

Operator Interface  
**Touch Buttons**  
 Bul. 800Z



**General Purpose**  
 Cat. No. 800Z-GF2Q5



**General Purpose**  
 Cat. No. 800Z-GL3Q5B



**Heavy Industrial**  
 Cat. No. 800Z-HF1



**Heavy Industrial**  
 Cat. No. 800Z-HL1Y

**Description**

Bulletin 800Z Zero-Force Touch Buttons are designed for use by machine control systems requiring the use of two hands. An interlinked sensor surface weaves two capacitive sensors in offset planes for superior product sensitivity.

Bulletin 800Z touch buttons are ergonomically designed for ease of operation. Simply touching the surface of the switch will initiate an output. The Bulletin 800Z line can detect the hand through most industrial gloves.

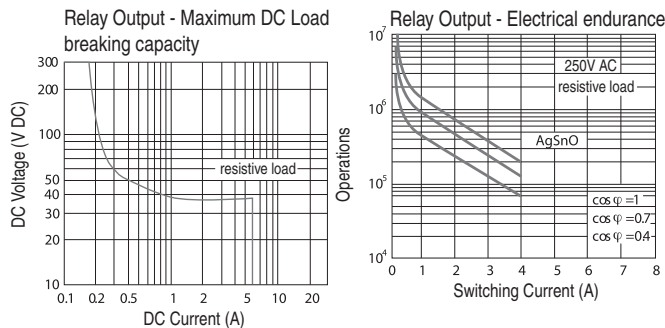
The contour of Bulletin 800Z touch buttons serves two purposes; it easily conforms to the shape of the hand while helping prevent defeatability when two-hand control is needed.

Two bi-colored diagnostic LEDs provide guidance during operation. The power/fault LED blinks at different rates to provide diagnostic information to the user. The Bulletin 800Z line detects the presence of a hand during power-up, noise, and conductive film build-up over time.

**Features**

- Internationally rated ergonomic touch buttons
- Zero force to operate
- EMC protection
- Diagnostic LEDs
- Replaceable relays (heavy industrial design)

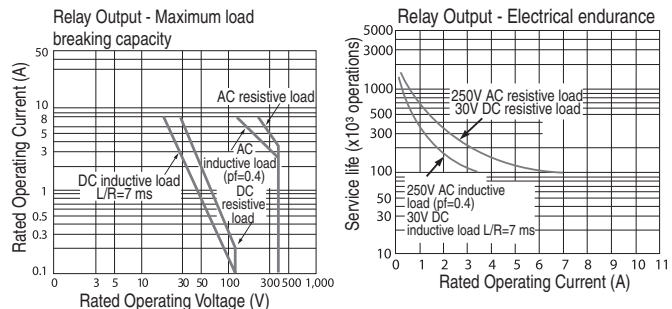
**Load Life Curves for General Purpose Product Line**



**Specifications**

Description	General Purpose Line (Cat. No. 800Z-G)	Heavy Industrial Line (Cat. No. 800Z-H)
<b>Mechanical Ratings</b>		
Vibration Endurance	Tested @ 10 G, 1.52 mm displacement	
Mechanical Shock	Tested @ 100 G (mechanical durability)	
Degree of Protection	Type 4/4X/13 IP66 1200 psi Washdown	Type 4/13 IP66
Operating Force	Zero	
<b>Electrical Ratings</b>		
Input Voltage (Relay type)	Low Voltage: 10...40V DC, 20...30V AC Full Voltage (800Z-GF): 85...264V AC	
Input Voltage (Solid-State type)	Low Voltage (800Z-GN/GP): 10...30V DC	
Electrical Design Life (Relay type)	Relay Output 200,000 Operations @ 2A inductive 4A resistive	Relay Output 150,000 Operations @ 5A inductive 2.5 A resistive
On-delay/Off-delay	Off 60 ms max. On 76 ms max.	
Current Draw (Solid-State type)	100 mA at 24V DC = 2.23 W (no external load)	
<b>Terminal Block Ratings</b>		
Degree of Protection	IP2X	
Wire Range	#22...12 AWG (0.5...4 mm <sup>2</sup> )	
Tightening Torque	9 lb-in. (1N•m)	
<b>Environmental</b>		
Temperature Range (Operating)	-25...+55°C	
Temperature Range (Storage)	-40...+85°C	
Humidity	95% RH from 25...50°C (full operation)	
<b>Materials</b>		
Housing/Guard	Valox 357	
Gasket	BUNA-N	1/16 in. Cork-BUNA-N
Connector	Insulator material (micro connector) = nylon Insulator material (mini connector) = PVC	
<b>Standards and Certifications</b>		
Certifications	cUL-us, CE, C-TICK, CSA	
Standards Conformity	UL508, CSA 22.2 No. 14, UL50, EN/IEC 60947-5-1, EN50081-2, EN61000-6-2, EN954-1	

