

Product Overview**800EP/EQ/ES Plastic Operators**

- NEMA Type 4/13, NEMA Type 4/4X/13, IP65/66
- 2-, 3-, and 4-across mountability
- Engineered grade thermoplastics
- Corrosion-resistant for harsh environments
- Black plastic bezel (800EP/EQ)
- Optional clear anodized shiny metal bezel (800ES)



*800EP Round Operators —
Plastic Bushing with Black Plastic Bezel*



*800EQ Square Operators —
Plastic Bushing with Black Plastic Bezel*



*800ES Round Operators —
Plastic Bushing with Shiny Metal Bezel*

800EM/EB Metal Operators

- NEMA Type 4/13, IP65/66
- 2-, 3-, and 4-across mountability
- Die cast metal construction
- Corrosion-resistant chromate plating
- Clear anodized shiny metal bezel (800EM)
- Optional black anodized metal bezel (800EB)



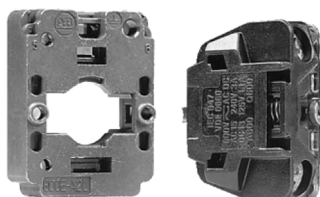
*800EM Round Operators —
Metal Die Cast Bushing with Shiny Metal Bezel*



*800EB Round Operators —
Metal Die Cast Bushing with Black Anodized Metal Bezel*

2-Across x 3-Deep (6 Circuits)

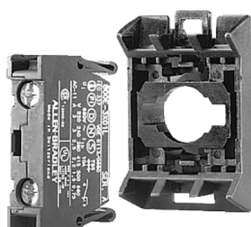
- **Heavy-Duty**
- All metal die cast latch
- Screw down stackable contact blocks
- One hand latch removal
- Color coded contact blocks



2-Across Mounting Latch

3-Across x 2-Deep (6 Circuits)

- **Medium-Duty**
- Engineered grade thermoplastics
- Rugged snap-fit design
- One hand latch removal
- Stackable contact blocks



3-Across Mounting Latch

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Specifications ①**Front of Panel (Operators)**

Mechanical Ratings		
Description	Plastic (800EP/ES)	Metal (800EM/EB)
Vibration (assembled to panel)	10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./10 G max.	
Shock	1/2 cycle sine wave for 11 ms and no damage at 100 G	
Degree of protection	IP66 (NEMA Type 3/3R/4/4X/12/13) IP65 (potentiometer only) (NEMA Type 4/4X/13) IP40 multi-function without boot IP66 multi-function with boot	IP66 (NEMA Type 3/3R/4/12/13)
Mechanical design life (typical)	10,000,000 Cycles: non-illuminated push buttons 3,000,000 Cycles: illuminated push buttons 3,000,000 Cycles: multi-function operators 500,000 Cycles: mushroom operators, selector operators 200,000 Cycles: illuminated selector operators 100,000 Cycles: mushroom key operators (plastic), push-pull/twist operators, wobble stick and joy stick operators 50,000 Cycles: mushroom key operators (metal)	
Operating forces (typical)	5N: flush, extended operators	
Environmental		
Temperature range (operating): per IEC 947-1	-25...+55°C (-13...+131°F) ②	
Temperature range (short term storage): per IEC 947-1	-40...+70°C (85°C maximum for 24 hours) -40...+158°F (185°F maximum for 24 hours)	
Humidity	50% to 95% RH from 25...60°C (77...140°F) per: Procedure IV of MIL-STD-810C, Method 507.1 cycling test	
Materials		
Bushings, mounting rings	Glass-filled thermoplastic polyester, rated UL94 V-O	Die-cast zinc; dark olive chromate finish
Legend frames	Glass-filled thermoplastic polyester, rated UL94 V-O	
Bezels	Glass-filled thermoplastic polyester, rated UL94 V-O	Anodized aluminum (EB, EM, ES line)
Seals: diaphragm style	Silicone rubber	
Seals: lip and flat gasket styles	Nitrile rubber	
Illuminated lenses	Transparent nylon Type 12	

① See Performance Data — refer to page Important-2.

② Operating temperatures below 0°C are based on the absence of freezing moisture and liquids.

Specifications ①, Continued

Back-of-Panel Components

Electrical Ratings			
Description	2-Across Style	3-Across Style	4-Across Style
Standard contact block ratings ②	NEMA, EEMAC A600, Q600, VDE 0660 AC 15, DC 13 to IEC 947	NEMA A600, Q600 600V AC AC 15, DC 13 to IEC 947	NEMA, EEMAC A600, Q600, VDE 0660 AC 15, DC 13 to IEC 947
Low voltage contact block ratings	5...48V DC and 1...100 mA 240V AC max. and 0.4 A max. PenTUFF™: 5-finger spanner	1 mA DC min. 600V AC NEMA A600, Q600, AC 15, DC 13 to IEC 947 Bifurcated: 2-finger spanner	1 mA DC min. 600V AC NEMA A600, Q600, AC 15, DC 13 to IEC 947 Bifurcated: 2-finger spanner
Thermal current	10 A max. continuous current to UL508, CSA22.2 #14, IEC 947, VDE 0660, part 200	10 A max. without enclosure (40°C ambient) 6 A with enclosure (60°C)	10 A max. continuous current to UL508, CSA22.2 #14, IEC 947, VDE 0660, part 200
Insulation category (minimum)	Group C, 500V to VDE 0110 600V (UL and CSA)		
Terminal marking	Conforming to CENELEC EN50013		
Wire capacity (screw terminal)	Min. of (1) #20 AWG Max. (2) #14 AWG or (1) #12 AWG	#18 to #12 AWG (0.75...2.5 mm ²) Max. (2) #14 AWG or (1) #12 AWG	Min. of (1) #22 AWG Max. (2) #14 AWG or (1) #12 AWG
Wire capacity (stab terminal)	—	—	Integral (1) 0.110" x 0.032" push-on connector for single circuit Double circuit stab kit sold separately
Dielectric strength (minimum)	2,200V for one minute		
Short circuit protection	Standard contacts: 10 A gl or N type cartridge fuse to IEC 269-1, 269-2 (1986) PenTUFF™ contacts: ② 6 A gl or N type cartridge fuse to IEC 269-1, 269-2 (1986)	10 A slow (DT, gl)	10 A gl or N type cartridge fuse to IEC 269-1, 269-2 (1986)
Electrical design life cycles	1,000,000 at 2 A	1,000,000 at 2 A	1,000,000 at 2 A
Electrical shock protection: Per IEC 529	Finger-safe conforming to IP2X		
Mechanical Ratings			
Description	2-Across Style	3-Across Style	4-Across Style
Vibration (assembled to panel)	10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./10 G max. 6 hr	10...150 Hz, 0.15 mm displacement (peak-to-peak) max./2 G max. 6 hr	10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./10 G max. 6 hr
Shock	1/2 cycle sine wave for 11 ms and no damage at 100G min.	1/2 cycle sine wave for 11 ms and no damage at 50 G max.	1/2 cycle sine wave for 11 ms and no damage at 100 G max.
Contact block mechanical design	5,000,000 cycles		
Contact operation	N.O.: slow make, double break N.C.: slow make, double break (positive opening) N.O.E.M.: early make, double break N.C.L.B.: late break, double break (positive opening)	N.O.: slow make, double break N.C.: slow make, double break (positive opening) N.O.E.M.: early make, double break N.C.L.B.: late break, double break (positive opening)	N.O.: slow make, double break N.C.: slow make, double break (positive opening)
Operating forces (typical)	2.78 N: all contact blocks	3.6 N: each N.O. contact block 2.6 N: each N.C. contact block	1.9 N: each N.O. contact block 1.7 N: each N.C. contact block
2-circuit contact block	—	—	2.9 N: each 2 N.O. 2.6 N: each 2 N.C. or 1 N.O. - 1 N.C.

① See Performance Data — refer to page Important-2.

