Operator Position			Cam Code #2 Contact Blocks and Mounting Location 1	2	Cam Code #3 Contact Blocks and Mounting Location 1	2
1	X	0	0	 NO (Series) NC		NO	—
2	X	X	0	—	NC	—	NC
3	X	0	X	NO	—	 NO (Parallel)	NO
4	0	0	X	—	NO	—	NO
5	0	X	X	 NC (Parallel)	NO	NC	—
6	0	X	0	NC	—	 NC (Series)	NC

Four-Position Selector Switch

Number	Desired Circuit and Operator Position				Cam Code #7 Contact Blocks and Mounting Location 1	2
1	X	0	0	0	NC	—
2	0	X	0	0	—	NO
3	0	0	X	0	NO	—
4	0	0	0	X	—	NC
5	X	0	0	X	 NC (Parallel)	NC
6	0	X	X	0	 NO (Parallel)	NO
7	0	0	X	X	 NO (Parallel)	NC
8	X	X	0	0	 NC (Parallel)	NO
9	0	X	0	X	—	NO/NC (Parallel)
10	X	0	X	0	NO/NC (Parallel)	—

Selector Switch Operators

10250T Selector Switch Operators with Caps

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

Black Knob Selector Switch

Black Lever Selector Switch

10250T Selector Switch Operators with Caps

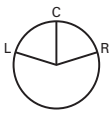
Positions	Operator Action ①	Black Knob Selector Switch—Vertical Mounting ② Cam Code ③	Black Knob Selector Switch—Vertical Mounting ② Catalog Number	Black Lever Selector Switch—Vertical Mounting ② Cam Code ③	Black Lever Selector Switch—Vertical Mounting ② Catalog Number
Two-position—60° throw		1	**10250T1311**	1	**10250T3011**
		1	**10250T1371**	1	**10250T3071**
Three-position—60° throw		2	**10250T1322**	2	**10250T3022**
		3	**10250T1323**	3	**10250T3023**
		2	**10250T1332**	2	**10250T3032**
		3	**10250T1333**	3	**10250T3033**
		2	**10250T1342**	2	**10250T3042**
		3	**10250T1343**	3	**10250T3043**
		2	**10250T1352**	2	**10250T3052**
		3	**10250T1353**	3	**10250T3053**
Four-position—40° throw		7	**10250T1367**	7	**10250T3067**

Horizontal Mounting

10250T Key Operators with Cam

Positions	Operator Action ①	Cam Code ③	Optional Key Removal Positions ④	Vertical Mounting Catalog Number ④	Horizontal Mounting Catalog Number ④
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_**
		2	2, 4, 6	**10250T1652_**	**10250T1662_**
		3		**10250T1653_**	**10250T1663_**
Four-position—40° throw		7	7	**10250T1677_**	**10250T1687_**

Key Removal Positions



Key Removal Positions ⑤

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

Replacement Keys or Dissimilar Locks for Above Key Operators

Listed operators have identical locks and keys (Key Code H661) Catalog Number 10250ED824.

Replacement Keys

Description	Catalog Number
Replacement keys (code **H661**)	**10250ED824**

Notes

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

② Field convertible to horizontal mounting or order operator only and separate operator cap.

③ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and table on **Pages V7-T1-356** to **V7-T1-358**.

④ Choose key removal position required for application from table above. Add key removal code no. to listed catalog number. Example: 10250T1511**2**.

⑤ Key removal in "spring return from" positions not recommended.

1

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

Black Knob Selector Switch

E34 Selector Switch Operators with Knob Assembled

Positions	Operator Action ①	Black Knob Selector Switch—Vertical Mounting ② Cam Code ③	Catalog Number ④
Two-position—60° throw	M M	1	**E34VFBK1**
	M S	1	**E34VEBK1**
Three-position—60° throw	M M M	2	**E34VGBK1**
		3	**E34VHBK1**
	S M M	2	**E34VJBK1**
		3	**E34VKBK1**
	S M S	2	**E34VLBK1**
		3	**E34VMBK1**
	M M S	2	**E34VNBK1**
		3	**E34VPBK1**
Four-position—40° throw	M M M M	7	**E34VTBK1**

