

Bulletin 800F
22.5 mm Push Buttons
 Product Selection

3-Position Selector Switch Operators, Non-Illuminated

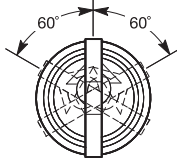


Standard Knob
 Cat. No. 800FP-SM32



Knob Lever
 Cat. No. 800FM-HM32

Switching Angle



Target Table and Operator Position (60° Switching Angle)				
Contact Type*	Position on Mounting Latch			
N.O.	Left	X	O	O
	Right	O	O	X
	Center	X	O	X
	Center CL‡	X	O	O
	Center CR‡	O	O	X
N.C.	Left	O	X	X
	Right	X	X	O
	Center	O	X	O
	Center CL‡	O	X	X
	Center CR‡	X	X	O

Note: X = Closed/O = Open

* Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.

Color	Operator Type		Pkg. Quantity	Standard Knob		Knob Lever	
				Plastic	Metal	Plastic	Metal
				Cat. No.	Cat. No.	Cat. No.	Cat. No.
Black with White Insert			1	800FP-SM32	800FM-SM32	800FP-HM32	800FM-HM32
				800FP-SB32	800FM-SB32	800FP-HB32	800FM-HB32

800F -

a b c d e f

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

c

Operator Function	
Code	Type
M3	Maintained
L3	Spring return from left
R3	Spring return from right
B3	Spring return from left and right

d

Knob/Insert Color		
Code	Knob Color	Insert Color
2	Black	White

e

Orientation	
Code	Description
Blank	Standard
N	90° offset*

f

Operation	
Code	Description
Blank	Standard
CL	Center left‡
CR	Center right‡

10

* 30 mm hole spacing will not work if knob lever is used. See page 10-125 for recommended operator panel spacing.

* For use in vertical mount enclosures.

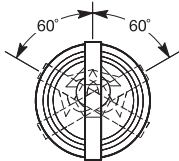
‡ The center contact block can have the same target output as the left or right contact block, by specifying center left (CL) or center right (CR) option.

3-Position Selector Switch Operators, Illuminated ‡



Standard Knob
 Cat. No. 800FP-LSM37

Switching Angle



Target Table and Operator Position (60° Switching Angle)				
Contact Type*	Position on Mounting Latch			
N.O.	Left	X	O	O
	Right	O	O	X
N.C.	Left	O	X	X
	Right	X	X	O

Note: X = Closed/O = Open

* Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.

Operator Type 	Pkg. Quantity	Green		Red		Yellow	
		Plastic Cat. No.	Metal Cat. No.	Plastic Cat. No.	Metal Cat. No.	Plastic Cat. No.	Metal Cat. No.
	1	800FP-LSM33	800FM-LSM33	800FP-LSM34	800FM-LSM34	800FP-LSM35	800FM-LSM35
		800FP-LSR33	800FM-LSR33	800FP-LSR34	800FM-LSR34	800FP-LSR35	800FM-LSR35
		800FP-LSL33	800FM-LSL33	800FP-LSL34	800FM-LSL34	800FP-LSL35	800FM-LSL35
		800FP-LSB33	800FM-LSB33	800FP-LSB34	800FM-LSB34	800FP-LSB35	800FM-LSB35

800F P - LS M3 3 e
 a b c d e

a

Operator Construction	
Code	Description*
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Description
LS	Standard knob
LH	Knob lever§

c

Operator Function	
Code	Type
M3	Maintained
L3	Spring return from left
R3	Spring return from right
B3	Spring return from left and right

d

Knob/Insert Color		
Code	Knob Color	Insert Color
0	Amber➤	White
3	Green	White
4	Red	White
5	Yellow➤	Black
6	Blue➤	White
7	Clear	Black

e

Orientation	
Code	Description
Blank	Standard
N	90° offset*

* LED module required for illumination, can not use incandescent module.
 ‡ For use in vertical mount 800F enclosures.
 † Crevices may exist on product that may be unsuitable for certain applications. Please consult your local Rockwell Automation sales office or Allen-Bradley distributor.
 § Only available in clear.
 ➤ Use of a white LED is recommended.

