

# 16 mm Push Buttons

## Product Overview/Specifications



### Bulletin 800B — 16 mm Push Buttons

- Designed to worldwide standards (UL, CSA, CE, and CCC)
- Durable materials
  - Operators are made of corrosion-proof plastic to ensure long push button life
  - Consistent coloring and illumination make these easy to identify for the life of the operator
- Ease of installation
- Ergonomic design
  - Contoured button surface
- Dependable sealing
  - IP66 and Type 4/13
  - Diaphragm seals: linear travel devices, pilot lights
  - V-seals: selector switches, high pressure sealing
  - K-seals: emergency stops, dual wiping action
- Reliable low voltage switching
  - Gold-plated snap action contacts
  - Reliable operation in applications below 24V DC, 5 mA down to 5V DC, 1 mA
- Enhanced E-stop functionality
  - Anti-tease feature standard (trigger-action)
  - EN13850 and EN 60947-5-5 compliant
  - Direct Drive mechanism (positive actuation)





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### Standards Compliance and Certifications

<b>Certifications</b>	UR, CSA, CCC, CE
<b>Standards Compliance</b>	UL 508, EN ISO 13850, EN 60947-1, EN 60947-5-1, EN 60947-5-5
<b>Terminal Identification</b>	EN/IEC 60947-1
<b>RoHS Compliant</b>	✓

### Push Button & Pilot Light Operators\*

Operator Type	Cat. No.			
				
	Round	Square	Rectangle	Large Square
Momentary, push button/pilot light	<b>800B-EPA</b>	<b>800B-EPB</b>	<b>800B-EPC</b>	<b>800B-EPD</b>
Maintained, push button	<b>800B-EAA</b>	<b>800B-EAB</b>	<b>800B-EAC</b>	<b>800B-EAD</b>

**Note:** Package Quantity = 1

\* All operators are sold without a lens cap and diffuser.

### Lens Cap with Diffuser§



Cat. No. 800B-ALA3



Cat. No. 800B-ALB4



Cat. No. 800B-ALC5



Cat. No. 800B-ALD6









Lens Color	Cat. No.			
	Round	Square	Rectangle	Large Square
Green	<b>800B-ALA3</b>	<b>800B-ALB3</b>	<b>800B-ALC3</b>	<b>800B-ALD3</b>
Red	<b>800B-ALA4</b>	<b>800B-ALB4</b>	<b>800B-ALC4</b>	<b>800B-ALD4</b>
Yellow	<b>800B-ALA5</b>	<b>800B-ALB5</b>	<b>800B-ALC5</b>	<b>800B-ALD5</b>
Blue	<b>800B-ALA6</b>	<b>800B-ALB6</b>	<b>800B-ALC6</b>	<b>800B-ALD6</b>
White	<b>800B-ALA7</b>	<b>800B-ALB7</b>	<b>800B-ALC7</b>	<b>800B-ALD7</b>

**Note:** Package Quantity = 1

§ For illuminated devices, LED bulbs are color specific. (Green LED bulb with green lens caps, red LED bulbs with red lens cap, white LED bulbs used with yellow, blue, and white lens cap.) Incandescent bulbs can be used with any lens cap color.








**Selector Switch Operators\***

Operator Type	2-Position Selector Switches		3-Position Selector Switches	
				
	Maintained	Return from Right	Maintained	Return from Both
Cat. No.	<b>800B-SM2A</b>	<b>800B-SR2A</b>	<b>800B-SM3A</b>	<b>800B-SB3A</b>
Operator Type				
	Keyed, Maintained	Keyed, Return from Right	Keyed, Maintained	Keyed, Return from Both
Cat. No.	<b>800B-KM2A</b>	<b>800B-KR2A</b>	<b>800B-KM3A</b>	<b>800B-KB3A</b>

**Note:** Package Quantity = 1


**Target Table and Operator Position**

Contact Block Cat. No.	Contact Block Location	Contact Type	2-Position Target Table		3-Position Target Table		
							