② Low voltage contacts are recommended for applications below 24V and 100 mA.

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Specifications 1, Continued**Back-of-Panel Components, Continued**

Environmental			
Description	2-Across Style	3-Across Style	4-Across Style
Temperature range (operating) 2 3	-25...+55°C (-13...+131°F)		
Temperature range (short term storage) 3	-25...+55°C (70°C max. for 24 hrs) -13...+131°F (158°F max. for 24 hrs)		
Humidity	50% to 95% RH from 25°C...60°C (77...140°F) per: Procedure IV of MIL-STD-810C, Method 507.1 cycling test	40°C (104°F) @95% RH for 56 days 23°C (73.4°F), 83% RH/40°C (104°F), 93% RH for 20 cycles	98% RH at 90°C (194°F) for 164 hours
Materials			
Springs	Stainless steel and zinc coated music wire		
Electrical contacts: (Standard)	Silver nickel alloy	Fine silver	Fine silver
(Low voltage)	Palladium silver alloy — spanner gold-plated silver nickel — stationary contacts	Gold-plated over silver	Gold-plated over silver
Terminals: (Screw type) (Push-on type)	Plated steel	Plated steel	Stainless steel Brass
Agency Approvals			
Approvals	UL Listed 4/CSA Certified	UL Listed 4/CSA Certified	UL Listed 4/CSA Certified
Standards conformity	UL508, UL486E CSA22.2 #14, NEMA ICS-1 and ICS-2 (1983), IEC 144, IEC 947-1, IEC 947-5, VDE 0550, VDE 0660, Part 200	NEMA ICS-1 and ICS-2 IEC 204-1, 947; SEV 1005, 1093; VDE 0113, 0660 Part 201; BS 4794; CEE 24; UL 486E, UL 508, CSA22.2 #14	UL508, UL486E CSA22.2 #14, NEMA ICS-1 and ICS-2 (1983), IEC 144, IEC 947-1, IEC 947-5, VDE 0550, VDE 0660, Part 200

1 See Performance Data — refer to page Important-2.

2 Operating temperatures below 0°C (32°F) are based on the absence of freezing moisture and liquids.

3 Per IEC 947-1.

4 UL File & Guide Number E14840.

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Momentary Contact Push Button Operators, Illuminated — Flush, Extended, Guarded



Flush Operator
Cat. No. 800EM-LF5



Extended Operator
Cat. No. 800EP-LE3



Guarded Operator
Cat. No. 800EP-LG3

Color	Flush — Round		Extended — Round		Guarded — Round	
	Plastic	Metal	Plastic	Metal	Plastic	Metal
	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.	Cat. No.
Green	800EP-LF3	800EM-LF3	800EP-LE3	800EM-LE3	800EP-LG3	800EM-LG3
Red	800EP-LF4	800EM-LF4	800EP-LE4	800EM-LE4	800EP-LG4	800EM-LG4
Amber	800EP-LF5	800EM-LF5	800EP-LE5	800EM-LE5	800EP-LG5	800EM-LG5
No lens	800EP-LF9	800EM-LF9	800EP-LE9	800EM-LE9	800EP-LG9	800EM-LG9

Back-of-Panel Components, Illuminated Operators

Full Voltage Power Module with Latch

	Type	Volts	2-Across Mounting	3-Across Mounting
			Cat. No.	Cat. No.
	No lamp ❶	—	800E-2DL0	800E-3DL0
	Incandescent	24 AC/DC	800E-2DL3	800E-3DL3
		120 AC/DC	800E-2DL5	800E-3DL5
	LED ❷ (red)	24 AC/DC	800E-2DL3R	800E-3DL3R
		120 AC	800E-2DL5R	800E-3DL5R

Transformer Power Module with Latch

	Type	Volts	2-Across Mounting	3-Across Mounting
			Cat. No.	Cat. No.
	Incandescent	110/120 AC	800E-2TL5	800E-3TL5
		220/240 AC	800E-2TL7	800E-3TL7
	LED ❷ (red)	110/120 AC	800E-2TL5R	800E-3TL5R
		220/240 AC	800E-2TL7R	800E-3TL7R

Contact Blocks

	Type	Volts	2-Across Mounting	3-Across Mounting
			Cat. No.	Cat. No.
	Standard	1 N.O.	800E-2X10	800E-3X10
		1 N.C.	800E-2X01	800E-3X01
	PenTUFF (low voltage) ❸	1 N.O.	800E-2X10V	800E-3X10V
		1 N.C.	800E-2X01V	800E-3X01V

❶ Lamp must match line voltage. See replacement lamps table on page 10-247.

❷ LEDs are available in red, green, blue, amber, and white; color cap must match LED color.

❸ Patented PenTUFF contacts supplied only with 2-across mounting, gold-plated contacts supplied only with 3-across mounting.

Accessories — Page 10-233

Lamp Information — Page 10-247

Legend Plates — Page 10-248

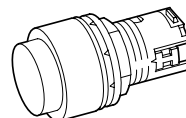
Approximate Dimensions — Page 10-256

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Momentary Contact Push Button Operators, Illuminated — Flush, Extended, Guarded

800 **EP** – **LE** **3**
a *b* *c*



a

Operator Construction	
Code	Description
EP	Round plastic operator (NEMA Type 4/4X/13)
ES	Round plastic operator w/shiny metal bezel (NEMA Type 4/13)
EQ	Square plastic operator (NEMA Type 4/4X/13)
EM	Round metal operator (NEMA Type 4/13)
EB	Round metal operator w/black anodized bezel (NEMA Type 4/13)

b

Operator Type	
Standard	
Code	Description
LF	Flush
LE	Extended
LG	Guarded ❶
No Side Illumination	
Code	Description
LFS	Flush

c

Lens Cap Color	
Code	Color
3	Green
4	Red
5	Amber
6	Blue
7	Clear (white diffuser cap)
9	No lens

Back-of-Panel Components, Illuminated Operators

Note: To order 4-across back-of-panel components, see page 10-236.

800E – **2** **DL5** **R** **X1** **0** **V**
a *b* *c* *d* *e* *f*

a

Contact Block Matrix	
Code	Type
2	2-across mounting
3	3-across mounting

c

Lamp	
Code	Type
Blank	Incandescent or no lamp
R	Red LED ❷
G	Green LED ❷
A	Amber LED ❷
B	Blue LED ❷
W	White LED ❷❸

f

Specialty Contact Blocks	
Code	Type
Blank	Standard
V	PenTUFF (low voltage) ❹
E	N.O. early make
L	N.C. late break

b

Power Module Type and Voltage	
Full Voltage (Latch Included)	
Code	Description
DL0	No lamp
DL1	6V AC/DC
DL2	12V AC/DC
DL3	24V AC/DC
DL4	48V AC/DC
DL5 ❺	120V AC/DC
DL6 ❻	130V AC/DC
Transformer (Latch Included)	
Code	Description
TL5	110V 50 Hz/120V 60 Hz
TL6	208V 60 Hz
TL7	220V 50 Hz/240V 60 Hz
TL10	400V 50 Hz
TL14	600V 60 Hz
Resistor (Latch Included)	
Code	Description
RL5 ❸	110V 50 Hz/120V 60 Hz
RL7	240V 60 Hz

d

N.O. (Normally Open Circuits)	
Code	No. of Circuits
X0	No contact
X1	1 N.O.
X2	2 N.O.
X3	3 N.O.
X4	4 N.O.
X5	5 N.O.
X6	6 N.O.

Note:

Max Allowable Circuits for Illuminated Push Buttons and Selector Switches		
Mounting	Full Voltage	Transformer
2-across	5	3
3-across	4	2

e

N.C. (Normally Closed Circuits)	
Code	No. of Circuits
0	No contact
1	1 N.C.
2	2 N.C.
3	3 N.C.
4	4 N.C.
5	5 N.C.
6	6 N.C.