4-Position Selector Switch Operators, Non-Illuminated



Standard Knob
 Cat. No. 800FP-SM42

Target Table and Operator Position*					
Contact Type§	Position on Mounting Latch				
N.O.	Left	O	O	X	O
	Right	X	O	O	O
	Center	X	O	X	O
	Center CL	O	O	X	O
	Center CR	X	O	O	O
N.C.E.B.	Left	O	O	O	X
	Right	O	X	O	O
	Center CL	O	O	O	X
	Center CR	O	X	O	O
N.C.L.B.	Left	X	X	O	X
	Right	O	X	X	X
	Center	O	X	O	X
	Center CL	X	X	O	X
	Center CR	O	X	X	X

Note: X = Closed/O = Open

§ Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.

Color	Standard Knob — Maintained		Pkg. Quantity
	Plastic	Metal	
	Cat. No.	Cat. No.	
Black with White Insert	800FP-SM42	800FM-SM42	1

800F **P** - **S** **M4** **2** **e** **f**

a *b* *c* *d* *e* *f*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

c

Operator Function	
Code	Type
M4	Maintained (45° switching angle)

e

Orientation	
Code	Description
Blank	Standard
N	90° offset*

b

Operator Type	
Code	Description
S	Standard knob
H	Knob lever

d

Knob/Insert Color		
Code	Knob Color	Insert Color
2	Black	White

f

Operation	
Code	Description
Blank	Standard
CL	Center left‡
CR	Center right‡

* Must use N.O., N.C.E.B., or N.C.L.B. contact blocks only. Cannot use N.C. or N.O.E.M. contact blocks with 4-position selector switch.

‡ For use in vertical mount enclosures.

‡ The center contact block can have the same target output as the left or right contact block, by specifying center left (CL) or center right (CR) option.



2-Position Key-Operated Selector Switches, Non-Illuminated



Key Selector Switch
 Cat. No. 800FP-KM21R

Switching Angle



Target Table and Operator Position*		
Contact Type➤		
N.O.	O	X
N.C.	X	O

Note: X = Closed/O = Open

➤ Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.

Key Removal Position	Operator Type	Pkg. Quantity	Key Selector Switch Operators	
				Plastic Cat. No.
Left		1	800FP-KM21	800FM-KM21
Both			800FP-KM23	800FM-KM23

* Target table for spring return from left is reversed from what is shown in the table.

800F M - KM2 1

a b c d

a

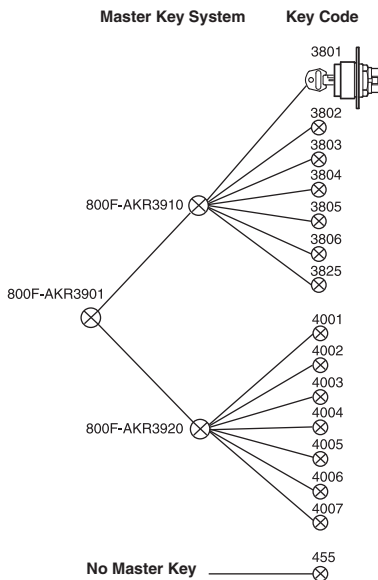
Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Type
KM2	Maintained (60° switching angle)
KL2	Spring return from left (60° switching angle)
KR2	Spring return from right (60° switching angle)

c

Key Removal Position*	
Code	Position
1	Left
2	Right
3	Both



d

Ronis Key Lock†\$*	
Code	Key No.
Blank	3825 (Standard)
R	455
01R	3801
02R	3802
03R	3803
04R	3804
05R	3805
06R	3806
27R	4001
28R	4002
29R	4003
30R	4004
31R	4005
32R	4006
33R	4007

* Key removal in maintained positions only.

† Keyed operators are IP66, Type 4/13.

\$ Not intended for high security applications. Interoperability is possible with certain key/cylinder lock combinations. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for interoperability information.

* For replacement Ronis keys, see Accessories, page 10-111.

22.5 mm Push Buttons

Product Selection

3-Position Key-Operated Selector Switches, Non-Illuminated

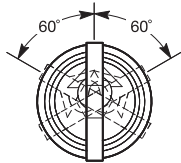


Key-Operated Selector Switch
Cat. No. 800FP-KM31R



Key-Operated Selector Switch
Cat. No. 800FM-KM31R

Switching Angle



Target Table and Operator Position

Contact Type➤	Position on Mounting Latch			
		N.O.	Left	X
	Right	O	O	X
	Center	X	O	X
N.C.	Left	O	X	X
	Right	X	X	O
	Center	O	X	O

Note: X = Closed/O = Open

➤ Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.