E34KFB_

E34 Key Operators with Cam and Cap

Positions	Operator Action ①	Cam Code ③	Key Removal Positions ⑤	Vertical Mounting Catalog Number	Horizontal Mounting Catalog Number
Two-position—60° throw	M M	1	1, 2, 3	**E34KFB_**	**E34KFHB_**
	M S	1	2	**E34KEB_**	**E34KEHB_**
Three-position—60° throw	M M M	2	1–7	**E34KGB_**	**E34KGHB_**
		3		**E34KHB_**	**E34KHHB_**
	S M M	2	1, 4, 5	**E34KJB_**	**E34KJHB_**
		3		**E34KKB_**	**E34KKHB_**
	S M S	2	4	**E34KLB_**	**E34KLHB_**
		3		**E34KMB_**	**E34KMHB_**
	M M S	2	2, 4, 6	**E34KNB_**	**E34KNHB_**
		3		**E34KPB_**	**E34KPHB_**
Four-position—40° throw	M M M M	7	7	**E34KTB_**	**E34KTHB_**

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Page V7-T1-359**.

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

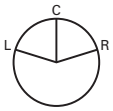
② Field convertible to horizontal mounting.

③ For selection of the proper cam and contact block to obtain the proper circuit sequence, see selection instructions and table on **Pages V7-T1-356** to **V7-T1-358**.

④ For other colors of either knob or lever, replace the underlined characters of the catalog number with the appropriate suffix code from Alternate Knobs and Levers table on **Page V7-T1-361**. Example: E34VFB**L2**.

⑤ Choose key removal position required for application from table on **Page V7-T1-361**. Add key removal code no. to listed catalog number. Example: E34KFB**2**.

Key Removal Positions



Key Removal Positions

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

Knob

Lever

Lever for Added Ingress Protection

Alternate Knobs and Levers for Operators ①

Color	Knob Suffix Code	Knob Catalog Number	Lever Suffix Code	Lever Catalog Number	Lever Designed for Added Ingress Protection ② Suffix Code	Lever Designed for Added Ingress Protection ② Catalog Number
Black	**K1**	**E34K1**	**L1**	**E34L1**	**A1**	**E34A1**
Red	**K2**	**E34K2**	**L2**	**E34L2**	**A2**	**E34A2**
Green	**K3**	**E34K3**	**L3**	**E34L3**	**A3**	**E34A3**
Yellow	**K4**	**E34K4**	**L4**	**E34L4**	**A4**	**E34A4**
White	**K5**	**E34K5**	**L5**	**E34L5**	**A5**	**E34A5**
Blue	**K6**	**E34K6**	**L6**	**E34L6**	**A6**	**E34A6**
Gray	**K7**	**E34K7**	**L7**	**E34L7**	**A7**	**E34A7**
Orange	**K8**	**E34K8**	**L8**	**E34L8**	**A8**	**E34A8**

Notes

① Key removal in "spring return from" positions not recommended.

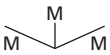
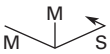
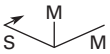
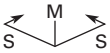
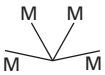
② For use on maintained operators only.

1

Illuminated Selector Switch Operators

Two-Position Maint. Selector Switch

10250T Illuminated Selector Switch Operator Only without Knob or Lever

Position	Operator Action ①	Transformer Type—50/60 Hz, 6V #755 Lamp: Cam Code ③	Voltage	Catalog and Code Number ②	Full Voltage Type—AC or DC ④, Lamps: 6V—#755, 12V—#756, 24V—#757, 48V—#1835, 120/240V—120MB: Cam Code ③	Voltage	Catalog and Code Number ②
Two-position—60° throw		1	24	**10250T5961H**	1	6	**10250T6201H**
			120	**10250T5971H**		12	**10250T6211H**
			208	**10250T6511H**		24	**10250T6221H**
			240	**10250T5981H**		48	**10250T6231H**
			380	**10250T5991H**		120	**10250T6361H**
			480	**10250T6001H**		240 ⑤	**10250T6371H**
			600	**10250T6011H**			
Three-position—60° throw		+ 2 or 3	24	**10250T602_H**	+ 2 or 3	6	**10250T624_H**
			120	**10250T603_H**		12	**10250T625_H**
			208	**10250T652_H**		24	**10250T626_H**
			240	**10250T604_H**		48	**10250T627_H**
			380	**10250T605_H**		120	**10250T638_H**
			480	**10250T607_H**		240 ⑤	**10250T639_H**
			600	**10250T607_H**			
		+ 2 or 3	120	**10250T620_H**	+ 2 or 3	120	**10250T622_H**
			240	**10250T656_H**			
		+ 2 or 3	120	**10250T621_H**	+ 2 or 3	120	**10250T623_H**
			240	**10250T662_H**			
		+ 2 or 3	24	**10250T614_H**	+ 2 or 3	6	**10250T628_H**
			120	**10250T615_H**		12	**10250T629_H**
			208	**10250T653_H**		24	**10250T630_H**
			240	**10250T616_H**		48	**10250T631_H**
			380	**10250T617_H**		120	**10250T640_H**
			480	**10250T618_H**		240 ⑤	**10250T641_H**
			600	**10250T619_H**			
Four-position—40° throw		7	24	**10250T6087H**	7	6	**10250T6327H**
			120	**10250T6097H**		12	**10250T6337H**
			208	**10250T6547H**		24	**10250T6347H**
			240	**10250T6107H**		48	**10250T6357H**
			380	**10250T6117H**		120	**10250T6427H**
			480	**10250T6127H**		240 ⑤	**10250T6437H**
			600	**10250T6137H**			