- ❶ Guarded option not available with square operators.
- ❷ Option **DL5** does not have a shunting resistor when used with an LED. Option **DL6** has a shunting resistor for LEDs and can be used for 120V DC applications.
- ❸ 120V resistor module available in 2-across and 4-across mounting **only**.
- ❹ Refer to page 10-247 for LED selection.
- ❺ Available in 6V and 24V AC/DC only.
- ❻ Patented PenTUFF contacts supplied only with 2-across mounting, gold-plated contacts supplied only with 3-across mounting.

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Alternate Action (Maintained) Push Button Operators, Illuminated — Flush



Round Flush Alternate Action Illuminated
Cat. No. 800EP-LFA5

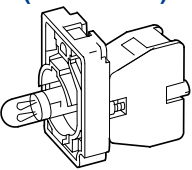
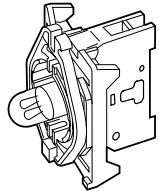


Alternate Action Metal
Cat. No. 800EM-LFA5

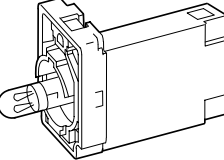
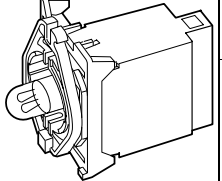
Color	Flush Alternate Action — Round	
	Plastic	Metal
	Cat. No.	Cat. No.
Green	800EP-LFA3	800EM-LFA3
Red	800EP-LFA4	800EM-LFA4
Amber	800EP-LFA5	800EM-LFA5
No lens	800EP-LFA9	800EM-LFA9

Back-of-Panel Components, Illuminated Operators

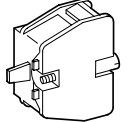
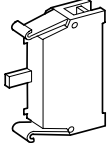
Full Voltage Power Module with Latch

 2-Across (5 ckt. max)	 3-Across (4 ckt. max)	Type	Volts	2-Across Mounting	3-Across Mounting
				Cat. No.	Cat. No.
		No lamp ❶	—	800E-2DL0	800E-3DL0
		Incandescent	24 AC/DC	800E-2DL3	800E-3DL3
			120 AC/DC	800E-2DL5	800E-3DL5
		LED ❷ (red)	24 AC/DC	800E-2DL3R	800E-3DL3R
			120 AC	800E-2DL5R	800E-3DL5R

Transformer Power Module with Latch

 2-Across (3 ckt. max)	 3-Across (2 ckt. max)	Type	Volts	2-Across Mounting	3-Across Mounting
				Cat. No.	Cat. No.
		Incandescent	110/120 AC	800E-2TL5	800E-3TL5
			220/240 AC	800E-2TL7	800E-3TL7
		LED ❷ (red)	110/120 AC	800E-2TL5R	800E-3TL5R
			220/240 AC	800E-2TL7R	800E-3TL7R

Contact Blocks

 2-Across	 3-Across	Type	Contact	2-Across Mounting	3-Across Mounting
				Cat. No.	Cat. No.
		Standard	1 N.O.	800E-2X10	800E-3X10
			1 N.C.	800E-2X01	800E-3X01
		PenTUFF (low voltage) ❸	1 N.O.	800E-2X10V	800E-3X10V
			1 N.C.	800E-2X01V	800E-3X01V

❶ Lamp must match line voltage. See replacement lamps table on page 10-247.

❷ LEDs are available in red, green, blue, amber, and white; color cap must match LED color.

❸ Patented PenTUFF contacts supplied only with 2-across mounting, gold-plated contacts supplied only with 3-across mounting.

Accessories — Page 10-233

Lamp Information — Page 10-247

Legend Plates — Page 10-248

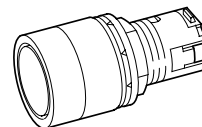
Approximate Dimensions — Page 10-256

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Alternate Action (Maintained) Push Button Operators, Illuminated — Flush

800 **EP** – **LFA** **3**
a *b* *c*



a

Operator Construction	
Code	Description
EP	Round plastic operator (NEMA Type 4/4X/13)
ES	Round plastic operator w/shiny metal bezel (NEMA Type 4/13)
EQ	Square plastic operator (NEMA Type 4/4X/13)
EM	Round metal operator (NEMA Type 4/13)
EB	Round metal operator w/black anodized bezel (NEMA Type 4/13)

b

Operator Type and Description	
Code	Description
LFA	Illuminated flush, alternate action

c

Lens Cap Color	
Code	Color
3	Green
4	Red
5	Amber
6	Blue
7	Clear (white diffuser cap)
9	No lens

Back-of-Panel Components, Illuminated Operators

800E – **2** **DL5** **R** **X1** **0** **V**
a *b* *c* *d* *e* *f*

a

Contact Block Matrix	
Code	Type
2	2-across mounting
3	3-across mounting

c

Lamp	
Code	Type
Blank	Incandescent or no lamp
R	Red LED ①
G	Green LED ②
A	Amber LED ③
B	Blue LED ④
W	White LED ⑤⑥

e

N.C. (Normally Closed Circuits)	
Code	No. of Circuits
0	No contact
1	1 N.C.
2	2 N.C.
3	3 N.C.
4	4 N.C.
5	5 N.C.
6	6 N.C.

b

Power Module Type and Voltage	
Full Voltage (Latch Included)	
Code	Description
DL0	No lamp
DL1	6V AC/DC
DL2	12V AC/DC
DL3	24V AC/DC
DL4	48V AC/DC
DL5 ①	120V AC/DC
DL6 ②	130V AC/DC
Transformer (Latch Included)	
Code	Description
TL5	110V 50 Hz/120V 60 Hz
TL6	208V 60 Hz
TL7	220V 50 Hz/240V 60 Hz
TL10	400V 50 Hz
TL14	600V 60 Hz
Resistor (Latch Included)	
Code	Description
RL5 ③	110V 50 Hz/120V 60 Hz
RL7	240V 60 Hz

d

N.O. (Normally Open Circuits)	
Code	No. of Circuits
X0	No contact
X1	1 N.O.
X2	2 N.O.
X3	3 N.O.
X4	4 N.O.
X5	5 N.O.
X6	6 N.O.

f

Specialty Contact Blocks	
Code	Type
Blank	Standard
V	PenTUFF (low voltage) ④
E	N.O. early make
L	N.C. late break

Note:

Max Allowable Circuits for Illuminated Push Buttons and Selector Switches		
Mounting	Full Voltage	Transformer
2-across	5	3
3-across	4	2

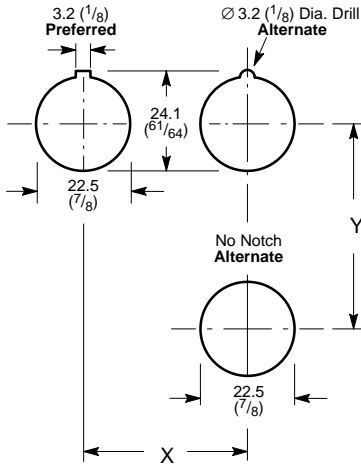
- ① Option DL5 does not have a shunting resistor when used with an LED. Option DL6 has a shunting resistor for LEDs and can be used for 120V DC applications.
- ② 120V resistor module available in 2-across and 4-across mounting only.
- ③ Refer to page 10-247 for LED selection.
- ④ Available in 6V and 24V AC/DC only.
- ⑤ Patented PenTUFF contacts supplied only with 2-across mounting, gold-plated contacts supplied only with 3-across mounting.

22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions for Round and Square Operators

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.



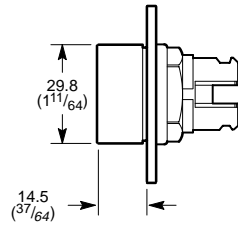
Note: Panel thickness range 1.0...6.0 mm (3/64...15/64"). Maximum panel thickness reduced when optional legend plates are used.