Key Removal Position	Operator Position			Pkg. Quantity	Key Selector Switch Operators	
					Plastic	Metal
					Cat. No.	Cat. No.
Left				1	800FP-KM31	800FM-KM31
All					800FP-KM33	800FM-KM33
Center					800FP-KM34	800FM-KM34
Center					800FP-KB34	800FM-KB34

800F M - KM3 3

a b c d

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Description
KM3	Maintained
KR3	Spring return from right
KL3	Spring return from left
KB3	Spring return from both

c

Key Removal Position*	
Code	Type
1	Left
3	All
4	Center
5	Left/center
7♣	Center/right

See page 10-83 for optional key codes*‡§

* Key removal in maintained positions only.

♣ Keyed operators are IP66, Type 4/13.

‡ Not intended for high security applications. Interoperability is possible with certain key/cylinder lock combinations. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for interoperability information.

§ For replacement Ronis keys, see Accessories, page 10-111.

♣ Key removal position only valid with operator types 800F_-KM3 and 800F_-KL3.

Emergency Stop Operators*

Non-Illuminated Twist-to-Release, Push-Pull



60 mm Non-Illuminated Twist-to-Release
 Cat. No. 800FP-MT64



40 mm Non-Illuminated Push-Pull
 Cat. No. 800FP-MP44

Color	Size	Pkg. Quantity	Twist-to-Release (Trigger Action)		Push-Pull (Trigger Action)	
			Plastic	Metal	Plastic	Metal
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
Red	30	1	800FP-MT34	800FM-MT34	—	—
	40		800FP-MT44	800FM-MT44	800FP-MP44	800FM-MP44
	60		800FP-MT64	800FM-MT64	—	—

Illuminated — Twist-to-Release, Push-Pull‡



40 mm Illuminated Twist-to-Release
 Cat. No. 800FP-LMT44



40 mm Mushroom Push/Pull
 Cat. No. 800FM-LMP44

Color	Size	Pkg. Quantity	Twist-to-Release (Trigger Action)		Push-Pull (Trigger Action)	
			Plastic	Metal	Plastic	Metal
			Cat. No.	Cat. No.	Cat. No.	Cat. No.
Red	30	1	—	—	800FP-LMP34	800FM-LMP34
	40		800FP-LMT44	800FM-LMT44	800FP-LMP44	800FM-LMP44
	60		800FP-LMT64	800FM-LMT64	800FP-LMP64	800FM-LMP64

Key Release Mushroom Operator



40 mm Non-Illuminated Key Release
 Cat. No. 800FP-MK44

Color	Size	Pkg. Quantity	Ronis Key Lock (Trigger Action)*	
			Plastic	Metal
			Cat. No.	Cat. No.
Red	40 mm	1	800FP-MK44	800FM-MK44

* All emergency stop operators are EN ISO 13850 compliant with standard NC, NCLB, or self-monitoring contact blocks.

‡ LED module required for illumination, can not use incandescent module.

* For key options, see page 10-88.

22.5 mm Push Buttons

Product Selection

2-Position Push-Pull Operators, Non-Illuminated — Twist-to-Release (Trigger Action), Push-Pull (Trigger Action)*‡



40 mm Trigger Action
Twist-to-Release Mushroom
Cat. No. 800FP-MT44



40 mm Trigger Action
Push-Pull Mushroom
Cat. No. 800FP-MP44



90 mm Half-Dome
Cat. No. 800FP-MP94

Color	Pkg. Quantity	40 mm Mushroom (Trigger Action) Twist-to-Release		40 mm Mushroom (Trigger Action) Push-Pull	
		Plastic	Metal	Plastic	Metal
		Cat. No.	Cat. No.	Cat. No.	Cat. No.
Red	1	800FP-MT44	800FM-MT44	800FP-MP44	800FM-MP44

800F P - MT4 4
 a b c d

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Push, Twist-to-Release➤	
Code	Type
MT3	30 mm color cap
MT4	40 mm color cap
MT6	60 mm color cap
Push-Pull‡	
Code	Type
MP4	40 mm color cap
Half-Dome Push-Pull‡	
Code	Type
MP9	90 mm color cap‡

c

Color Cap	
Code	Color
2	Black
3	Green
4	Red
5	Yellow
6	Blue

d‡§*

Engraving	
Code	Description
Blank	No engraving on cap
LE	EMO laser engraved
E	EMO printed

- * All emergency stop operators are EN ISO 13850 compliant with standard NC, NCLB, or self-monitoring contact blocks.
- ‡ E-Stop operators, latch, and contact block combinations have been third-party tested for B10d values. B10d values can be found in publication SAFETY-SR001_EN-E.
- Only available with red color cap.
- ‡ For EMO guards, see page 10-109.
- § Only available on 40 mm color cap.
- * Only available on red, 40 mm push, twist-to-release operator type (MT44).
- ‡ Half-dome operators only available with black, red, and yellow color caps.
- ‡ Limit of four contact blocks max. for these devices.

