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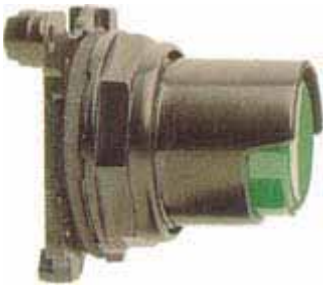
30.5 mm Corrosion Resistant Watertight/Oiltight—E34



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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

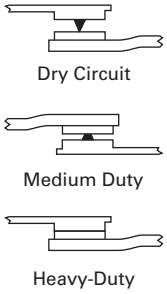
Ultraviolet Light

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

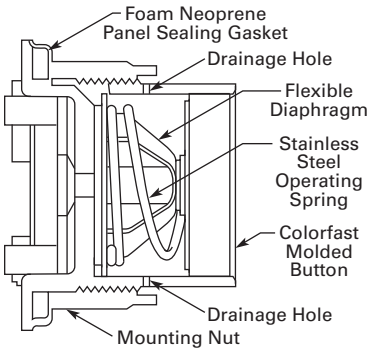


Diaphragm Seal with Drainage Holes

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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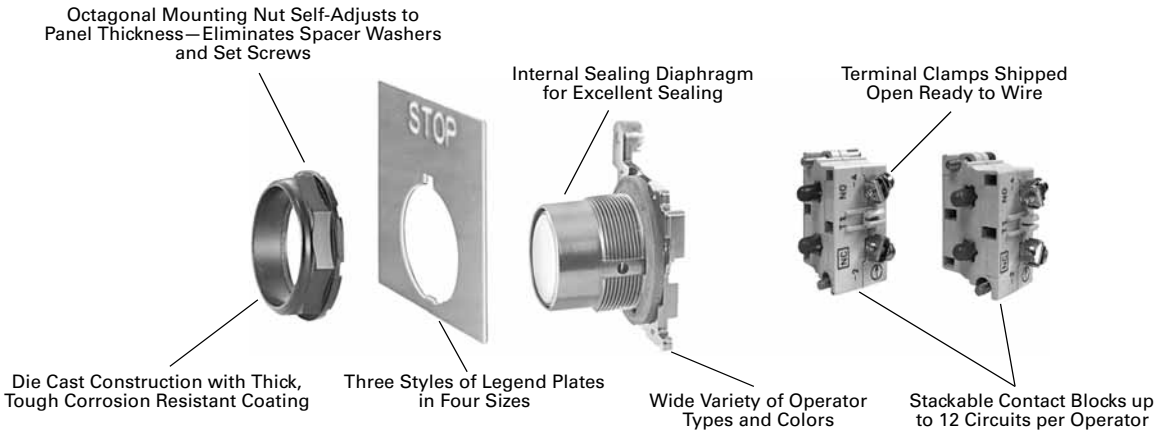
Product Identification

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.

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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
Standard/Master—Incandescent		
H2 =	**G2** =	Red
H3 =	**G3** =	Green
H4 =	**G4** =	Yellow
H5 =	**G5** =	White
H6 =	**G6** =	Blue
H9 =	**G9** =	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

Plastic	Glass	Lens Color
Standard/Master/PresTest—LED		
RP =	**RG** =	Red
GP =	**GG** =	Green
YP =	**YG** =	Yellow
WP =	**WG** =	White
LP =	**LG** =	Blue
AP =	**AG** =	Amber

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

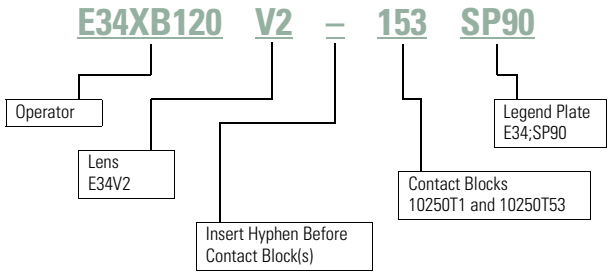
Complete E34 pushbuttons, indicating lights and/or selector switch operators including contact block(s) and legend plate can be ordered using a single composite catalog number. The individually packaged components will be shipped unassembled in a single overpack carton marked with the composite catalog 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.

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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.

Indicating Light Lens

Plastic

Glass

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**

Illuminated Pushbutton Lens

E34V_

Color	Catalog Number
Red	**E34V2**
Green	**E34V3**
Yellow	**E34V4**
White	**E34V5**
Blue	**E34V6**
Ambler	**E34V9**
Clear	**E34V0**

PresTest Lens

Plastic

Glass

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.