Panel Hole Spacing (Minimum)			
Operator	Legend Plate Used	X	Y
Standard with single circuit contact	None/30x40 mm legend plate ①	30 (1-3/16)	40 (1-37/64)
	30x50 mm legend plate	30 (1-3/16)	50 (1-31/32)
Standard with double circuit contact	Any	30 (1-3/16)	50 (1-31/32)
40 mm push-pull/T-T-R, mushroom/mushroom with single circuit contact ②	None/30x40 mm legend plate ①	40 (1-37/64)	40 (1-37/64)
	30x50 mm legend plate	40 (1-37/64)	50 (1-31/32)
40 mm push-pull/T-T-R, mushroom/mushroom key release w/double circuit contact ②	Any	40 (1-37/64)	50 (1-31/32)
Knob lever selector switch with single circuit contact	None/30x40 mm legend plate ①	48 (1-57/64)	40 (1-37/64)
	30x50 mm legend plate	48 (1-57/64)	50 (1-31/32)
Knob lever selector switch with double circuit contact	Any	48 (1-57/64)	50 (1-31/32)
Any	60 mm round legend plate	60 (2-3/8)	60 (2-3/8)
	90 mm round legend plate	90 (3-9/16)	90 (3-9/16)

- ① If a 3X latch is used a 30 x 50 mm minimum spacing is required.
- ② If a 60 mm operator is used a 60 x 60 mm minimum spacing is required.

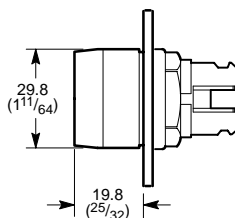
Approximate Dimensions for Round Operators

Non-Illuminated Flush Head Push Button Operators



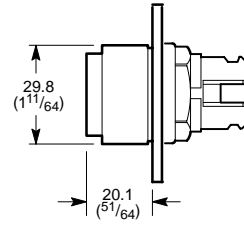
Shipping Wt. 19 g (0.7 oz.) Plastic
Shipping Wt. 42 g (1.5 oz.) Metal

Illuminated Flush Head Push Button Operators



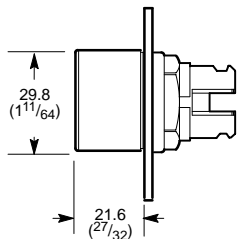
Shipping Wt. 19 g (0.7 oz.) Plastic
Shipping Wt. 42 g (1.5 oz.) Metal

Illuminated and Non-Illuminated Extended Head Push Button Operators



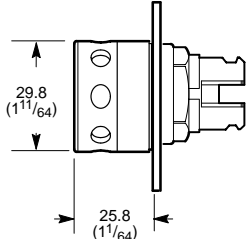
Shipping Wt. 20 g (0.7 oz.) Plastic
Shipping Wt. 43 g (1.5 oz.) Metal

Non-Illuminated Guarded Push Button Operators

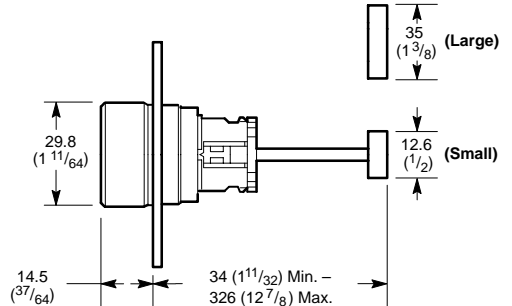


Shipping Wt. 30 g (1.1 oz.) Plastic
Shipping Wt. 45 g (1.6 oz.) Metal

Illuminated Guarded Head Push Button Operators

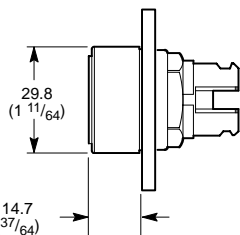


Shipping Wt. 28 g (1.0 oz.) Plastic
Shipping Wt. 46 g (1.6 oz.) Metal



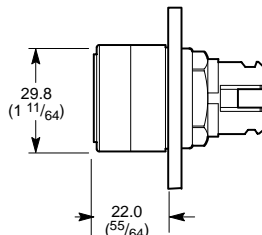
Shipping Wt. 20 g (0.7 oz.) Plastic
Shipping Wt. 42 g (1.5 oz.) Metal

Non-Illuminated Alternate Action Push Button Operators



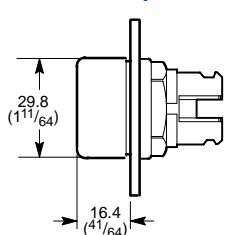
Shipping Wt. 19 g (0.7 oz.) Plastic
Shipping Wt. 42 g (1.5 oz.) Metal

Illuminated Alternate Action Push Button Operators



Shipping Wt. 19 g (0.7 oz.) Plastic
Shipping Wt. 42 g (1.5 oz.) Metal

Pilot Light Operators without Optics



Shipping Wt. 13 g (0.5 oz.) Plastic
Shipping Wt. 30 g (1.1 oz.) Metal

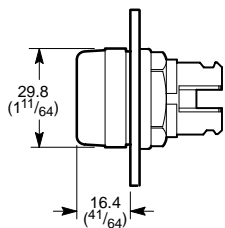
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions for Round Operators, Continued

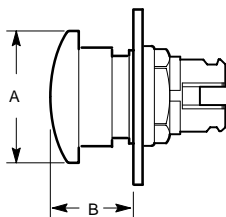
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Pilot Light Operators with Optics



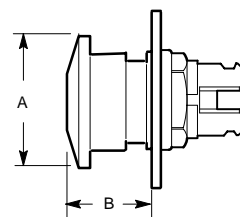
Shipping Wt. 14 g (0.5 oz.) Plastic
Shipping Wt. 32 g (1.1 oz.) Metal

Non-Illuminated Momentary Mushroom Head Operators 40 mm and 60 mm



Shipping Wt. 29 g (1.0 oz.) Plastic
Shipping Wt. 54 g (1.9 oz.) Metal

Twist-to-Release Mushroom Operators 40 mm and 60 mm

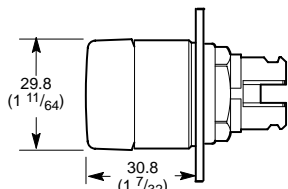


Shipping Wt. 31 g (1.1 oz.) 40 mm Plastic
Shipping Wt. 58 g (2.0 oz.) 40 mm Metal

A	B	
	Out	In
40 (1-9/16)	27 (1-1/16)	22.8 (57/64)
60 (2-23/64)	27 (1-1/16)	22.8 (57/64)

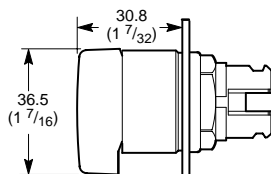
A	B	
	Out	In
40 (1-9/16)	27 (1-1/16)	22.8 (57/64)
60 (2-11/32)	27 (1-1/16)	22.8 (57/64)

Knob Selector Switch Operators Illuminated and Non-Illuminated



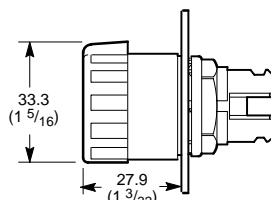
Shipping Wt. 22 g (0.8 oz.) Plastic
Shipping Wt. 60 g (2.1 oz.) Metal

Knob Lever Selector Switch Operators Illuminated and Non-Illuminated



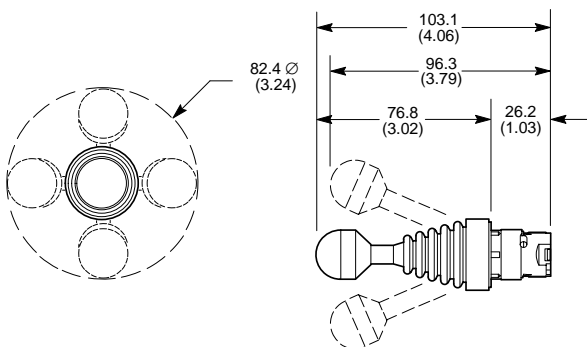
Shipping Wt. 24 g (0.8 oz.) Plastic
Shipping Wt. 62 g (2.2 oz.) Metal

Selector-Jog Push Button Operators



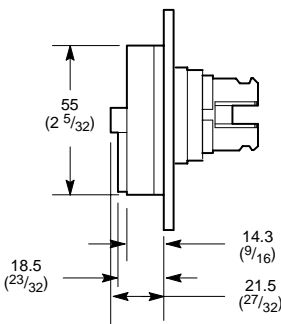
Shipping Wt. 28 g (1.0 oz.) Plastic
Shipping Wt. 64 g (2.3 oz.) Metal

Joy Stick Operators



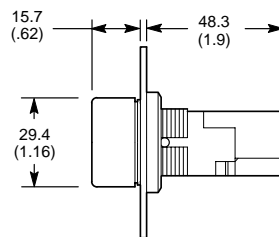
Shipping Wt. 65 g (2.3 oz.)