**Load Life Curves for Heavy Industrial Line**



4-Two-Hand Control Device

**General Purpose Line — Momentary Touch Buttons**

Mounting Hole Size	Input Voltage	Output Type	Electrical Connection	No Guard	Black Guard
				Cat. No.	Cat. No.
30.5 mm	85...264V AC	Relay Output	5-Pin QD	<b>800Z-GF3Q5</b>	<b>800Z-GF3Q5B</b>
			6 ft Cabled — 5-Wire	<b>800Z-GF3065</b>	<b>800Z-GF3065B</b>
	10...40V DC and 20...30V AC	Relay Output	5-Pin QD	<b>800Z-GL3Q5</b>	<b>800Z-GL3Q5B</b>
			6 ft Cabled — 5-Wire	<b>800Z-GL3065</b>	800Z-GL3065B
22.5 mm	85...264V AC	Relay Output	5-Pin QD	<b>800Z-GF2Q5</b>	<b>800Z-GF2Q5B</b>
			6 ft Cabled — 5-Wire	<b>800Z-GF2065</b>	<b>800Z-GF2065B</b>
	10...40V DC and 20...30V AC	Relay Output	5-Pin QD	<b>800Z-GL2Q5</b>	<b>800Z-GL2Q5B</b>
			6 ft Cabled — 5-Wire	<b>800Z-GL2065</b>	<b>800Z-GL2065B</b>
Recommended standard cordset, 2 m (6.5 ft). See <i>Safety Catalog</i> for additional lengths.			Mini-Plus Style QD Cordset, 5-Pin	889N-F5AE-6F	889D-F5AC-2

Use the configurator below to build a Bulletin 800Z touch button to suit your application.

**800Z - G L 3 065 B -**

a                      b                      c                      d                      e

**a**

Input Voltage and Output Type ‡	
Code	Description
<b>Relay Output</b>	
L	Input: 10...40V DC and 20...30V AC Output: Relay
F	Input: 85...264V AC Output: Relay
<b>Transistor Output</b>	
P	10...30V DC PNP (Sourcing) Output

**c**

Electrical Connection	
Code	Description
<b>Sinking/Sourcing Output *</b>	
Q4	4-Pin QD
064	6 ft (1.8 m) Cabled
244	24 ft (7.2 m) Cabled
<b>Relay Output *</b>	
Q5	5-Pin QD
065	6 ft (1.8 m) Cabled
245	24 ft (7.2 m) Cabled

**d**

Guard Option	
Code	Description
Blank	No Guard
B	Black Guard
Y	Yellow Guard

**b**

Mounting Hole Size §	
Code	Description
2	22.5 mm
3	30.5 mm

- \* These devices are transistor outputs.
- ‡ These devices have separate N.O. and N.C. output relays with a shared common.
- ‡ Safety relays should be used in conjunction with two relay output type Zero-Force Touch Buttons™ in 2-hand control applications. Order separately, safety relay 440R-D23171 for 24V, 440R-D23169 for 120V, 440R-D23168 for 240V.
- § 22.5 mm touch buttons use micro connector, 30.5 mm touch buttons use mini connector.

**Heavy Industrial Line — Momentary Touch Buttons**

Button Type	Input Voltage	Output Type	Electrical Connection	No Guard	Yellow Guard
				Cat. No.	Cat. No.
Flush Mount	10...40V DC and 20...30V AC	Relay Output	Terminal Block	<b>800Z-HL1</b>	<b>800Z-HL1Y</b>
	85...264V AC	Relay Output	Terminal Block	<b>800Z-HF1</b>	<b>800Z-HF1Y</b>

Use the configurator below to build a Bulletin 800Z touch button to suit your application.