Knob

Lever

Knobs and Levers

Color ⑥	Knob Catalog and Code Number	Lever Catalog and Code Number	Color ⑥	Knob Catalog and Code Number	Lever Catalog and Code Number
Red	**10250TER**	**10250TFR**	Clear	**10250TEC**	**10250TFC**
Green	**10250TEG**	**10250TFG**	White	**10250TEW**	**10250TFW**
Yellow	**10250TEA**	**10250TFA**	Amber	**10250TEM**	**10250TFM**
Blue	**10250TEL**	**10250TFL**			

Notes

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

② For selection of the proper cam and contact block, to obtain the proper circuit sequence, see selection table on **Page V7-T1-358**.

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-T1-249**.

⑤ Resistor type. May generate excess heat if used in high density.

⑥ Amber, clear and white lenses have a black arrow (pointer), red, green and blue lenses have a white arrow (pointer).

120 Vac Transformer Selector Switch, Cam 1

Illuminated Selector Switch Operator Only without Knob or Lever

Positions	Operator Action	Transformer Type—50/60 Hz 6V #755 Lamp Catalog Number ①②		Full Voltage Type—AC or DC ③ Lamps—#755, #757, #1835, 120MB ④ Catalog Number ②	
Two-position—60° throw	M M	Cam Code 1 ⑤		Cam Code 1 ⑤	
		E34VFB_H		E34SFB_H	
Three-position—60° throw	M M M	Cam Code 2 ⑤	Cam Code 3 ⑤	Cam Code 2 ⑤	Cam Code 3 ⑤
		E34VGB_H	E34VHB_H	E34SGB_H	E34SHB_H
	M M S	E34VNB_H ⑥	E34VPB_H ⑥	E34SNB_H ⑦	E34SPB_H ⑦
	S M M	E34VJB_H ⑥	E34VKB_H ⑥	E34SJB_H ⑦	E34SKB_H ⑦
	M S S	E34VLB_H	E34VMB_H	E34SLB_H	E34SMB_H
Four-position—40° throw	M M M M	E34VRB_H	—	E34SRB_H	—

Knob

Lever

Knobs and Levers

Color ⑨	Knob Catalog Number and Code Number	Lever Catalog Number and Code Number
Red	**10250TER**	**10250TFR**
Green	**10250TEG**	**10250TFG**
Yellow	**10250TEA**	**10250TFA**
Blue	**10250TEL**	**10250TFL**
Clear	**10250TEC**	**10250TFC**
White	**10250TEW**	**10250TFW**
Amber	**10250TEM**	**10250TFM**

Light Unit Voltage Suffix

Add to operator catalog number listed in table above.

Type of Light Unit			
Transformer Type 50/60 Hz		Full Voltage Type AC or DC ③	
Voltage	Suffix Code	Voltage	Suffix Code
24	**024**	6	**06**
120	**120**	12	**12**
208	**208**	24	**24**
240	**240**	48	**48**
380	**380**	120	**120**
480	**480**	240 ⑧	**240**
600	**600**		

Notes

Use NEMA 4X 10250T operators where exposed to ultraviolet light, see **Page V7-T1-362**.