2-Position Push-Pull Operators, Illuminated — Twist-to-Release (Trigger Action), Push-Pull (Trigger Action)*⊕



40 mm Illuminated Twist-to-Release
 Cat. No. 800FP-LMT44



40 mm Mushroom Push/Pull
 Cat. No. 800FM-LMP44



90 mm Half-Dome
 Cat. No. 800FP-LMP94

Color	Pkg. Quantity	40 mm Mushroom (Trigger Action) Twist-to-Release		40 mm Mushroom (Trigger Action) Push-Pull	
		Plastic Cat. No.	Metal Cat. No.	Plastic Cat. No.	Metal Cat. No.
Red	1	800FP-LMT44	800FM-LMT44	800FP-LMP44	800FM-LMP44

800F P - LMP4 3
 a b c

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/4X/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Push, Twist-to-Release†§	
Code	Type
LMT4	40 mm color cap
LMT6	60 mm color cap
Push-Pull⊕	
Code	Type
LMP3	30 mm color cap
LMP4	40 mm color cap
LMP6	60 mm color cap
Half-Dome Push-Pull⊕	
Code	Type
LMP9	90 mm color cap⊗

c

Lens Cap Color	
Code	Color
3	Green
4	Red
5	Yellow➤
6	Blue♣

- * LED module required for illumination, can not use incandescent module.
- ⊗ All emergency stop operators are EN ISO 13850 compliant with standard NC, NCLB, or self-monitoring contact blocks.
- ⊕ E-Stop operators, latch, and contact block combinations have been third-party tested for B10d values. B10d values can be found in publication SAFETY-SR001_-EN-E.
- † Only available with red color cap.
- § 60 mm version has black arrows; 30 and 40 mm versions have white arrows.
- Use of a white LED is recommended.
- ♣ Only available with 40 mm Push-Pull color cap (**LMP4** from Table b).
- ⊗ Half-dome operators only available with red and yellow lens cap colors.
- ⊕ Limit of four contact blocks max. for these devices.

22.5 mm Push Buttons

Product Selection

2-Position Non-Illuminated Operators — Mushroom, Key Release (Trigger Action)*♣



40 mm Key Release Mushroom
Cat. No. 800FP-MK44

Color	Pkg. Quantity	2-Position (Trigger Action) 40 mm Mushroom Key Release	
		Plastic	Metal
Red	1	Cat. No. 800FP-MK44	Cat. No. 800FM-MK44

Note: For replacement Ronis keys, see Accessories, page 10-111. Key release mushroom operators use key no. 3825.

800F P - MK4 4

 a b c d

a

Operator Construction	
Code	Description
P	Round plastic operator (IP66, Type 4/13)
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Key Release Mushroom	
Code	Type
MK4	40 mm

c

Lens Cap Color	
Code	Color
4	Red

d

Ronis Key Lock*‡§	
Code	Key No.
Blank	3825 (Standard)
R	455
01R	3801
02R	3802
03R	3803
04R	3804
05R	3805
06R	3806
27R	4001
28R	4002
29R	4003
30R	4004
31R	4005
32R	4006
33R	4007

- * All emergency stop operators are EN ISO 13850 compliant with standard NC, NCLB, or self-monitoring contact blocks.
- ♣ E-Stop operators, latch, and contact block combinations have been third-party tested for B10d values. B10d values can be found in publication SAFETY-SR001_-EN-E.
- ⚙ Keypad operators are IP66, Type 4/13.
- ‡ Not intended for high security applications. Interoperability is possible with certain key/cylinder lock combinations. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for interoperability information.
- § For replacement Ronis keys, see Accessories, page 10-111.

