



Bulletin 800T/800H 30.5 mm Push Buttons

- 30.5 mm mounting hole
- Type 4/13 watertight/oiltight (Bul. 800T)
- Type 4/4X/13 corrosion-resistant/watertight/oiltight (Bul. 800H)
- Heavy industrial stations and operators

Description

The Allen-Bradley Bulletin 800T and 800H 30.5 mm push button product lines are in a class by themselves. They are designed and constructed to perform in the most demanding industrial environments. In terms of sealing and switching performance, you will not find a more dependable push button offering. Allen-Bradley delivers more styles and options of operator types and contact blocks, offering flexibility to meet the most demanding specifications in the world's toughest industrial environments.

Design innovation is key to the performance advantage provided in the Bulletin 800T and 800H offerings. New in this catalog are the **Trigger Action E-Stop** operators, the new standard bearer in a tamper-resistant design. Also new is the **Universal LED Illumination** option that accepts a wide 12...130V AC/DC voltage input. This is compatible with all illuminated operator types, allows retrofitting in existing installations, and incorporates super bright LED technology.

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See below.

Standards Compliance

UL 508

CCC

Certifications

UL Listed
 (File No. E14840, E10314
 Guide No. NKCR, NOIV)

CSA Certified
 (File No. LR1234, LR11924)

CSA C22.2, No. 14

EN/IEC: 60947-5-1

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Specifications*

Electrical Ratings		
Contact ratings	Refer to the contact ratings tables on page 10-4.	
Dielectric strength	2200V for one minute, 1300V for one minute (Logic Reed)	
Electrical design life cycles	1 000 000 at max. rated load, 200 000 at max. rated load (Logic Reed)	
Mechanical Ratings		
Vibration	10...2000 Hz, 1.52 mm displacement (peak-to-peak) max./ 10 G max. (except Logic Reed)	
Shock	1/2 cycle sine wave for 11 ms \geq 25 G (contact fragility) and no damage at 100 G	
Degree of protection	Type 1/4/12/13 (800T); Type 1/4/4X/12/13 (800H); EN/IEC 60529 IP66/65	
Mechanical design life cycles		
Push buttons	(Momentary, non-illuminated)	10 000 000 min.
	(Momentary, illuminated)	250 000 min.
	(Push-pull/twist-to-release)	250 000 min.
Selector switches	(Non-illuminated)	1 000 000 min.
	(Illuminated, key-operated)	200 000 min.
Potentiometers	25 000 min.	
All other devices	200 000 min.	
Contact operation	Shallow, mini, and low-voltage contact blocks: Slow, double make and break Logic Reed and sealed switch contact blocks: Single break magnetic	
Wire gauge/Terminal screw torque	#18...14 AWG (#18...10 Max Duty) / 6...8 lb•in	
Typical operating forces		
Operators without contact blocks	Flush, extended button, standard mushroom, jumbo plastic mushroom: 2 lbs max. Jumbo and extended aluminum mushroom head: 3.95 lbs max. Maintained selector switch: 3.6 in•lb max.	
Spring return selector switches	3.6 in•lb to stop, 0.2 in•lb to return	
Illuminated push buttons and push-to-test pilot lights	5 lb max.	
2-position push-pull	8.0 lb max. push or pull	
3-position push-pull	8 lb max. push to in position or pull to center position (15 lb max. pull to out position)	
Twist-to-release or push-pull	9 lbs max. push or pull 30 in•oz max. twist, 6 in•oz minimum return	
Potentiometer	Rotational torque 3...12 in•oz; stopping torque 12 in•lb (minimum)	
Contact blocks	Standard	1 lb
	Logic Reed	1 lb max.
	Sealed switch	3 lb max. at 0.205 in. plunger travel
	Stackable sealed switch	1 lb max.
	MaxDuty	1.4 lb max.
	PenTUFF	1.4 lb max.
Self Monitoring	1.6 lb	
Environment		
Temperature range	Operating	-40...+131 °F (-40...+55 °C)
	Storage	-40...+185 °F (-40...+85 °C)
Note: Operating temperatures below freezing are based on the absence of moisture and liquids. Consult your local Rockwell Automation sales office or Allen-Bradley distributor for use in lower temperature applications.		
Humidity	50...95% RH from 77...140 °F (25...60 °C) per Procedure IV of MIL-STD-810C, Method 507.1 cycling test	

* Performance Data — See Important- 3.