**800Z - H L 1 Y -**

a                      b                      c                      d

**a**

Voltage *	
Code	Description
L	Input: 10...40V DC and 20...30V AC Output: Relay
F	Input: 85...264V AC Output: Relay

**b**

Mounting Type *	
Code	Description
1	Flush Mounting

**c**

Guard Option	
Code	Description
Blank	No Guard
Y	Yellow Guard

- \* Heavy industrial devices have an 8-position terminal block connection. See wiring diagrams on page 4-53 for details.
- \* Safety relays should be used in conjunction with two relay output type Zero-Force Touch Buttons in 2-hand control applications. Order separately, safety relay 440R-D23171 for 24V, 440R-D23169 for 120V, 440R-D23168 for 240V.

**4- Two-Hand Control Device**







Operator Interface  
**Touch Buttons**  
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Accessories — General Purpose

Heavy Industrial with Guard

		Description	Cat. No.	
 Cat. No. 800Z-G3AG1	 Cat. No. 800Z-G3AG2	<b>Guards</b> These guards help protect against accidental activation of the touch button surface and protect it from damage. Can be used for both the 22.5 mm and 30.5 mm mounted products.	Yellow Plastic	800Z-G3AG1
			Black Plastic	800Z-G3AG2
 Plastic Mounting Kit Cat. No. 800Z-G2AH1		<b>Mounting Ring Nut for 22.5 mm Holes</b> Used on 22.5 mm devices.		800Z-G2AH1
 Plastic Mounting Kit Cat. No. 800Z-G3AH1		<b>Mounting Ring Nut for 30.5 mm Hole</b> Used on 30.5 mm devices.		800Z-G3AH1
 Swivel Assembly Cat. No. 60-2439		<b>30.5 mm Swivel/Tilt Mounting Assembly</b> This bracket allows you to orient the touch button in any position. It can be mounted on any vertical or horizontal surface. Compatible with 30.5 mm mounting only.	2.25 in. (57 mm)	60-2681
			1.15 in. (29 mm)	60-2439
 Cat. No. 800E-AHA1		<b>30.5 mm to 22.5 mm Hole Size Adapter</b> This adapter allows a 22.5 mm push button operator to be installed in a panel with existing 30.5 mm mounting holes.	Metal	800F-AHA1
			Black Metal	800E-AHA2

Accessories — Heavy Industrial

	Description		Cat. No.
 <p><b>Cat. No. 800Z-HAG1</b></p>	<p><b>Guard</b>                      This guard helps protects against accidental activation of the touch surface and protects it from damage. Mounting screws are included.</p>	<p>Yellow Plastic</p>	<p><b>800Z-HAG1</b></p>
 <p><i>Single Hub Base</i>  <b>Cat. No. 800P-B1</b></p>  <p><i>Double Hub Base</i>  <b>Cat. No. 800P-B2</b></p>	<p><b>Mounting Bases</b>                      The heavy industrial line products mount directly on these bases. The conduit hub(s) come with a 3/4 inch opening.</p>	<p>1</p>	<p><b>800P-B1</b></p>
 <p><b>Cat. No. 800P-N150</b></p>	<p><b>Adapter</b>                      This adapter is used if mounting touch button onto a 4-1/2 in. x 2-3/8 in. (114.3 x 60.3 mm) enclosure pattern.</p>		<p><b>800P-N150</b></p>
 <p><b>Cat. No. 800Z-N12</b></p>	<p><b>Replacement Relay</b>  <b>Note:</b> Package quantity of 2.</p>	<p>10...264V</p>	<p>800Z-N12</p>
 <p><b>Cat. No. 800Z-HAH1</b></p>	<p><b>Replacement Screws</b></p>	<p>Guard-to-Base Mounting  <b>Note:</b> package quantity of 4</p>	<p>800Z-HAH1</p>
		<p>Base Mounting  <b>Note:</b> package quantity of 4</p>	<p>800Z-HAH2</p>