Multi-Function Push Button Operators



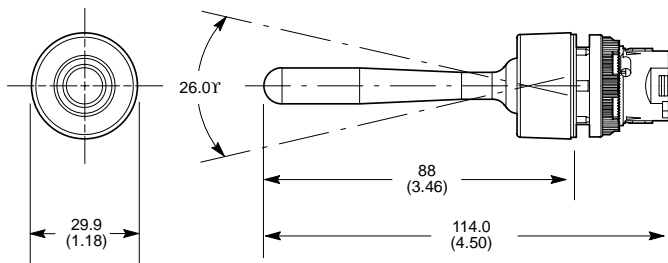
Shipping Wt. 22 g (0.8 oz.)
Note: Face width is 30 (1.2)

Monolithic Pilot Light



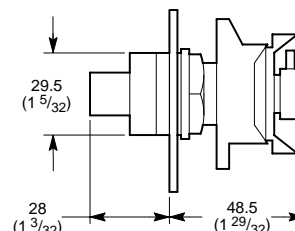
Shipping Wt. 28 g (1.0 oz.)

Wobble Stick Operators



Shipping Wt. 53 g (1.9 oz.)

Potentiometer



Shipping Wt. 48 g (1.7 oz.)

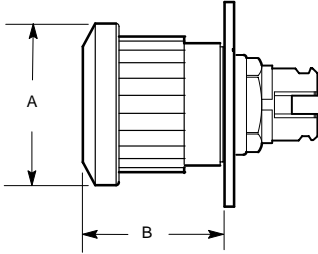
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions for Round Operators, Continued

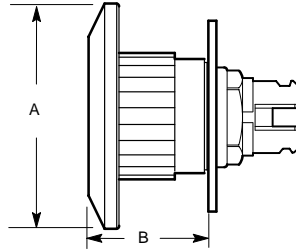
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

2-Position Push-Pull Mushroom Operators Illuminated and Non-Illuminated 40 mm and 60 mm



A	B	
	Out	In
40 (1-37/64)	37.9 (1-31/64)	32.9 (1-19/64)
60 (2-23/64)	37.9 (1-31/64)	32.9 (1-19/64)

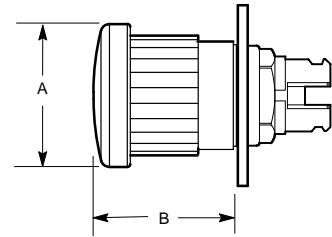
3-Position Push-Pull Mushroom Operators Illuminated and Non-Illuminated 40 mm and 60 mm



Shipping Wt. 76 g (2.7 oz.) 60mm Metal

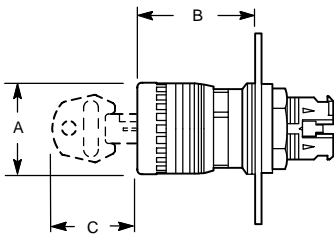
A	B		
	Out	Center	In
40 (1-37/64)	37.9 (1-31/64)	35.3 (1-25/64)	32.9 (1-19/64)
60 (2-23/64)	37.9 (1-31/64)	35.3 (1-25/64)	32.9 (1-19/64)

Momentary Mushroom Operators Illuminated 40 mm and 60 mm and Non-Illuminated 40 mm Metal Head Mushroom Operator



A	B	
	Out	In
40 (1-37/64)	37.9 (1-31/64)	33.2 (1-5/16)
60 (2-23/64)	37.9 (1-31/64)	33.2 (1-5/16)

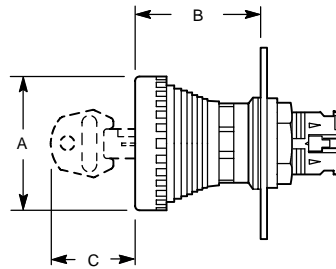
2-Position Trigger Action Twist-to-Release Operator 30 mm and Mushroom Key Release Operator 30 mm



Shipping Wt. 30 g (1.1 oz.) Plastic
Shipping Wt. 65 g (2.4 oz.) Metal

A	B		C	
	Out	In	Ronis	Zadi
30 (1.2)	41 (1.6)	36 (1.4)	27 (1.1)	24 (0.94)

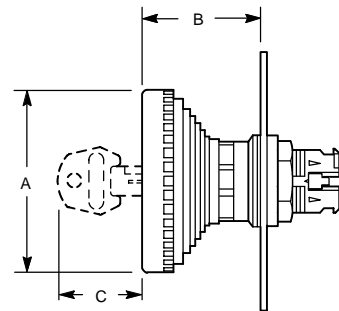
2-Position Trigger Action Mushroom and Mushroom Key Release Operator 40 mm



Shipping Wt. 64 g (2.3 oz.) Plastic
Shipping Wt. 101 g (3.7 oz.) Metal

A	B		C	
	Out	In	Ronis	Zadi
40 (1.6)	41 (1.6)	36 (1.4)	27 (1.1)	24 (.94)

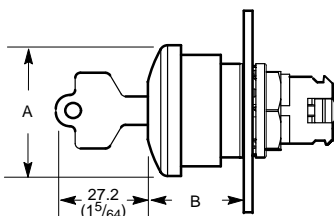
2-Position Trigger Action Mushroom and Mushroom Key Release Operator 60 mm



Shipping Wt. 78 g (2.9 oz.) Plastic
Shipping Wt. 114 g (4.2 oz.) Metal

A	B		C	
	Out	In	Ronis	Zadi
60 (2.4)	41 (1.6)	36 (1.4)	27 (1.1)	24 (.94)

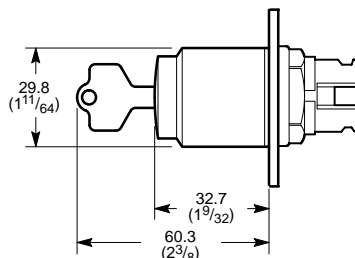
E-Stop Key Release Mushroom Operators 40 mm and 60 mm



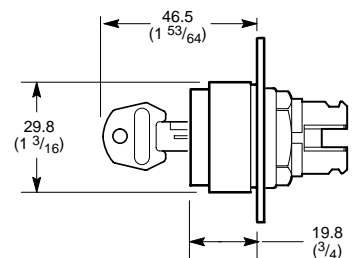
Shipping Wt. 111 g (3.9 oz.) 40 mm Metal

A	B	
	Out	In
40 (1-9/16)	34 (1-11/32)	29.2 (1-9/64)
60 (2-19/64)	34 (1-11/32)	29.2 (1-9/64)

Key Selector Switch Operators



Low Profile Key Selector Switch Operators



Shipping Wt. 50 g (1.8 oz.) Plastic
Shipping Wt. 63 g (2.2 oz.) Metal

① Trigger action operators are compliant with EN418 Standards.