30.5 mm Push Buttons

Specifications

Standard Contact Ratings

Minimum: 24V, 24 mA

Maximum thermal continuous current I_{th} 10 A AC/2.5 A DC. Bulletin 800T units with 800T-XA contacts have ratings as follows:

Max. Operntl. Volts U_e	Utilization Category		Rated Operational Currents		
	IEC	NEMA	Volts U_e	Make	Break
AC 600	AC-15	A600	120...600	7200VA	720VA
			72...120	60 A	720VA
			24...72	60 A	10 A
DC 600	DC-13	Q600	28...600	69VA	
			24...28*	2.5 A	

* For applications below 24V/24 mA, PenTUFF or Logic Reed contacts are recommended.

Sealed Switch Contact Ratings

Minimum: 5V, 1 mA

Maximum continuous current I_{th} 5 A. Bulletin 800T units have control circuit ratings with sealed switch contact blocks as follows:

Max. Operntl. Volts U_e	Utilization Category		Rated Operational Currents		
	IEC	NEMA	Volts U_e	Make	Break
AC 600	AC-15	B600	120...600	3600VA	360VA
			0...120	30 A	3 A
DC 300	DC-13	P300	24...300	138VA	
			0...24	5.0 A	

Stackable Sealed Switch Contact Ratings

Minimum: 5V, 10 mA (digital); 24V, 1 mA (analog)

Maximum continuous current I_{th} 2.5 A. Bulletin 800T units have control circuit ratings with sealed switch contact blocks as follows:

Max. Operntl. Volts U_e	Utilization Category		Rated Operational Currents		
	IEC	NEMA	Volts U_e	Make	Break
AC 300	AC-15	C300	120...300	1800VA	180VA
			0...120	15 A	1.5 A
DC 150	DC-13	Q150	24...150	69VA	
			0...24	2.5 A	

Logic Reed Contact Ratings

Minimum — DC: 5V, 1 mA

Maximum — DC: 30V, 0.06 A, AC: 150V, 0.15 A

Should only be used with resistive loads.

Materials Used in 800H Type 4X Operators Thermoplastic Polyester (Fiberglass Reinforced)

- Bushings
- Mounting Rings
- Sockets

Thermoplastic Polyester

- Non-illuminated button caps

Transparent Amorphous Nylon

- Pilot light lens cap
- Illuminated button caps

Glass Filled Crystalline Nylon

- Thrust washer

Mineral Filled Nylon

- Trim washer

Nitrile (Synthetic Rubber)

- Gaskets and internal seals

PenTUFF™ (Low Voltage) Contact Ratings

Minimum DC: 5V, 1 mA

Maximum thermal continuous current I_{th} 2.5 A AC/1.0 A DC. Bulletin 800T units with 800T-XAV contacts have ratings as follows:

Max. Operntl. Volts U_e	Utilization Category		Rated Operational Currents		
	IEC	NEMA	Volts U_e	Make	Break
AC 300	AC-15	C300	120...300	1800VA	180VA
			0...120	15 A	1.5 A
DC 150	DC-13	R150	24...150	28VA	
			0...24	1.0 A	

Snap Action Contact Ratings

Max. Operntl. Volts U_e	Contact Rating Designation	Rated Operational Currents		
		Volts U_e	Make	Break
AC 300	A300	120...300	7200VA	720VA
		24...72	60 A	10 A
DC 250	—	230...250	0.2 A	
		115...125	0.4 A	

MaxDuty Contact Rating

Maximum thermal continuous current I_{th} 24 A.

Pilot Duty — 120V AC, 12 A; 24V DC, 10 A

Motor Ratings — 120V AC, 1.5 Hp; 240V AC, 3 Hp; 24V DC, 10 A FLA/60 A LRA

Time Delay Contacts

Max. Operntl. Volts U_e	Contact Rating Designation	Rated Operational Currents		
		Volts U_e	Make	Break
AC 120	B150	120	3600VA	360VA

Note: This device is not rated for DC applications.