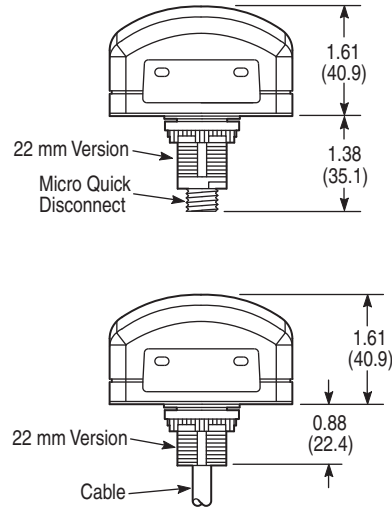
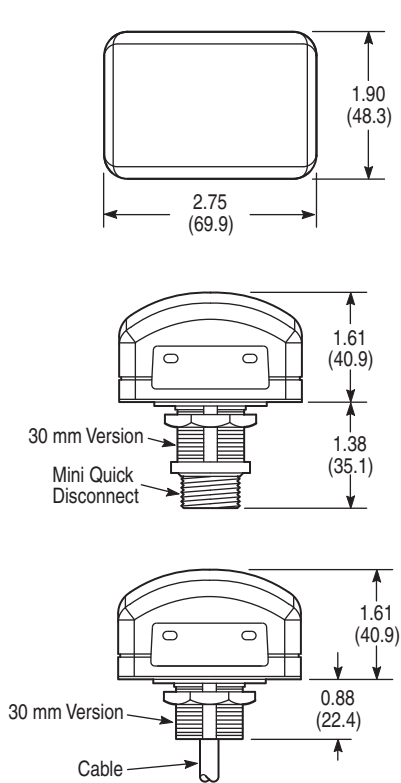
4-Two-Hand  
 Control Device

Operator Interface  
**Touch Buttons**  
 Bul. 800Z

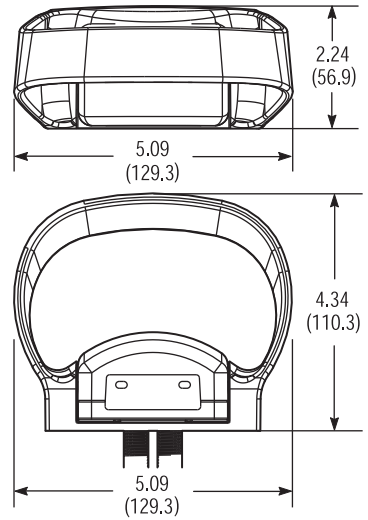
**Approximate Dimensions**

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

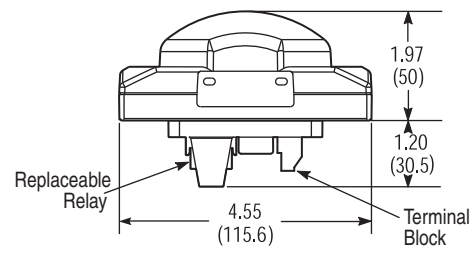
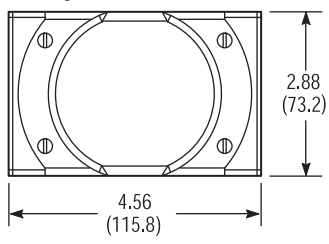
**General Purpose**