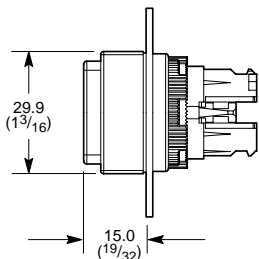
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions for Square Operators

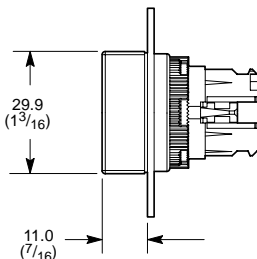
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Non-Illuminated Extended Head Operators



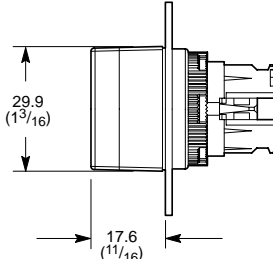
Shipping Wt. 21 g (0.7 oz.)

Non-Illuminated Alternate Action Flush Head Operators

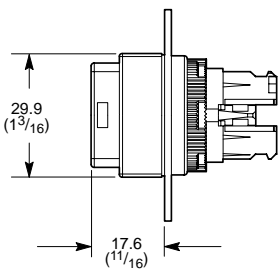


Shipping Wt. 19 g (0.7 oz.)

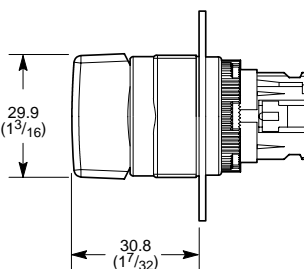
Illuminated Alternate Action Flush Head Operators



Illuminated Extended Head Operators

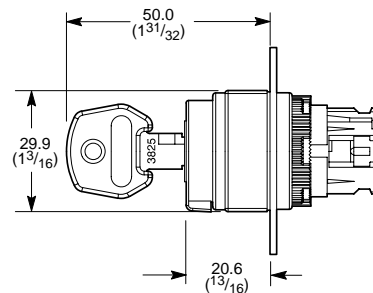


Selector Switch Operators

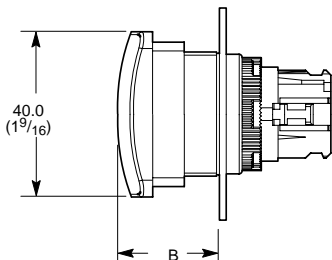


Shipping Wt. 64 g (2.3 oz.)

Key Operated Selector Switch Operators

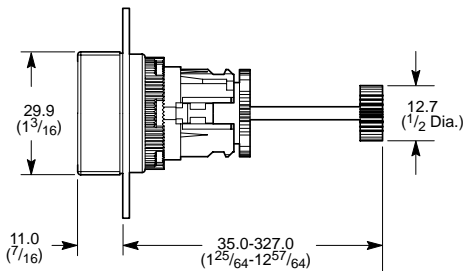


Mushroom Head Operators

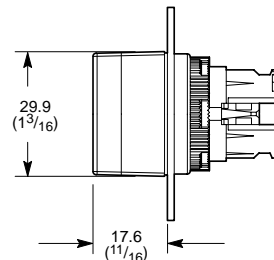


Shipping Wt. 28 g (1.0 oz.) Plastic

Reset Operators

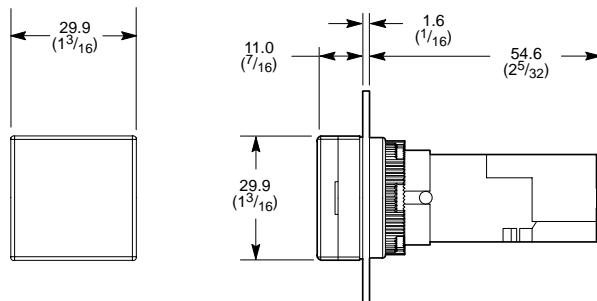


Non-Illuminated Guarded Operators



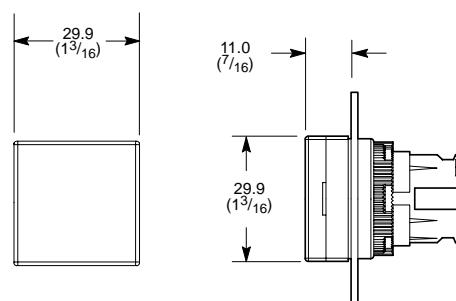
B	
Out	In
24.4 (31/32)	19.6 (49/64)

Monolithic Pilot Light Operators



Shipping Wt. 29 g (1.0 oz.)

Pilot Light Operators



Shipping Wt. 15 g (0.5 oz.)

22.5 mm Push Buttons

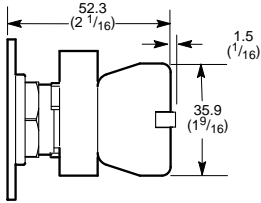
IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

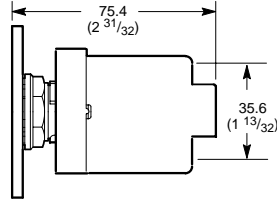
Back-of-Panel Components, 2-Across (2X) — Latch Width is 29.5 (1.16)

Full Voltage Module with Latch



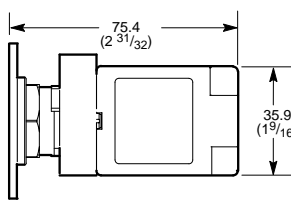
Shipping Wt. 50 g (1.8 oz.)

Dual Input Diode Module with Latch



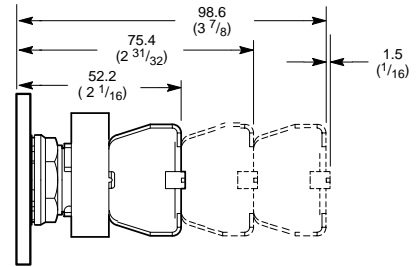
Shipping Wt. 100 g (3.5 oz.)

Transformer or Resistor Module with Latch



Shipping Wt. 95 g (3.4 oz.)

Contact Cartridges with Latch (Maximum of 3 Deep)

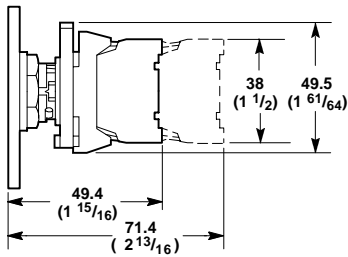


Shipping Wt. 33 g (1.2 oz.) Latch
Shipping Wt. 15 g (0.53 oz.) One Contact Block

Note: Latch width for all 2-across back-of-panel components is 29.5 (1-5/32).

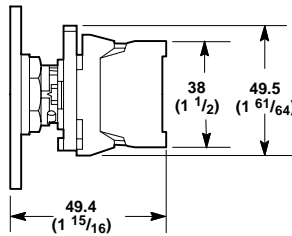
Back-of-Panel Components, 3-Across (3X) — Latch Width is 29.7 (1.17)

Contact Cartridges with Latch (Maximum of 2 Deep)



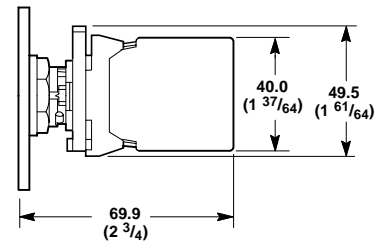
Shipping Wt. 10 g (0.4 oz.) Latch
Shipping Wt. 11 g (0.4 oz.) One Contact Block

Full Voltage or Resistor Module with Latch



Shipping Wt. 23 g (0.8 oz.)

Transformer Module with Latch

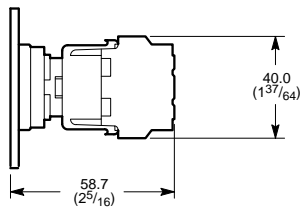


Shipping Wt. 70 g (2.5 oz.)

Note: Latch width for all 3-across and 4-across back-of-panel components is 29.7 (1-11/64).