3-Position Push-Pull Operators, Illuminated & Non-Illuminated — Mushroom*



Illuminated 3-Position Push-Pull
 Cat. No. 800FM-LMP44E3

Target Table and Operator Position*			
Contact Type†			
	Out	Center	In
N.O.	O	O	X
N.C.E.B.	X	O	O
N.C.L.B.	X	X	O

Note: X = Closed/O = Open

† Contact selection is limited to the following options, consult your local Rockwell Automation sales office or Allen-Bradley distributor for other options.

Operator Function	Operator Type	Color	Pkg. Quantity	Cat. No.
Momentary Out, Maintained Center, Momentary In	Non-Illuminated	Black§	1	800FM-MM42E3
		Green		800FM-MM43E3
		Red➤		800FM-MM44E3
	Illuminated*	Amber‡		800FM-LMM40E3
		Green		800FM-LMM43E3
		Red		800FM-LMM44E3
		Blue‡		800FM-LMM46E3
		Clear‡		800FM-LMM47E3
Momentary Out, Maintained Center, Maintained In	Non-Illuminated	Black§	1	800FM-MP42E3
		Green		800FM-MP43E3
		Red➤		800FM-MP44E3
	Illuminated*	Amber‡		800FM-LMP40E3
		Green		800FM-LMP43E3
		Red		800FM-LMP44E3
		Blue‡		800FM-LMP46E3
		Clear‡		800FM-LMP47E3

800F **M** - **L** **MM** **4** **4** **E3**
 a **b** **c** **d** **e** **f**

a

Operator Construction	
Code	Description
M	Round metal operator (IP66, Type 4/13)

b

Operator Type	
Code	Description
Blank	Non-illuminated
L	Illuminated*

c

Operator Function	
Code	Description
MM	Momentary out, Maintained center, Momentary in
MP	Momentary out, Maintained center, Maintained in

d

Cap Size	
Code	Description
4	40 mm plastic

e

Cap Color	
Code	Description
0	Amber‡%
2	Black§
3	Green
4	Red
6	Blue‡%
7	Clear‡%

f

Positions	
Code	Description
E3	3-position

- * Sold as stand-alone operator only. Not available as a composite catalog number.
- * Must use N.O., N.C.E.B., or N.C.L.B. contact blocks only. Cannot use N.C. or N.O.E.M. contact blocks with 3-position push-pull operators.
- * LED module required for illumination. Cannot use incandescent module.
- ‡ Available in illuminated only.
- % Use of white LED is recommended.
- § Available in non-illuminated only.
- Replacement caps are available for this device. Order Cat. No. 800F-AMP4.

22.5 mm Push Buttons

Product Selection

Momentary Push Button Operators, Non-Illuminated — Mushroom*



40 mm Mushroom
Cat. No. 800FM-MM42



60 mm Mushroom
Cat. No. 800FP-MM63



90 mm Mushroom
Cat. No. 800FP-MM94

Color	Pkg. Quantity	40 mm Mushroom		60 mm Mushroom	
		Plastic	Metal	Plastic	Metal
		Cat. No.	Cat. No.	Cat. No.	Cat. No.
Black	1	800FP-MM42	800FM-MM42	800FP-MM62	800FM-MM62
Green		800FP-MM43	800FM-MM43	800FP-MM63	800FM-MM63
Red		800FP-MM44	800FM-MM44	800FP-MM64	800FM-MM64
Yellow		800FP-MM45	800FM-MM45	800FP-MM65	800FM-MM65
Blue		800FP-MM46	800FM-MM46	800FP-MM66	800FM-MM66

800F **P** - **MM4** **3**
a *b* *c*

a

Operator Construction	
Code	Description
P	Round plastic operator (IP65, Type 4/4X/13)
M	Round metal operator (IP65, Type 4/13)

b

Size and Operator Type	
Code	Type
MM4	40 mm momentary
MM6	60 mm momentary
MM9	90 mm momentary*

c

Color Cap	
Code	Color
2	Black
3	Green
4	Red
5	Yellow
6	Blue

* Momentary mushroom operators are IP65 rated.
 * Only available with black, red, and yellow cap colors.