800B-PS11	Top	NA	—	—	—	—	—
	Bottom	N.C.	X	O	O	X	X
		N.O.	O	X	X	O	O
800B-PS22	Top	N.C.	X	O	X	X	O
		N.O.	O	X	O	O	X
	Bottom	N.C.	X	O	O	X	X
		N.O.	O	X	X	O	O
800B-PT01	Top	NA	—	—	—	—	—
	Bottom	N.C.	X	O	O	X	X
800B-PT02	Top	N.C.	X	O	X	X	O
	Bottom		X	O	O	X	X
800B-PT11	Top	N.O.	O	X	O	O	X
	Bottom	N.C.	X	O	O	X	X

**Note:** X = Closed/O = Open

\* To illuminate a selector switch, add either an LED or incandescent bulb. All selector switches have a clear lens. Green and red LED bulbs can be used to change the selector switch color.

**Emergency Stop Operators — Non-Illuminated, Twist-to-Release (Trigger Action)‡**

	Description	Pkg. Quantity	Cat. No.
 <b>Cat. No. 800B-MT</b>	Emergency stop operator	1	<b>800B-MT</b>

‡ Operator is EN ISO 13850 compliant with standard N.C. contact blocks.


Bulletin 800B  
**16 mm Push Buttons**  
 Product Selection

**Contact Block/Latch Module**

	Description	Pkg. Quantity	Cat. No.
<b>Push Button/Selector Switch</b>			
 <i>Cat. No. 800B-PS11</i>	1 N.O./1 N.C. snap action	1	800B-PS11
 <i>Cat. No. 800B-PS22</i>	2 N.O./2 N.C. snap action	1	800B-PS22
<b>Pilot Light</b>			
 <i>Cat. No. 800B-PL</i>	Dummy block	1	800B-PL
<b>Emergency Stop/Push Button/Selector Switch</b>			
 <i>Cat. No. 800B-PT01</i>	1 N.C. slow make/break	1	800B-PT01
 <i>Cat. No. 800B-PT02</i>	2 N.C. slow make/break	1	800B-PT02
 <i>Cat. No. 800B-PT11</i>	1 N.O./1 N.C. slow make/break	1	800B-PT11

**Replacement Bulbs**

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	Description	Lamp Color	Lamp Voltage	Pkg. Quantity	Cat. No.
	LED bulb*	Green	12...24V AC/DC	1	800B-N3G
			120V AC		800B-N5G
		Red	12...24V AC/DC		800B-N3R
			120V AC		800B-N5R
		White	12...24V AC/DC		800B-N3W
			120V AC		800B-N5W
	Incandescent bulb*	Clear	6V AC/DC	800B-N1C	
			12V AC/DC	800B-N2C	
			24V AC/DC	800B-N3C	

\* Not available in 6V AC/DC.

⊛ Not available in 120V AC.

Accessories

	Description	Pkg. Quantity	Cat. No.
 Cat. No. 800B-ARP	Replacement mounting ring	10	800B-ARP
 Cat. No. 800B-AW2	Mounting ring wrench	1	800B-AW2
 Cat. No. 800B-ALR1	Bulb removal tool	1	800B-ALR1
 Cat. No. 800B-ALR2	Lens removal tool	1	800B-ALR2
 Cat. No. 800B-ALW1	Locking washer (anti-rotation)	10	800B-ALW1
 Cat. No. 800B-ATK	Stab connector (insulated)	10	800B-ATK
 Cat. No. 800B-N2	Hole plug	10	800B-N2
 Cat. No. 800B-AK1	Replacement key	1	800B-AK1
 Cat. No. 800B-APCB	Printed circuit board pin socket	10	800B-APCB
 Cat. No. 800B-15YE112	Emergency stop legend plate	1	800B-15YE112
 Cat. No. 800B-ABZB	Square bezel	10	800B-ABZB
 Cat. No. 800B-ABZC	Rectangle bezel	10	800B-ABZC
 Cat. No. 800B-ABZD	Large square bezel	10	800B-ABZD