① Operator includes lens gasket and lens attachment screws.

② Replace underscore with proper voltage suffix code from Light Unit Voltage Suffix table above. Example: three-position maintained with 120V transformer type light unit: E34VGB**120**H.

③ Full voltage light units can be used at other than listed voltages by changing lamp. Replacement lamps are listed on **Page V7-T1-249**.

④ 120MB lamps are used on both 120V and 240V operators.

⑤ For selection of the proper cam and contact block required to obtain a specific circuit sequence, see selection table on **Page V7-T1-358.**

⑥ 120 and 240V transformer only.

⑦ 120 full voltage only.

⑧ Resistor type. May generate excess heat if used in high density.

⑨ Amber, clear and white lenses have a black arrow (pointer). Red, green and blue lenses have a white arrow (pointer).

1

Options

Contact Blocks and Mounting Adapters

NEC Class I Division 2, Groups B, C and D

Contact Block

Contact Block

Description	Catalog Number
Class I Division 2 factory sealed contact block with 1NO-1NC	**10250T1H**

Dimensions, see **Page V7-T1-369**.

Mounting Adapter

Mounting Adapter

Description	Catalog Number
Mounting adapter for pushbuttons	**10250TD2**
Mounting adapter for selector switches	**10250TD3**

Dimensions, see **Page V7-T1-369**.

Mounting Adapters with Contact Block(s)—Overpacked

Description	Catalog Number
Pushbutton adapter with 1NO-1NC	**10250TD21H**
Pushbutton adapter with 2 (1NO-1NC)	**10250TD21H1H**
Selector switch adapter with 1NO-1NC	**10250TD31H**
Selector switch adapter with 2 (1NO-1NC)	**10250TD31H1H**

Mounting and Assembly

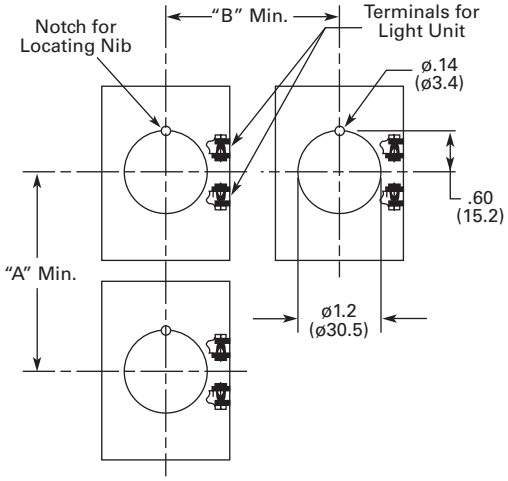
Panel Thickness

- 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/E34TA30
  - Pushbutton/selector switch: 10250TA31/E34TA31

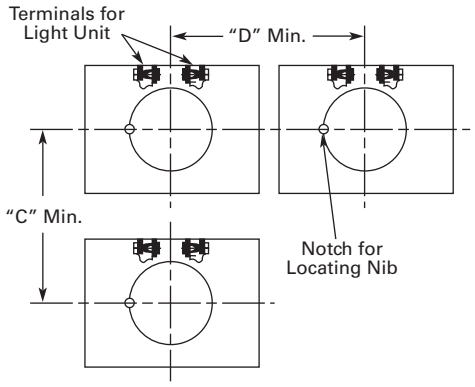
Mounting Matrix

Legend Plate	Dimensions in Inches (mm) A	B	C	D
Small	2.87 (72.6)	2.25 (57.2)	2.25 (57.2)	2.87 (72.6)
Jumbo	2.87 (72.6)	2.32 (58.6)	2.32 (58.6)	2.87 (72.6)
Extra large	2.87 (72.6)	2.56 (65.2)	2.52 (64.1)	2.87 (72.6)

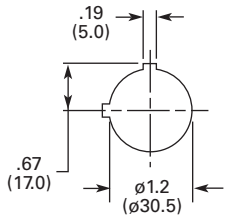
Panel Spacing and Drilling



Drilling for One Hole Mounting and Dimensions for Minimum Spacing in Vertical Rows.