22.5 mm Push Buttons

Product Selection

2-Function Momentary Multi-Operator, Non-Illuminated

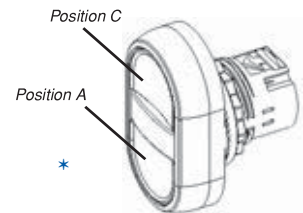


2-Function Momentary Multi-Operator Non-Illuminated
Cat. No. 800FP-U2E4F3

Position A			Position C			Pkg. Quantity	Plastic
Color	Type	Text	Color	Type	Text		Cat. No.
Red	Extended	Blank	Green	Flush	Blank	1	800FP-U2E4F3
		O			I		800FP-U2EFFE
		STOP			START		800FP-U2EBFA

800F P – U2 E 4 F 3 (with button caps)
a b c d e f

800F P – U2 X (without button caps)
a b c



a

Operator Construction	
Code	Description
P	Plastic operator (IP66, Type 4/4X)
M	Metal operator (IP66, Type 4)

b

Operator Type	
Code	Description
U2	Two-function

c

Operator Type — Position A*	
Code	Description
F	Flush
E	Extended
X	No caps (all positions)*

d

Operator Color Cap/Text — Position A†	
Code	Description
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
A	Green with “Start” text
B	Red with “Stop” text
C	White with “Start” text
D	Black with “Stop” text
E	Green with “I” text
F	Red with “O” text
G	White with “I” text
H	Black with “O” text

f

Operator Color Cap/Text — Position C‡	
Code	Description
1	White
2	Black
3	Green
4	Red
5	Yellow
6	Blue
A	Green with “Start” text
B	Red with “Stop” text
C	White with “Start” text
D	Black with “Stop” text
E	Green with “I” text
F	Red with “O” text
G	White with “I” text
H	Black with “O” text

e

Operator Type — Position C*	
Code	Description
F	Flush
E	Extended

10

* Position 1 of the latch (left position when viewed from the back) corresponds to position A of the operator. Position 2 of the latch (right position when viewed from the back) corresponds to position C of the operator.

* For custom-engraved caps, order “no caps” option plus custom engraved caps on page 10-115.

‡ Valid color cap/legend text codes include:

Color	Text	
	Flush Caps	Extended Caps
White	START, I	—
Black	—	STOP, O
Green	START, I	—
Red	—	STOP, O



Overview, Continued

3-Across x 2-Deep Back-of-Panel (6 Circuits Max.)

- Rugged snap-fit design for plastic or metal latch
- Stackable contact blocks
- Rotating collar for easy one-hand latch removal
- Color-coded contact block plungers for contact identification

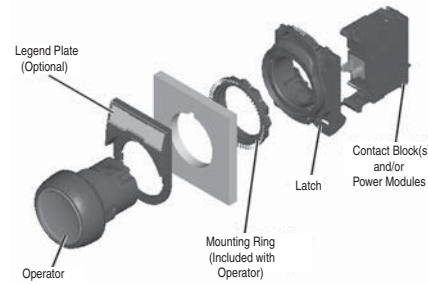


Plastic Latch with Contact Block



Metal Latch with Contact Block

Assembly Overview



Specifications*

Front-of-Panel (Operators)

Description		Mechanical Ratings	
		Plastic (Bulletin 800FP)	Metal (Bulletin 800FM)
Vibration (assembled to panel)		Tested at 10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./10 G max. for 3 hr duration, no damage	
Shock		Tested at 1/2 cycle sine wave for 11 ms; no damage at 100 G	
Degree of protection*		IP65/66 (Type 3/3R/4/4X/12/13)	IP65/66 (Type 3/3R/4/12/13)
Mechanical durability per EN 60947-5-1 (Annex C)	10 000 000 Cycles	Momentary push buttons, momentary mushroom	
	1 000 000 Cycles	Multi-function, selector switch, key selector switch, selector jog, SensEject™ key selector switch	
	500 000 Cycles	Non-illuminated push-pull E-stop‡	
	300 000 Cycles	Twist-to-release E-stop, illuminated push-pull E-stop‡, alternate action push buttons	
	100 000 Cycles	Potentiometer, toggle switch	
Operating forces (typical with one contact block)		Flush/extended = 5 N, E-stop = 36 N Mushroom = 9 N	
Operating torque (typical application with one contact block)		Selector switch = 0.25 N•m (2.2 lb•in)	
Mounting torque	Plastic	1.7 N•m (15 lb•in)	
	Metal	4.4 N•m (40 lb•in)	
Environmental			
Temperature range (operating)		-25...+70 °C (-13...+158 °F)§	
Temperature range (short term storage)		-40...+85 °C (-40...+185 °F)	
Humidity		50...95% RH from 25...60 °C (77...140 °F)	

* Performance Data — see page Important-3 of the Industrial Controls catalog.