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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

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

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	O X	O O	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	O X	O O	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:

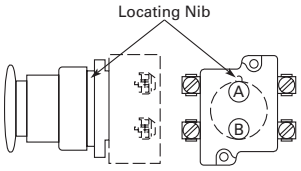
- **Maintained**—(Two-position). Maintains in the pulled or pushed position until manually actuated to the opposite mode.
- **Momentary**—(Three-position). Spring returns to an intermediate position when pulled or pushed and released.
- **Momentary Pull, Maintained Push**—(Three-position). Spring returns 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 M M	1NO			3	**E34VHBK1-2X**	**E34VHBL1-2X**	**E34VHB120TER-2X**	**E34VHB120TFR-2X**
0	0	X		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 M M	1NC			7	**E34VTBK1-23X**	**E34VTBL1-23X**	**E34VRB120TER-23X**	**E34VRB120TFR-23X**
0	X	0	0		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

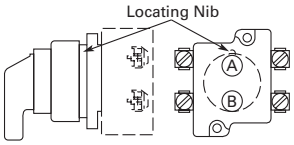
Cam and Contact Block Selection

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.

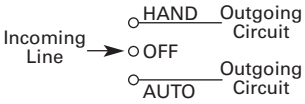
Contact Circuit Locations



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:

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.

1

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.

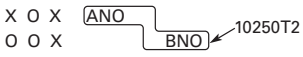
Now to make the cam selection, make a simple worksheet such as:

	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.

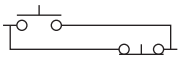
The Complete Switch:
E34VHBK1 with one 10250T2 or, for one composite catalog number, E34VHBK1-Y1 found on **Page V7-T1-283.**

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

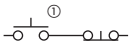

Series Connection


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	 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	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	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		10	X	0	X	0	NC NO	
2	0	X	0	0		NO							
3	0	0	X	0	NO		11	X	X	X	0	NC NO	NO
4	0	0	0	X		NC							
5	X	0	0	X	NC	NC	12	0	X	X	X	NO	NC NO
6	0	X	X	0	NO	NO							
7	0	0	X	X	NO	NC	13	X	0	X	X	NO NC	NC
8	X	X	0	0	NC	NO							
9	0	X	0	X		NO NC	14	X	X	0	X	NC	NO NC

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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).

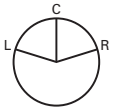
② Field convertible to horizontal mounting.

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**.

Alternate Knobs and Levers for Operators ②

E34K_

E34L_

E34A_

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

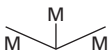
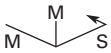
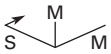
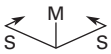
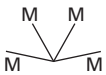
① Key removal in "spring return from" positions not recommended.
② See operators on **Page V7-T1-286**.
③ For use on maintained operators only.

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

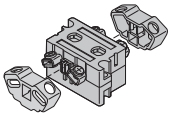
	Description	Catalog Number
E34TA2 	**Padlocking Attachment for Flush Pushbutton Operators.** Permits locking NC contacts in open position with 1/4 in padlock. Will not lock NO contact.	**E34TA2**
10250TA_ 	**Flexible Weather Resistant Boot** for use with flush pushbutton operators.	
	Clear	**10250TA46**
	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

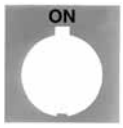
Field Color

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

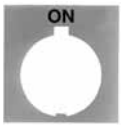
Color Lettering	Field Side 1	Side 2	Standard Catalog Number	Jumbo Catalog Number	Extra Large Catalog Number
Black	White	Silver	**10250TSP76**	**10250TLP76**	**10250TEP76**
White	Red	Black	**10250TSP77**	**10250TLP77**	**10250TEP77**

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.

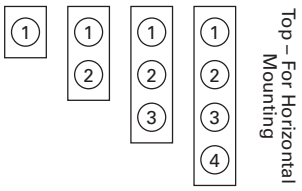
One and Two Contact Block Depth Enclosures

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**

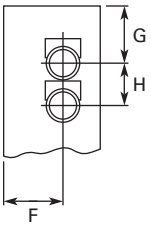
Dimensions, see **Page V7-T1-303**.