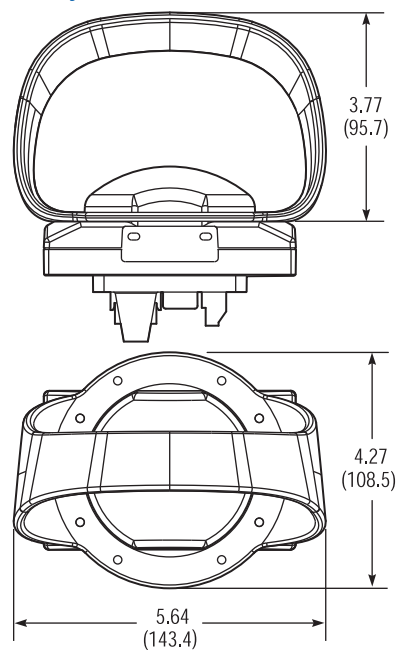
**General Purpose With Guard**



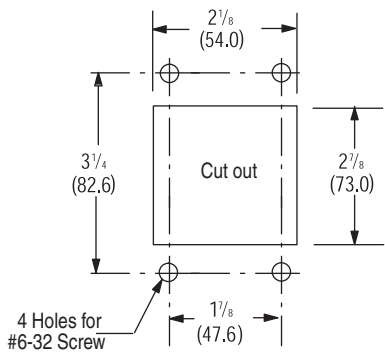
**Heavy Industrial**



**Heavy Industrial With Guard**



**Cutout and Mounting Screw Locations for a Flush Mounted Cover**



4-Two-Hand Control Device

**Wiring Diagrams — Touch Button Terminations**

**General Purpose Line**

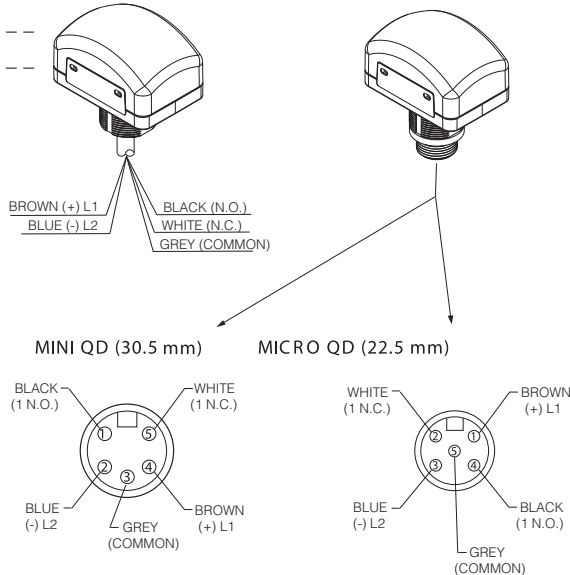
Electrical Connections: 10...40V DC and 20...30V AC Input Voltage (Relay Output); 85...264V AC Input Voltage (Relay Output)

Note: Separate N.O. and N.C. output relays with shared common.

**5-Conductor Cabled (Relay Output)**

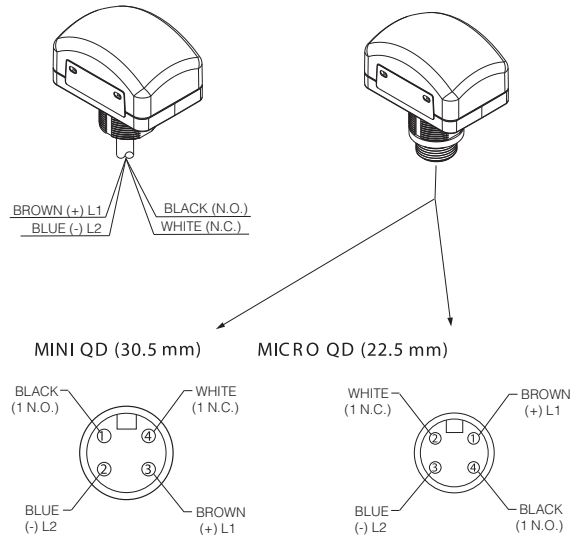
For 800Z-GL

For 800Z-GF

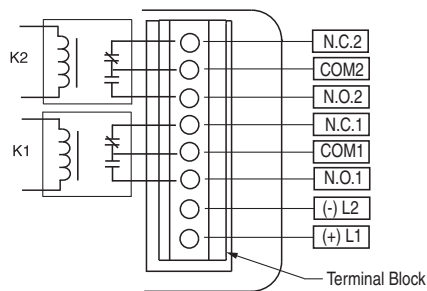


Electrical Connections: 10...30V DC Input Voltage (Transistor Output); 150 mA Max. per Circuit Output

**4-Conductor Cabled**



**Heavy Industrial Line**



**Applications Detail**

LED Blink Rate	Diagnostic	Description
** ** *	Power Up	Device touched during power up. Device will resume 10 seconds after removal of hand.
*** ** *	Noise Detection	Device detected an unacceptable level of noise (>20 V/m). Device will resume once noise subsides.
**** ** *	Margin Detection	A conductive film is building up on the sensing surface. Device will resume once cleared.

4-Two-Hand Control Device