⊛ Momentary mushroom operators are IP65. Plastic keyed operators are IP66, Type 4/13; not Type 4X.

‡ Limit of four contact blocks max. for these devices.

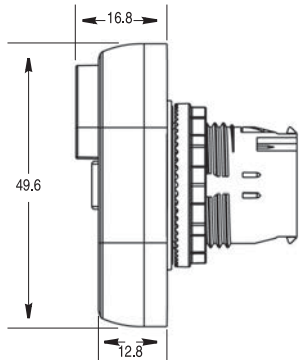
§ Operating temperatures below 0 °C (32 °F) are based on the absence of freezing moisture and liquids, UL Recognized to 55 °C (131 °F) - Incandescent module max. 40 °C (104 °F).

Product Certifications

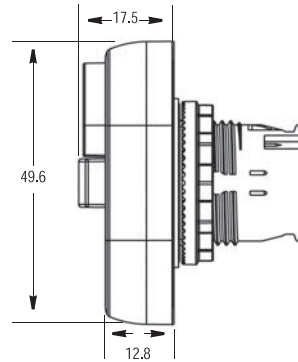
Certifications	UR/UL, CSA, CCC, CE
Standards Compliance — CE Marked	NEMA ICS-5; UL 508, EN ISO 13850, EN 60947-1, EN 60947-5-1, EN 60947-5-5
Terminal Identification	EN/IEC 60947-1
Shipping Approvals	ABS
RoHS	✓

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

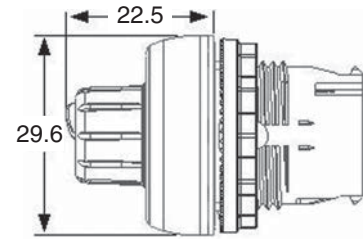
Illuminated and Non-Illuminated 2-Position Multi-Function Operators



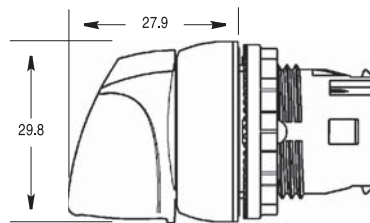
Non-Illuminated 3-Position Multi-Function Operators



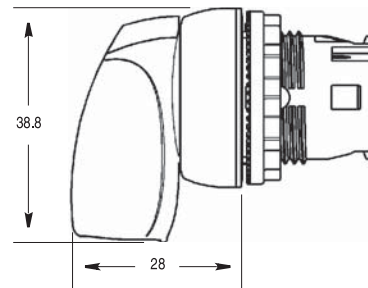
Potentiometer Operator



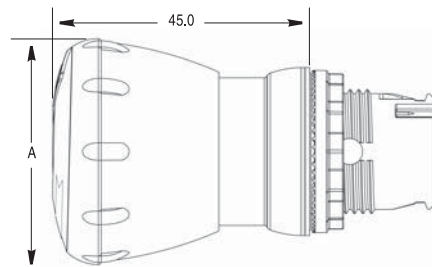
Illuminated and Non-Illuminated Knob Selector Switch Operators



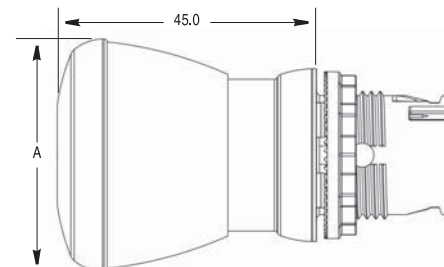
Non-Illuminated Knob Lever Selector Switch Operators



Illuminated and Non-Illuminated Twist-to-Release Operators 30 mm, 40 mm, and 60 mm

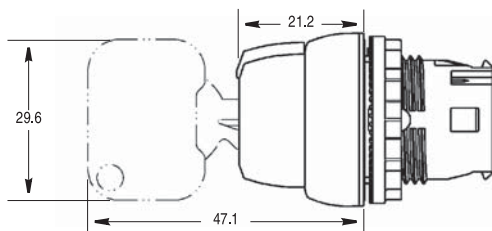


Illuminated and Non-Illuminated Push-Pull Mushroom Operators 30 mm, 40 mm, and 60 mm



Operator	A
30 mm	30.0
40 mm	40.0
60 mm	60.0

Key Selector Switch and Key Ejected SensEject Operators



Mushroom Key Release Operator 40 mm