Spacing Increments

Approximate Dimensions in Inches (mm)

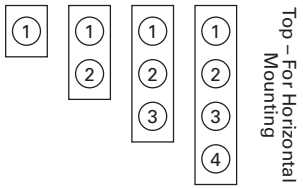
Type	F	G	H
Die cast	2.44 (62.0)	2.5 (63.5)	1.88 (47.8)
Polyester	1.88 (47.8)	Min. 2.13 (54.1)	2.25 (57.2)
Stainless steel	1.69 (42.9)	Min. 1.73 (43.9)	2.25 (57.2)

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.

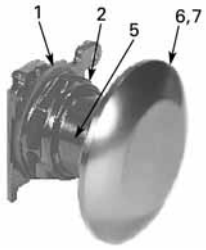
② To order contact blocks with translucent amber housing, change suffix P to **CP** in catalog number, e.g., 10250T51**CP**.

③ ECNO contact blocks are not suitable for use with two-position joysticks or when operators are used with padlock attachments.

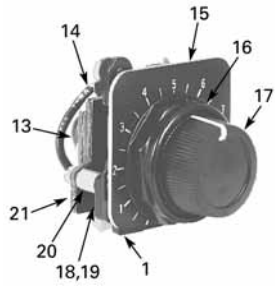
④ Special function contact blocks are not suitable for use with roto-push operators, three-position push-pull operators, or four-position selector switches.

Flush Head Pushbutton Operator

Mushroom Head Pushbutton Operator



Jumbo Mushroom Head Operator

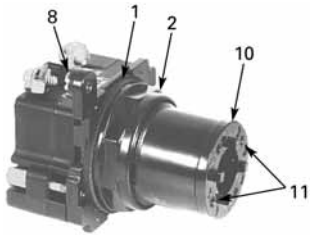


Potentiometers

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

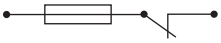
Mechanical Ratings

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

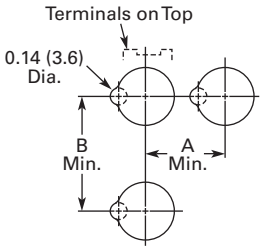
Panel Thickness

- 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

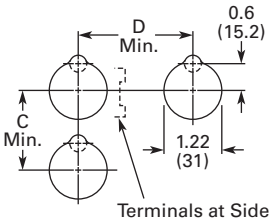
Mounting Matrix

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

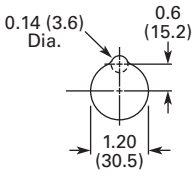


Vertical Mounting

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)

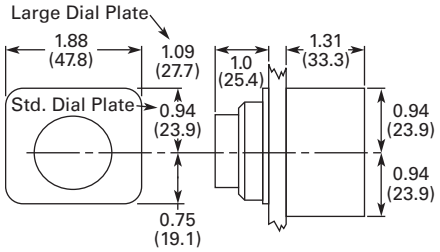


1

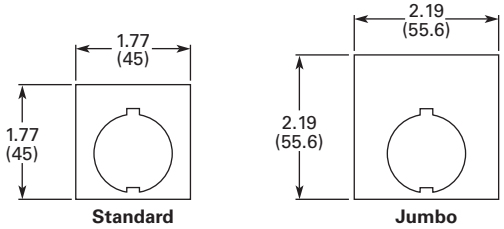
Dimensions

Approximate Dimensions in Inches (mm)

Potentiometer

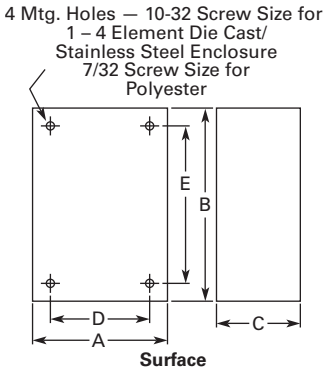


Legend Plates



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

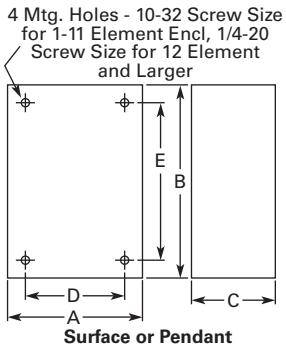
① Depth given is for two contact block deep stations. One contact block deep stations subtract 3/4 in (19.1 mm).

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

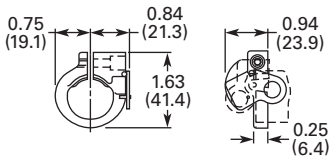
① Depth given is for flat cover. Deep cover is 3/4 in (19.1 mm) deeper.