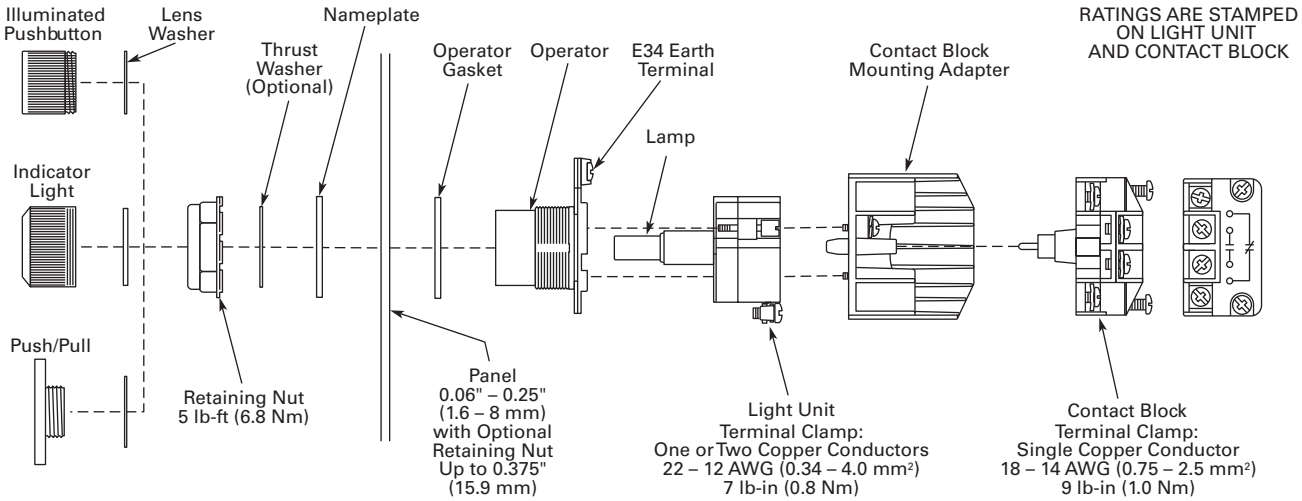


Drilling for One Hole Mounting and Dimensions for Minimum Spacing in Horizontal Rows.



NOTE: Suitable for Use in This Alternate Mounting Hole.

Operator Assembly



1

Enclosures

Die Cast, Polyester and Stainless Steel Enclosures

Enclosures (Case and Cover)—Surface Mounting ①

	Number of Elements	10250T Catalog Number	E34 Catalog Number
Die Cast Enclosure	**Die Cast Enclosure—Deep Cover—In-Line NEMA 4, 4X, 12, 13**		
	1	**10250TN11**	**E34N11**
	2	**10250TN12**	**E34N12**
	3	**10250TN13**	**E34N13**
	4	**10250TN14**	**E34N14**
Polyester Enclosure	**Polyester—In-Line NEMA 3, 4X, 12**		
	1	—	**E34N51**
	2	—	**E34N52**
	3	—	**E34N53**
	4	—	**E34N54**
Stainless Steel Enclosure	**Stainless Steel** ②**—In-Line NEMA 4, 4X, 12**		
	1	—	**10250TN33**
	2	—	**10250TN34**
	3	—	**10250TN35**
	4	—	**10250TN36**

Dimensions, see **Page V7-T1-369**.

Notes

① For spacing increments, see **Page V7-T1-244**.

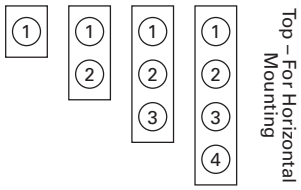
② 14 gauge, type 304.

Application Notes:

1. Operators need to be mounted in their horizontal orientation for all enclosures. For die cast enclosures remove locating nib on operators and use thrust washer (Catalog Number 10250TK3).
2. Polyester enclosures must be used when mounting illuminated operators.