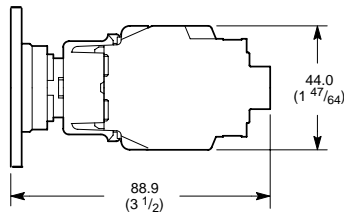
Back-of-Panel Components, 4-Across (4X) — Latch Width is 29.7 (1.17)

Contact Cartridges with Latch



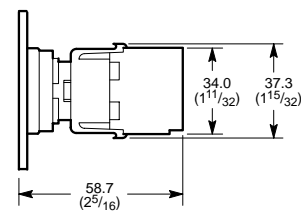
Shipping Wt. 13 g (0.5 oz.) Latch
Shipping Wt. 10 g (0.4 oz.) One Contact Block

2-Circuit Contact Cartridge with Latch



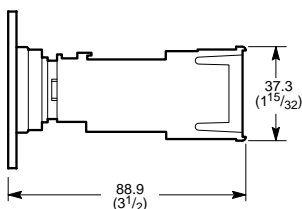
Shipping Wt. 20 g (0.7 oz.)

Full Voltage Module with Latch (Also applies to latch with full voltage module and contacts.)

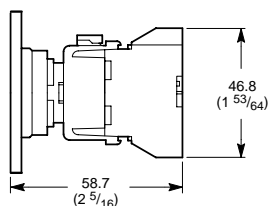


Shipping Wt. 10 g (0.4 oz.)

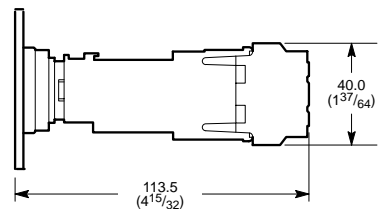
Tall Transformer (277V-600V) Module (Latch Built-in)



Compact Transformer or Resistor Modules with Latch



Tall Transformer Module with Contacts (Latch Built-in)



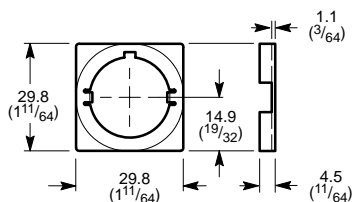
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions, Continued

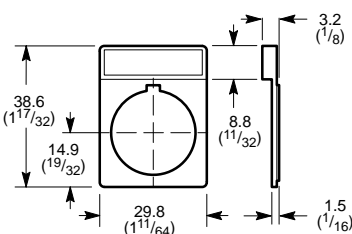
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Square Bezel



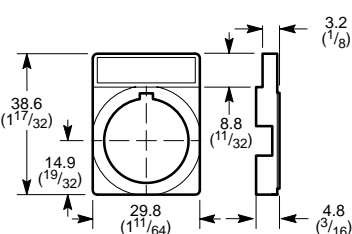
Cat. No. 800E-ABZ1

30 x 40 mm Standard Legend Plate



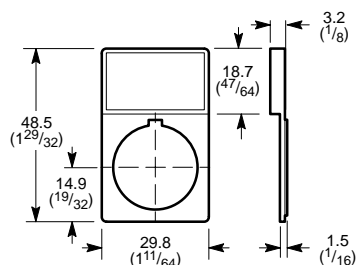
Shipping Wt. 2 g (0.1 oz.)
Cat. No. 800E-11

30 x 40 mm Legend Plate Square Appearance



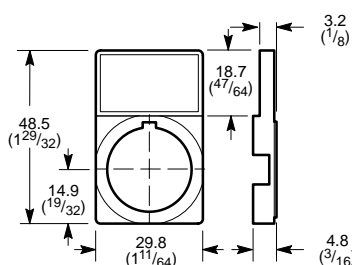
Shipping Wt. 3 g (0.1 oz.)
Cat. No. 800E-13

30 x 50 mm Standard Legend Plate



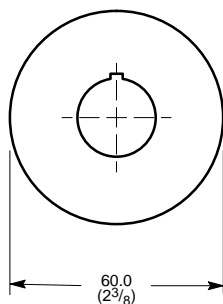
Cat. No. 800E-12

30 x 50 mm Legend Plate Square Appearance



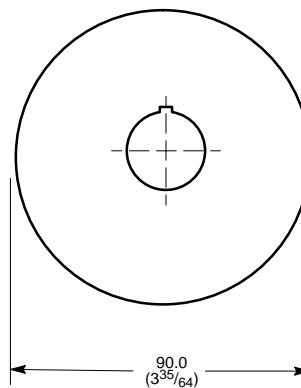
Cat. No. 800E-14

60 mm Round Legend



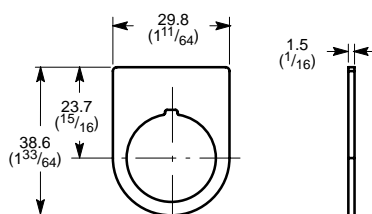
Cat. No. 800E-15Y

90 mm Round Legend



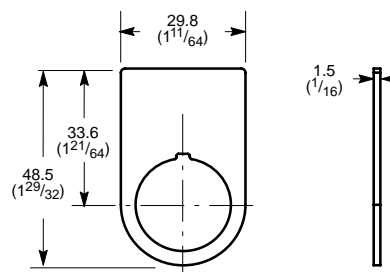
Cat. No. 800E-16Y

30 x 40 mm One-Piece Legend Plate



Shipping Wt. 2 g (0.1 oz.)
Cat. No. 800E-34

30 x 50 mm One-Piece Legend Plate



Shipping Wt. 2 g (0.1 oz.)
Cat. No. 800E-35

Note: Panel thickness range from 1.0 (3/64) to 6.0 (15/16) maximum.
Panel thickness reduced to 4.5 (11/64) when optional legend plates are used.

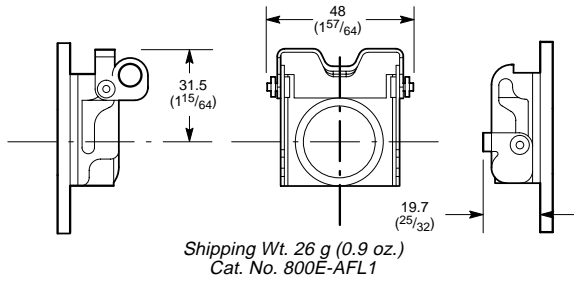
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

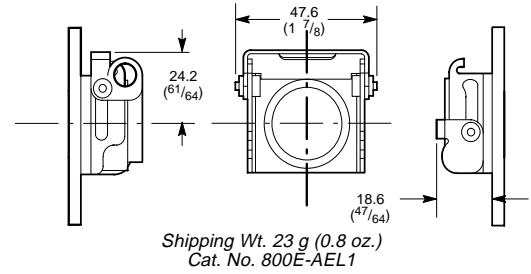
Approximate Dimensions, Continued

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

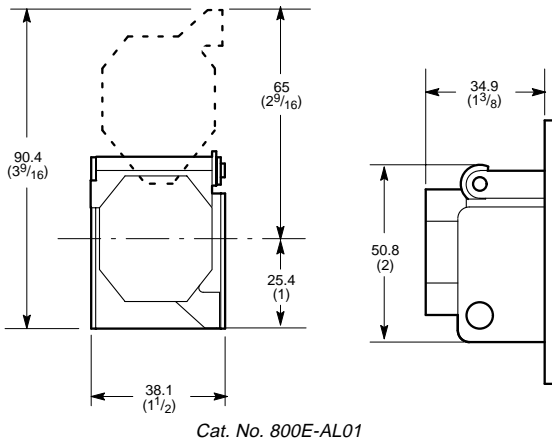
Flush Non-Illuminated Push Button Locking Attachment