Adjustment range: 0.5...15 s \pm 25% I_{th} = 5 A

Bulletin 800T/H
30.5 mm Push Buttons
 Selector Switches

2-Position Knob/Lever Type Selector Switch Devices, Illuminated



Standard Knob Operator
 Cat. No. 800T-16HR2KB6AX



Knob Lever Operator
 Cat. No. 800H-16HRR17KB6AX

Type	Lamp Type	Volts	Knob Color	Operator Position		M = Maintained S = Spring Return	Type 4/13	Type 4/4X/13
							Standard Knob	Standard Knob
Operator Only*				No Contacts			Cat. No.	Cat. No.
Full Voltage	Incandescent	24V AC/DC	Red	X	O	M M	800T-00HX2KB6	800H-00HRX2KB6
						M M	800T-24HR2KB6AX	800H-24HRR2KB6AX
	S→M*	800T-24HR4KL8AX	800H-24HRR4KL8AX					
	M←S	800T-24HR5KL8AX	800H-24HRR5KL8AX					
	No Lamp	0...250V AC/DC	No Knob			M M	800T-25HXN2KB6AX	800H-25HRXN2KB6AX
Universal	LED	12...130V AC/DC	Red			M M	800T-2HRH2KB6AX	800H-2HRRH2KB6AX
						S→M*	800T-2HRH4KL8AX	800H-2HRRH4KL8AX
						M←S	800T-2HRH5KL8AX	800H-2HRRH5KL8AX
						M M	800T-16HR2KB6AX	800H-16HRR2KB6AX
Transformer	Incandescent	120V AC 50/60 Hz	Red			M M	800T-16HRH2KB6AX	800H-16HRRH2KB6AX
						S→M*	800T-16HR4KL8AX	800H-16HRR4KL8AX
						M←S	800T-16HR5KL8AX	800H-16HRR5KL8AX
						M M	800T-16HRH2KB6AX	800H-16HRRH2KB6AX
	LED	120V AC 50/60 Hz	No Knob			S→M*	800T-16HRH4KL8AX	800H-16HRRH4KL8AX
						M←S	800T-16HRH5KL8AX	800H-16HRRH5KL8AX
						M M	800T-16HXN2KB6AX	800H-16HRXN2KB6AX
						M M	800T-16HXN2KB6AX	800H-16HRXN2KB6AX

Note: X = Closed/O = Open

* Operator only supplied without power module, lamp, lens cap, or contact blocks.

* Target tables are reversed from those shown.

800 T - 16 H R 2 KB6 A X

a b c d e f g h i j

1st Level 2nd Level

Protection Rating	
Code	Description
T	Metal, Type 4/13
H	Plastic, Type 4/4X/13

Finger-Safe Guards	
Code	Description
Blank	No guards
C	Guards on terminals

Power Module Type and Voltage	
Full Voltage — Incandescent	
Code	Description
12	12V AC/DC
24	24V AC/DC
48	48V AC/DC
Universal — LED	
2	12...130V AC/DC
Transformer	
16	120V AC 50/60 Hz
26	240V AC 50/60 Hz

For other voltages, please contact your local Rockwell Automation sales office or Allen-Bradley distributor.

No. of Positions		
Bul. 800T Type 4/13	Description	Bul. 800H Type 4/4X/13
Code		Code
H	2-position	HR

Knob Color	
Code	Color
A	Amber
B	Blue
C	Clear
G	Green
R	Red
W	White
X	No knob

Illumination Options	
Code	Description
Blank	Incandescent
H	LED

Table 1. Selector Switch Cam Targets

Cam Description (2-Position)		
Target		Contact Block Code*
		D, H, V, R, 5
		E, U, W, S, 6

X = Closed/O = Open

Operator Function and Knob Type	
Standard Knob or No Knob	
Code	Operator Function
2	Maintained
4	Spring return from left
5	Spring return from right
Knob Lever	
17	Maintained
18	Spring return from left
19	Spring return from right

Cam Options	
2-Position	
Code	Operator Function
KB6	Maintained Cam
KL8	Spring Return Cam