Enclosure Layouts

Top – For Vertical Mounting



Top – For Horizontal Mounting

Technical Data and Specifications

Mechanical Ratings

Description	Specification
Frequency of Operation	
All pushbuttons	6000 operations/hr.
Key and lever selector switches	3000 operations/hr.
Life	
Pushbuttons	10 x 10^6 operations
Contact block	10 x 10^6 operations
Key and lever selector switches	0.25 x 10^6 operations
Shock Resistance	
Duration/force	20 ms ≥5g

Climatic Conditions

Description	Specification
Operating temperature	32° to 140°F (0° 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

Description	Specification
Light Units	
Clamps	Terminals are saddle clamp type for 1 x 22 AWG (0.34 mm^2) to 2 x 14 AWG (4.0 mm^2) conductors
Torque	7 lb-in (0.8 Nm)
Degree of protection against direct electrical contact	IP2X with fingerproof shroud
Contact Blocks	
Clamps	Terminals are stainless steel saddle clamp type for 1 x 18–14 AWG (0.75–2.5 mm^2) solid or stranded copper conductor
Torque	9 lb-in (1.0 Nm) with size 2 Phillips screwdriver
Degree of protection against direct electrical contact	IP2X with fingerproof shroud

Electrical Ratings

Description	Specification
Light Units	
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—Contact Block

Meet or Exceed NEMA Contact Rating Designations A600 and Q300

	A600 (AC)				Q300 (DC)	
Description	**120V**	**240V**	**480V**	**600V**	**125V**	**250V**
Make and emerg. interrupting capacity (amps)	60	30	15	12	0.55	0.27
Normal load break (amps)	6	3	1.5	1.2	0.55	0.27
Thermal current (amps)	10	10	10	10	2.5	2.5
Voltamperes:						
Maximum make	7200	7200	7200	7200	69	69
Maximum break	720	720	720	720	69	69

Temperature Codes

All illuminated devices have operating temperatures below 100°C except for the following catalog numbers with temperature codes per NEC table 500.5(d) and UL 1604:

10250T	E34	Temp. Code
10250T201H	**E34RB120H**	**T3C**
10250T202H	**E34RB240H**	**T3A**
10250T471H	**E34SB120H**	**TC3**
10250T472H	**E34SB240H**	**T3B**
10250T80H	—	**T3C**
10250T81H	—	**T3B**
All selector switches w/120 MB lamp		**T3C**
All illuminated devices with lamp 1835		**T4A**

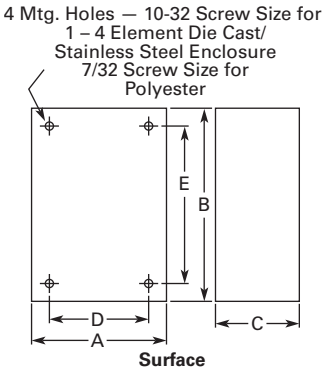
Note: For additional technical information, see Publication Number **TD.7.4.T.E.04**.

Dimensions

Approximate Dimensions in Inches (mm)

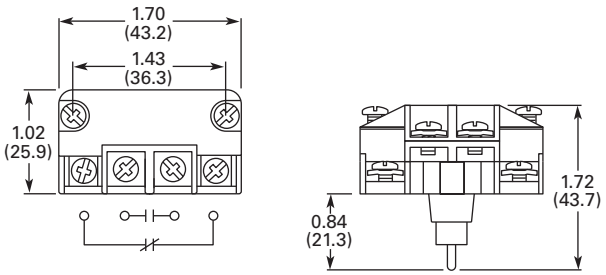
Surface Mounting

Die Cast, Polyester and Stainless Steel Enclosures

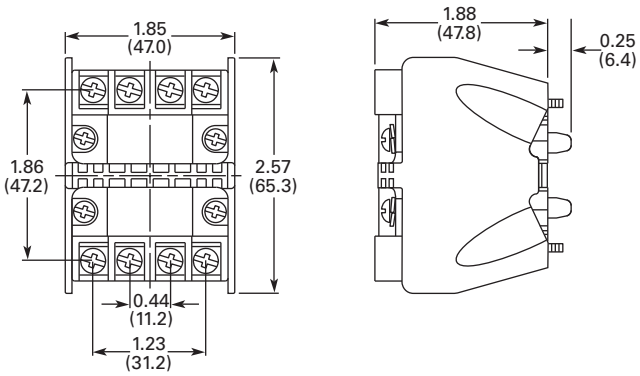


Number of Elements	Element Arrangement	Wide A	High B	Deep C	Mounting D	E	Conduit Entrance
Die Cast							
1	In-line	3.88 (98.6)	4.00 (101.6)	3.00 (76.3)	2.69 (68.3)	3.25 (82.6)	3/4
2		3.88 (98.6)	5.88 (149.4)	3.00 (76.3)	2.69 (68.3)	5.13 (130.3)	
3		3.88 (98.6)	7.75 (196.9)	3.00 (76.3)	2.69 (68.3)	7.00 (177.8)	1
4		3.88 (98.6)	9.63 (244.6)	3.00 (76.3)	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)	①
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)	①
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)	

Contact Block



Mounting Adapter



Note

① No conduit entrance holes provided. Drill as required.