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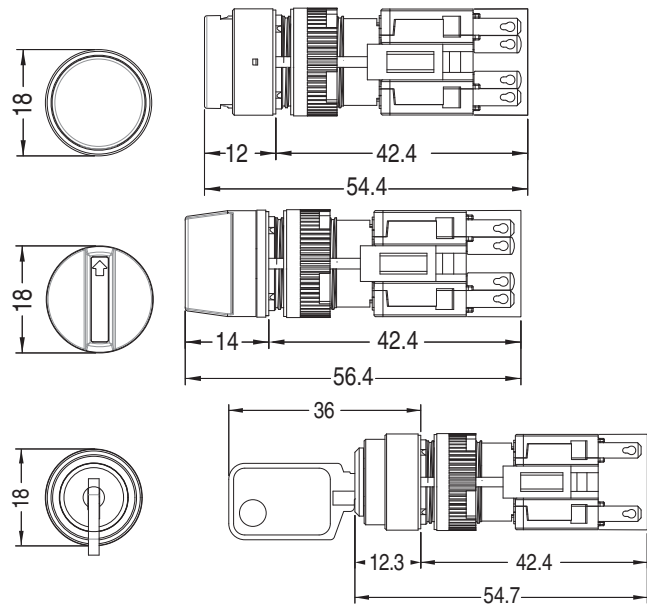
**Bulletin 800B**  
**16 mm Push Buttons**  
**Specifications**

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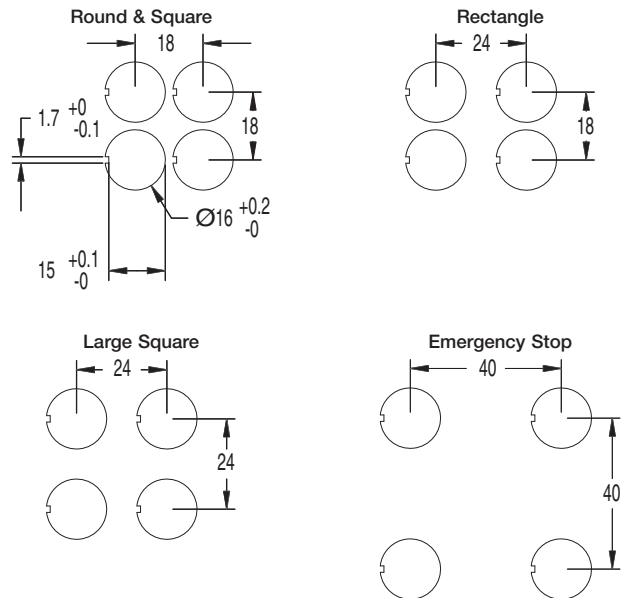
Mechanical Ratings			
Vibration (assembled to panel)	Tested at 10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./10 G max. for 6 hr duration, no damage		
Shock	Tested at 1/2 cycle sine wave for 11 ms; no damage at 100 G		
Degree of protection*	IP66, Type 4/4X/13		
Mechanical durability per EN 60947-5-1 (Annex C)	2 000 000 Cycles	Push buttons – momentary	
	1 000 000 Cycles	Push buttons – maintained	
	250 000 Cycles	Selector switch	
	200 000 Cycles	Key selector switch	
	200 000 Cycles	Twist-to-release E-stop	
Operating forces (typical with one contact block)	Extended = 5...8 N E-stop = 14...16 N		
Operating torque (typical application with one contact block)	Selector switch = 0.06 N•m (0.5 lb•in)		
Mounting torque	1.1 N•m (10 lb•in)		
Environmental			
Temperature range (operating)	-25...+55 °C (-13...+131 °F)		
Temperature range (short term storage)	-40...+70 °C (-40...+158 °F)		
Humidity	50...95% RH from 25...60 °C (77...140 °F)		
Mechanical Ratings — Contact Blocks			
Vibration (assembled to panel)	Tested at 10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./10 G max. 6 hr		
Shock	Tested at 1/2 cycle sine wave for 11 ms and no damage at 100 G max.		
Contact durability	200 000 cycles (Cat. No. 800B-PS_)		
Contact operation	N.O. / N.C.	Snap action	
	N.C.	Slow make/break positive opening	
	N.O.	Slow make/break	
Push button travel to change electrical state	1.4 mm (0.06 in.)		
Operating forces (typical)	1 contact block = 3 N 2 contact blocks = 6 N		
Electrical Ratings			
Standard contact block ratings	AC 15, B300, 1.5 A/240V AC, 3 A/120V AC DC 13, R300, 0.1 A/250V DC, 0.22 A/125V DC		
LED Module ratings	<b>Nominal Voltage</b>	<b>Current</b>	<b>Frequency</b>
	12...24V AC	12 mA	50/60 Hz
	12...24V DC 120V AC	12 mA 9 mA	DC 50/60 Hz
Thermal current	$I_{th} = 5 \text{ A (AC)}, I_{th} = 1 \text{ A (DC)}$		
Insulation voltage ( $U_i$ )	300V		
Stab termination	2.8 X 0.5 mm		
Dielectric strength (minimum)	1500V 1 min.		
External short circuit protection – standard blocks	6 A type gL/gG cartridge fuse to EN 60269-2-1 or gN (Class J to UL 248-8 or Class C to UL 248-4)		
Electrical shock protection	Finger-safe conforming to IP2X		
Illumination			
LED Dominant wavelength	Green	525 nm	
	Red	624 nm	
	White	—	
LED Luminous intensity	Green	500 mcd	
	Red	400 mcd	
	White	1000 mcd	
Incandescent maximum wattage	1.2 W		
Materials			
Springs	Stainless steel and gold-plated, high-carbon steel		
Electrical contacts	Gold-plated silver		
Stab terminals	Phosphor bronze with gold or nickel plating		
Lenses	Polycarbonate		