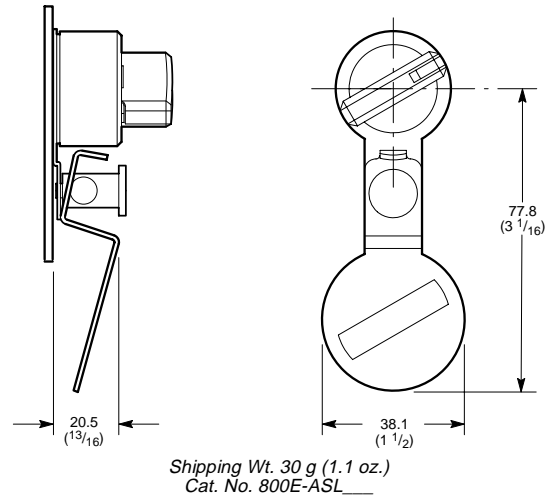
Extended Non-Illuminated Push Button Locking Attachment



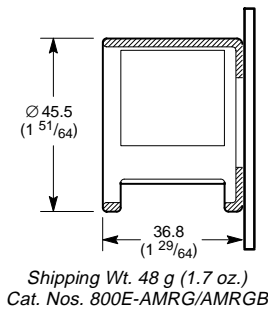
Locking Cover



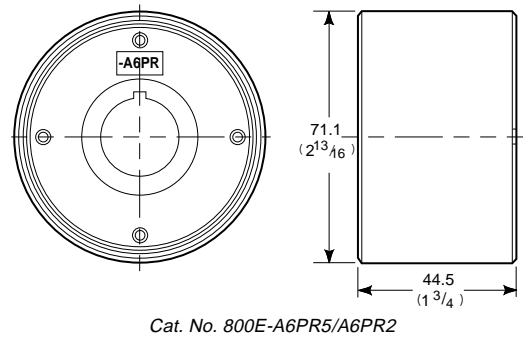
2- and 3-Position Selector Switch Locking Attachment ❶



40 mm Mushroom Push-Pull Protective Ring (Stainless Steel)



Plastic Guard



❶ This locking attachment may interfere with the operation of operators located beneath.

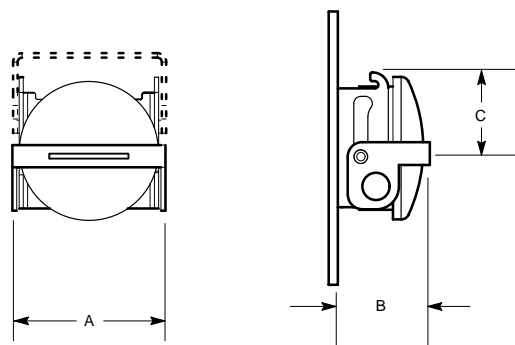
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

Approximate Dimensions, Continued

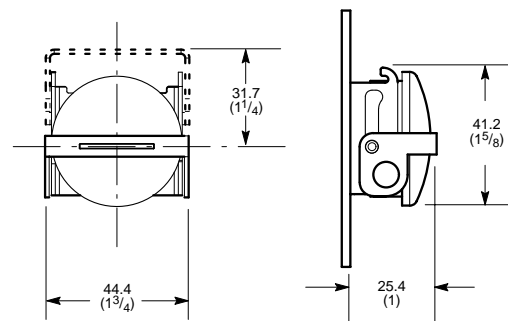
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

40 mm Mushroom Style Operator Locking Attachments (see table below)



Cat. No. 800E-AML_

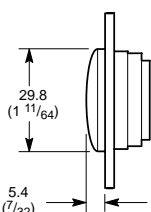
40 mm Momentary Mushroom Locking Attachment



Cat. No. 800E-AML1

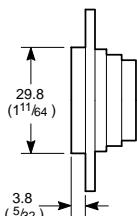
Cat. No.	A	B	C
800E-AML1	44.4 (1-3/4)	25.4 (1)	20 (13/16)
800E-AML2	50.8 (2)	31.8 (1-1/4)	29.7 (1-13/16)
800E-AML3	50.8 (2)	33.3 (1-3/8)	29.7 (1-3/16)
800E-AML4	50.8 (2)	23.4 (15/16)	21.3 (27/32)

22.5 mm Round Hole Plugs



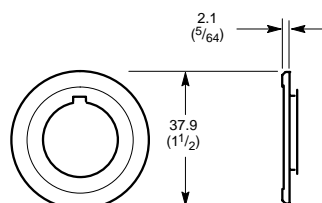
Cat. No. 800E-N_

22.5 mm Square Hole Plugs



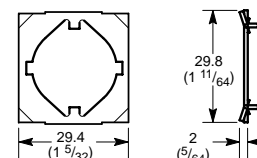
Cat. No. 800E-N_

30 mm to 22.5 mm Hole Adapter



Cat. No. 800E-AHA_

Anti-Rotation Washer



Cat. No. 800E-ALC1

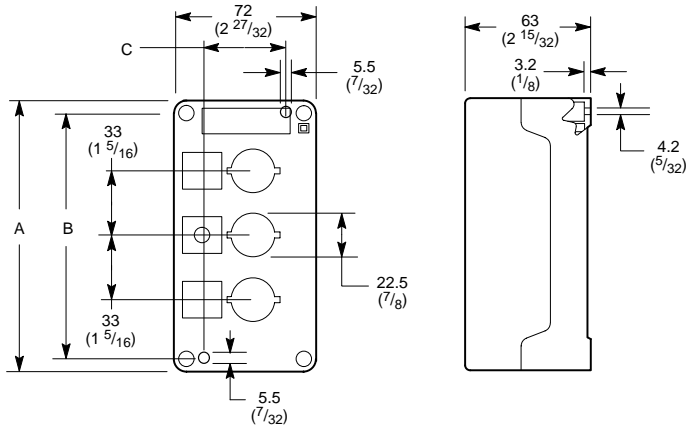
22.5 mm Push Buttons

IP66, Type 4/4X/13 (Plastic) — IP66, Type 4/13 (Metal)

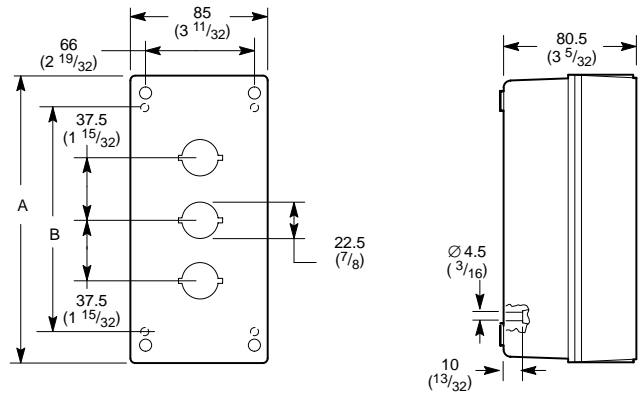
Approximate Dimensions, Continued

Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Plastic Enclosures



Aluminum Enclosures



Plastic Enclosures

Cat. No.	No. of Units (Holes)	A	B	C	Weight
800E-1P 800E-1PY	1	72 (2-27/32)	59 (2-5/16)	41 (1-5/8)	95 g (3.5 oz.)
800E-2P	2	105 (4-1/8)	92 (3-5/8)	41 (1-5/8)	140 g (4.9 oz.)
800E-3P	3	138 (5-7/16)	125 (4-29/32)	41 (1-5/8)	169 g (6.2 oz.)
800E-5P	5	215 (8-15/32)	184 (7-1/4)	59 (2-5/16)	238 g (8.7 oz.)

Aluminum Enclosures

Cat. No.	No. of Units (Holes)	A	B	Weight
800E-1L 800E-1LY 800E-1M 800E-1MY	1	99 (3-9/32)	62 (2-7/16)	465 g (16.4 oz.)
800E-2L 800E-2M	2	137 (5-13/32)	100 (3-15/16)	550 g (19.4 oz.)
800E-3L 800E-3M	3	174 (6-27/32)	137 (5-13/32)	670 g (23.7 oz.)
800E-5L 800E-5M	5	249 (9-13/16)	212 (8-11/32)	850 g (30 oz.)

DeviceNet Pendant Stations