② Depth given includes pull box.

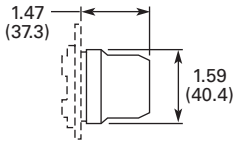
1

Approximate Dimensions in Inches (mm)

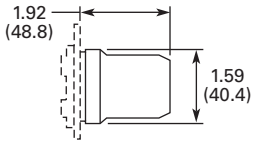
Padlocking Attachment for Flush Pushbutton Operators



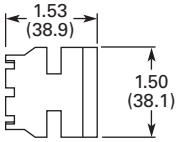
Flexible Weather Resistant Boot



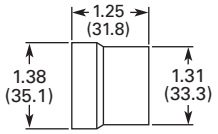
Transparent Boot



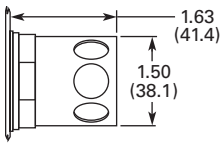
Shroud for Mushroom Head Operator



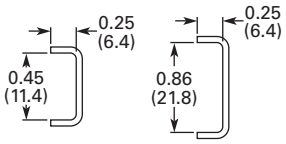
Extended Retaining Nut



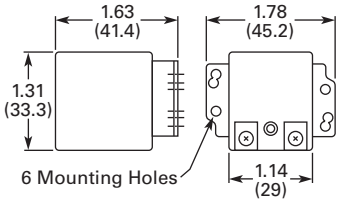
Guard for Illuminated Pushbutton



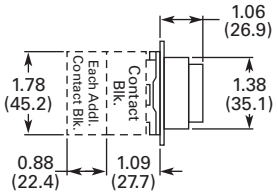
Contact Block Terminal Jumps



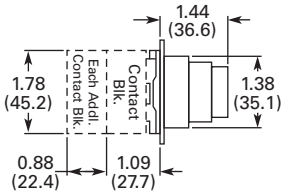
Master Test Module and Flasher Module



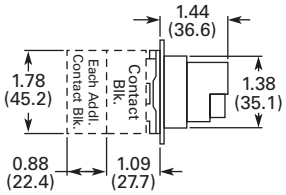
Flush Pushbutton



Extended Pushbutton

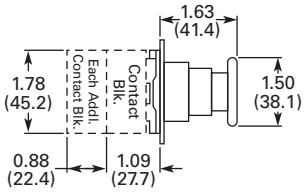


Half Shroud Pushbutton

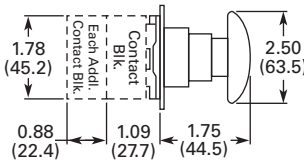


Approximate Dimensions in Inches (mm)

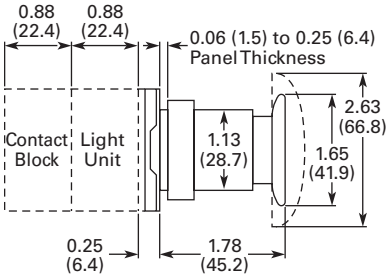
Mushroom Pushbutton



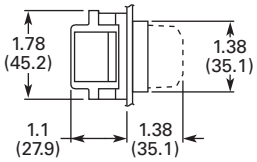
Jumbo Mushroom Pushbutton



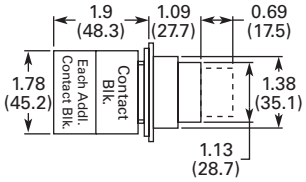
Push-Pull Switch



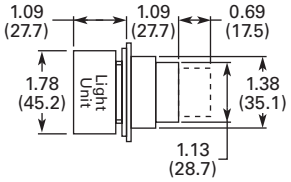
Indicating Light



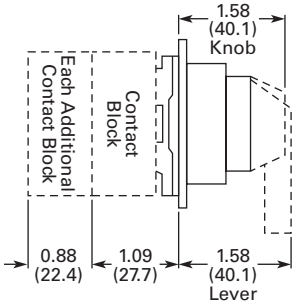
PresTest Indicating Light



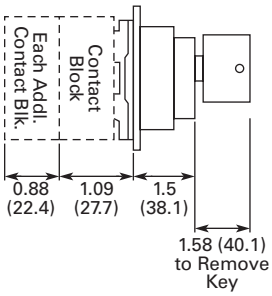
Illuminated Pushbutton



Selector Switch



Key Selector Switch



Illuminated Selector Switch