Approximate Dimensions

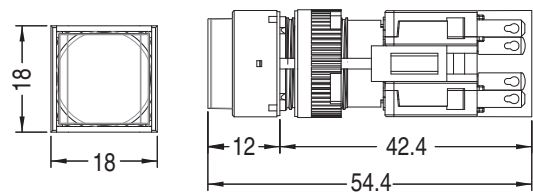
Round



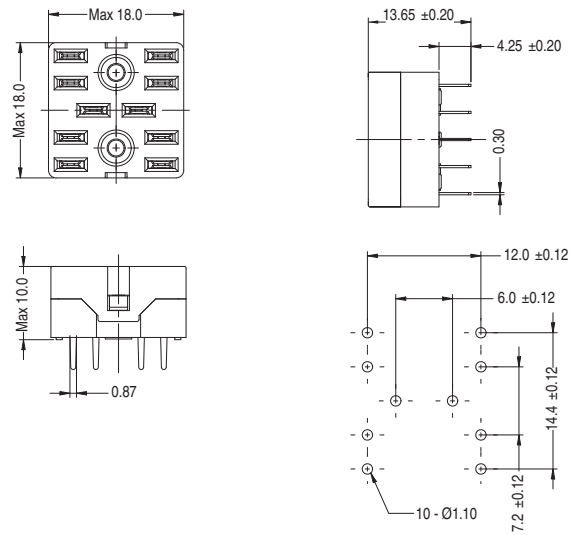
Hole Patterns



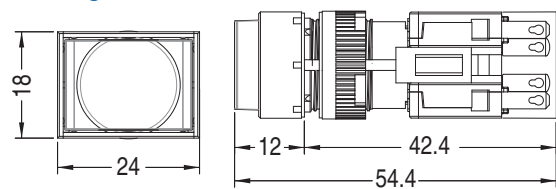
Square



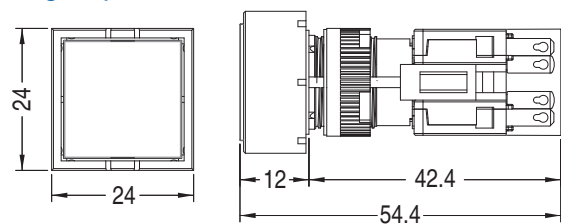
Printed Circuit Board Pin Socket



Rectangle



Large Square



Emergency Stop