Table 2. Contact Block Code Reduction Rules

Contact Block Substitution	
Combination	Code
Standard	
D + E	A
D + D	M
E + E	N

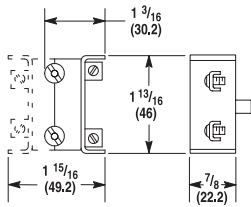
Contact Blocks*	
Code	Description
Blank (both pos.)	No contacts
Standard	
D	1 N.O.
E	1 N.C.
A	1 N.O. - 1 N.C.
X	No contacts in this position
PenTUFF (Low Voltage)	
H	1 N.O.
U	1 N.C.
F	1 N.O. - 1 N.C.
Class 1, Div. 2/Zone 2	
Logic Reed	
V	1 N.O.
W	1 N.C.
T	1 N.O. - 1 N.C.
Sealed Switch	
R	1 N.O.
S	1 N.C.
P	1 N.O. - 1 N.C.
Stackable Sealed Switch	
5	1 N.O.
6	1 N.C.
7	1 N.O. - 1 N.C.

* Contact blocks used on white side only.

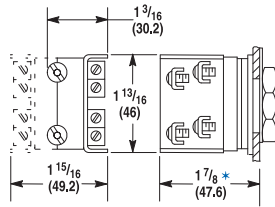
* Target tables are reversed for spring return from left operators.

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

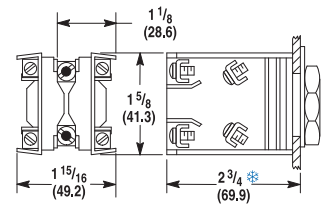
Blocks (Bul. 800T Only)



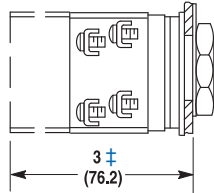
Mini Contact Block
 7/8 (22.2) Deep



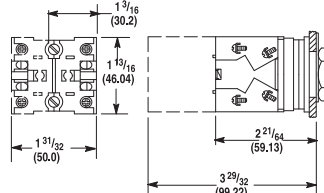
**Shallow, PenTUFF,
 and Logic Reed Contact Blocks**
 1-1/8 (28.6) Deep



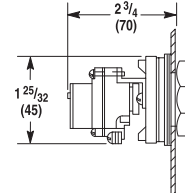
Sealed Switch Block
 2 (50.8) Deep



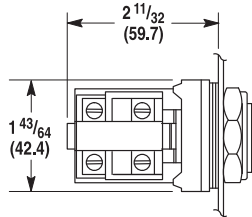
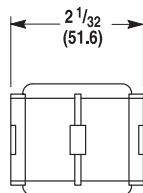
Tandem Mounting
 (2 shallow contact blocks stacked)



Stackable Sealed Switch Block
 1.58 (40.1) Deep



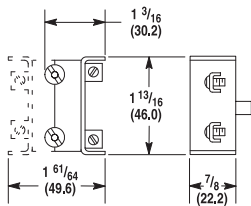
Time Delay Contact Block
 (For Push Buttons Only)



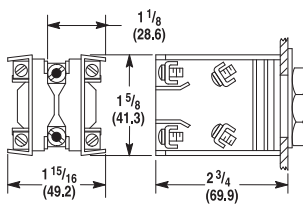
Snap Action Contact Block (For Push Button Only)

- * Dimension shown is for push buttons. Selector switch dimension is 2-1/32 in. (51.6 mm).
- ⊛ Dimension shown is for push buttons. Selector switch dimension is 2-27/32 in. (72.2 mm).
- ‡ Dimension shown is for push buttons. Selector switch dimension is 3-5/32 in. (80.2 mm).

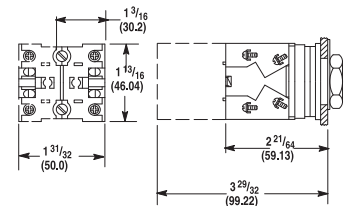
Blocks (Bul. 800H Only)



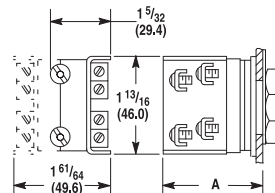
Mini Contact Block



Sealed Switch Block
 2 (50.8) Deep



Stackable Sealed Switch Block
 1.58 (40.1) Deep



**Shallow, PenTUFF and Logic
 Reed Contact Blocks**

Dim.	Momentary Push Button	Maintained Push Button	Selector Switch
A	2 (50.8)	2 (50.8)	1-29/32 (48.4)

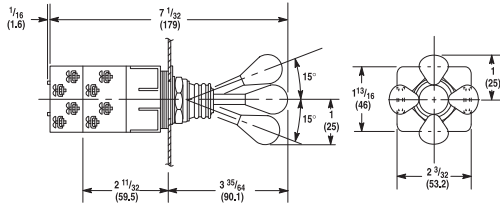
Operator Extension Behind Panel — When mounted with thrust washer, trim washer, or notched legend plate and correct number of rubber washers.