1

Ratings

Summary of NEC Article 500

The NEC Article 500 explains in great detail the requirements for the installation of wiring and electrical equipment in hazardous locations. The purpose of this summary is for general reference only, the National Electrical Code along with other applicable authorities having jurisdiction over the site should be the installer's guidelines when wiring or installing electrical equipment in any hazardous or potentially hazardous location.

Class I, Division 2 Definition

Class I, Division 2 covers hazardous locations where flammable gases, vapors or volatile liquids are handled either in a closed system, or confined within suitable enclosures, or where hazardous concentrations are normally prevented by positive mechanical ventilation. Areas adjacent to Division 1 locations, into which gases might occasionally flow, would also belong to Division 2 (NEC (500.5[b])).

Hazardous Location

Any area where there is the possibility of explosion and fire resulting from the presence of flammable vapors, liquids or gas, or combustible dust or fibers.

Summary of NEC Article 505

The NEC also classifies hazardous locations for flammable gases and vapors into zones under NEC 505. This system is more in line with the European Standards, CENELEC and IEC, with the major difference being that NEC 505 only classifies gases and vapors while CENELEC and IEC also include dusts.

Summary of Classifications

NEC 500–503

Class	Division	Group
I. Gas	1. Hazard may exist—May exist in atmosphere under normal operating conditions	A. Acetylene
		B. Hydrogen and manufactured gases containing 30% hydrogen by volume (e.g. butadiene, ethylene oxide, propylene oxide)
		C. Petrochemicals (e.g. carbon monoxide, ether, ethylene, hydrogen sulfide, morpholine, cyclopropane)
		D. Petrochemicals (e.g. gasoline, benzene, butane, propane, acetone, ammonia, vinyl chloride)
	2. Potential hazard—May be present in atmosphere only under abnormal circumstances OR location adjacent to Class I, Division 1 location	A. Acetylene
		B. Hydrogen and manufactured gases containing 30% hydrogen by volume (e.g. butadiene, ethylene oxide, propylene oxide)
		C. Petrochemicals (e.g. carbon monoxide, ether, ethylene, hydrogen sulfide, morpholine, cyclopropane)
		D. Petrochemicals (e.g. gasoline, benzene, butane, propane, acetone, ammonia, vinyl chloride)
II. Dust	1. Hazard may exist—May exist in atmosphere under normal operating conditions	E. Conductive and combustible dust (resistivity $<10^5$ ohm/cm) (metal dusts)
		F. Carbonaceous dusts (resistivity $>10^2$ ohms/cm but $\leq 10^8$ ohms/cm) (e.g. carbon black, coke dust, coal)
		G. Non-conductive combustible dust (resistivity $\geq 10^5$ ohms/cm) (e.g. grain dust, flour, starch, sugar, plastics)
	2. Potential hazard—May be present in atmosphere only under abnormal circumstances	F. Carbonaceous dusts (resistivity $>10^2$ ohms/cm but $\leq 10^8$ ohms/cm) (e.g. carbon black, coke dust, coal)
		G. Non-conductive combustible dust (resistivity $\geq 10^5$ ohms/cm) (e.g. grain dust, flour, starch, sugar, plastics)
III. Fibers	1. Production areas	Easily ignitable fibers or flyings
	2. Handling and storage areas	Easily ignitable fibers or flyings

NEC 505

Class	Zone	Group
I. Gas	0. Continuously present or present for long periods of time	IIC. Acetylene, hydrogen or equivalent hazard
		IIB. Acetaldehyde, ethylene or equivalent hazard
		IIA. Acetone, ammonia, ethyl alcohol, gasoline, methane, propane or equivalent hazard
	1. Likely to exist under normal operating or maintenance conditions or adjacent to Zone 0	IIC. Acetylene, hydrogen or equivalent hazard
		IIB. Acetaldehyde, ethylene or equivalent hazard
		IIA. Acetone, ammonia, ethyl alcohol, gasoline, methane, propane or equivalent hazard
	2. Not likely to occur in normal operation and if they do occur will only exist for short period or adjacent to Zone 1	IIC. Acetylene, hydrogen or equivalent hazard
		IIB. Acetaldehyde, ethylene or equivalent hazard
		IIA. Acetone, ammonia, ethyl alcohol, gasoline, methane, propane or equivalent hazard

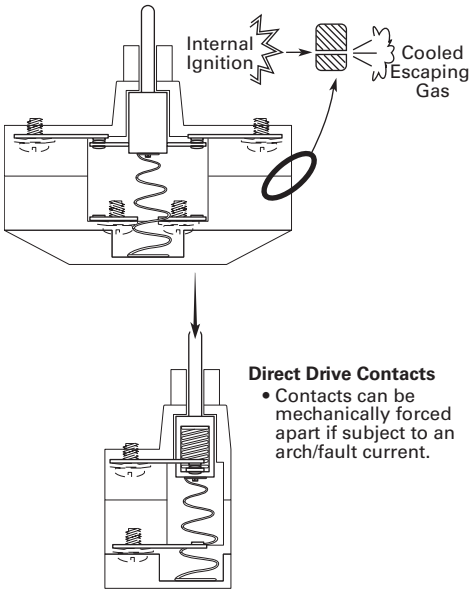
Note

For additional information on grouping of compounds, see NFPA 497M-1991 and NFPA 325-1994.

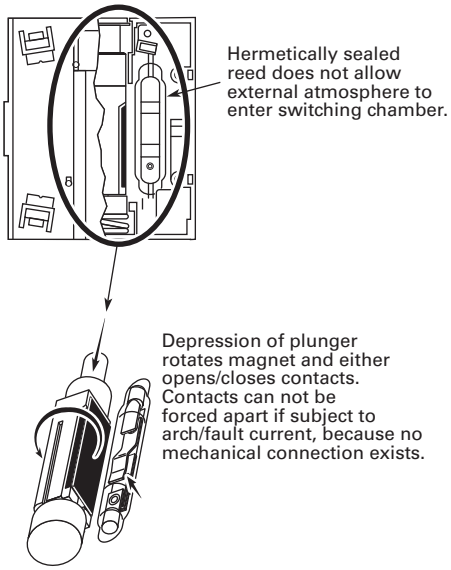
Summary of Basic Methods Available for Class I, Division 2 Locations

Method	Features Configuration	Advantages	Disadvantages
Factory sealed contact block	Closed-ended labyrinth contact block with an incendive circuit incapable of external ignition	Higher continuous carrying amperages—up to 10A Direct drive contacts—contacts can be forced open Suitable for use in all enclosures Best suited for motor control applications	May not be suitable for logic level circuits
Hermetically sealed block	Reed switch sealed against an external atmosphere	Suitable for low energy level circuits Suitable for use in all enclosures	Lower continuous carrying amperages are not suitable for motor control applications (typically 3A to 5A rated) Contacts cannot be forced open Permanent magnet attracts metallic dust and filings that can reduce the electrical creepage distance between live terminals
Explosion proof enclosures (Class I, Division 1 and 2)	Enclosures capable of withstanding an internal explosion while preventing external ignition. Enclosures designed for Class I, Division 1 can safely be used in Class I, Division 2	Higher level of protection than required for Class I Division 2	Higher material and installation costs Conduit sealing is still required Time consuming maintenance

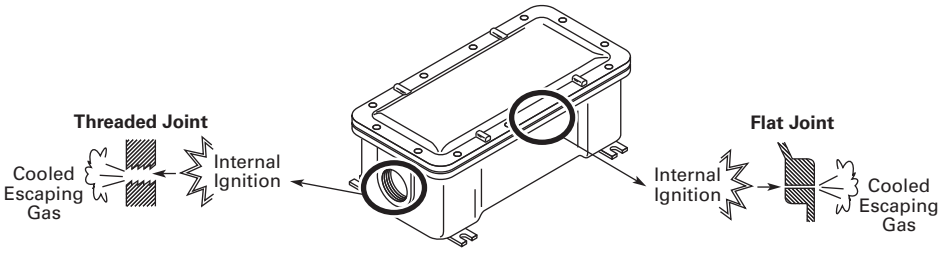
Factory Sealed Contact Blocks



Hermetically Sealed Reed Contact Block



Explosion Proof Enclosure



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