30.5 mm Push Buttons

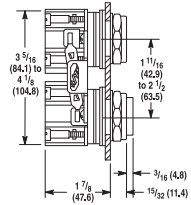
Approximate Dimensions

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

Push Buttons and Switches (Bul. 800T Only)

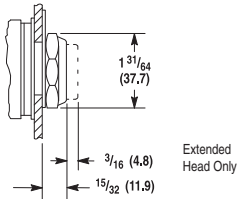


2-3-4 Way Switch
Shipping Wt. with 2 Contact Blocks 6 oz (0.17 kg)
Shipping Wt. with 4 Contact Blocks 8-1/2 oz (0.24 kg)

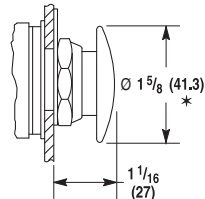


Mechanically Interlocked Maintained Contact Push Button
Shipping Wt. 1 lb (0.45 kg)

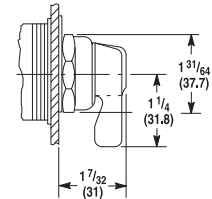
Push Buttons and Pilot Lights



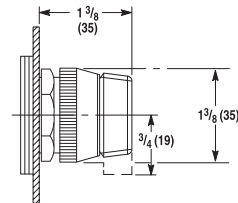
Flush and Extended Head Push Button
Shipping Wt. 5-1/2 oz (0.15 kg)



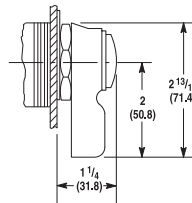
Mushroom Head Push Button
Shipping Wt. 7-1/2 oz (0.21 kg)



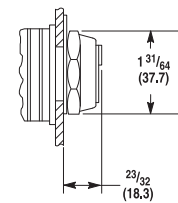
Non-Illuminated Knob Lever and Standard Knob Selector Switch
Shipping Wt. 6 oz (0.17 kg)



Illuminated Knob Lever and Standard Knob Selector Switch
Shipping Wt. 6 oz (0.17 kg)



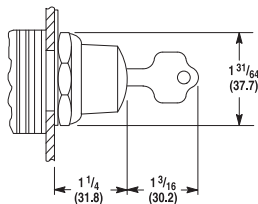
Wing Lever Selector Switch
Shipping Wt. 8 oz (0.22 kg)



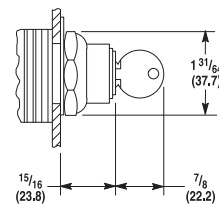
Coin Slot Selector Switch
Shipping Wt. 6 oz (0.17 kg)

* Except jumbo which is 2-1/4 (57.2).

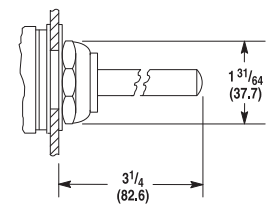
Operator Extension in Front of Panel (Bul. 800T Only)



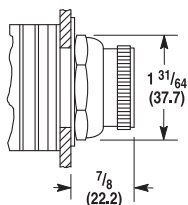
Key Operated Selector Switch
Shipping Wt. 12 oz (0.34 kg)



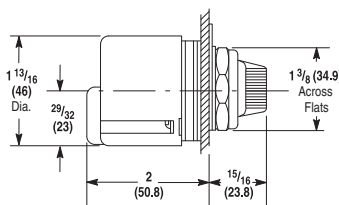
Push Button with Cylinder Lock
Shipping Wt. 12 oz (0.34 kg)



Wobble Stick
Shipping Wt. 9 oz (0.25 kg)



Selector Push Button
Shipping Wt. 6 oz (0.17 kg)



Type J Potentiometer Unit
Shipping Wt. 4 oz (0.11 kg)

