

2-Position Push-Pull and Push-Pull/Twist Release Devices, Illuminated

Note: A jumbo or large legend plate is recommended, if space allows.



Illuminated 2-Position Push-Pull
Cat. No. 800T-FXP16RA1



2-Position Push-Pull
Cat. No. 800T-FXJEP16RA1

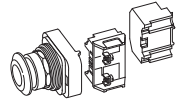


Illuminated 2-Position Push-Pull/Twist
Cat. No. 800T-FXTP16RA1



Illuminated 2-Position Push-Pull/Twist
Cat. No. 800H-FRXT16RA1

800 T - FX T PH 16 R A1
a b c d e f g h

**a**

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

b

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

c

Head Type *		
800T Type 4/13	Description	800H Type 4/4X/13
Code		Code
FX	Mushroom head	FRX
FXJ	Jumbo mushroom	FRXJ
FXJE	Jumbo mushroom (push-pull) with "E-Stop"	—

d

Operator Function	
Code	Description
Blank	Push-pull #
T	Push-pull/twist

e

Illumination Options	
Transformer	
Code	Description
P	Incandescent
PH	LED
Full Voltage	
Q	Incandescent
QH	Universal LED
Dual Input	
D	Diode type ▲
DT	Transformer — relay type
DTH	Transformer — relay type LED

f

Voltage §	
Transformer	
Code	Description
16	120V AC 50/60 Hz
26	240V AC 50/60 Hz
Full Voltage	
24	24V AC/DC
10	120V AC/DC
20	240V AC/DC
Universal LED	
2	12...130V AC/DC
Dual Input	
16	120V AC
24	24V AC/DC (dual input diode only)

g

Color Cap	
Code	Color
X	No cap (not valid with head Type J)
A	Amber
B	Blue
C	Clear
G	Green
R	Red
W	White

h

Target		
Contact		
N.O.	O	X
N.C./N.C.L.B.	X	O
Contact Blocks		
Code	Description	
Blank	No contacts	
Standard		
D1	1 N.O.	
D2	1 N.C.	
D4	1 N.C.L.B.	
A	1 N.O. - 1 N.C.	
A1	1 N.O. - 1 N.C.L.B.	
A5	2 N.C.L.B. ▽	
PenTUFF (Low Voltage)		
D1V	1 N.O.	
D2V	1 N.C.	
D4V	1 N.C.L.B.	
AV	1 N.O. - 1 N.C.	

h (cont'd)

Contact Blocks	
Code	Description
Class 1, Div. 2	
Logic Reed	
D1R	1 N.O.
D2R	1 N.C.
AR	1 N.O. - 1 N.C.
Sealed Switch	
D1P	1 N.O.
D2P	1 N.C.
AP	1 N.O. - 1 N.C.
Stackable Sealed Switch	
D1Y	1 N.O.
D2Y	1 N.C.
AY	1 N.O. - 1 N.C.

§ See page 18 for additional voltage code options.

▲ Devices with N.C.L.B. contacts meet EN ISO 13850 and IEC 60947-5-5 standards for emergency stop applications.

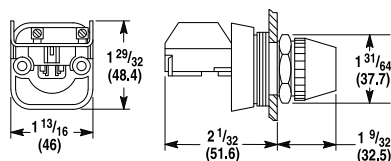
Push-Pull is available only with Bul. 800T.

▲ Diode type dual input provides circuit isolation via opposing diodes. Not recommended for use with solid-state outputs.

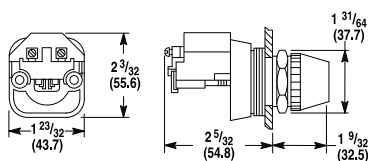
▽ Two stacked 800T-XD4 contact blocks supplied.

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

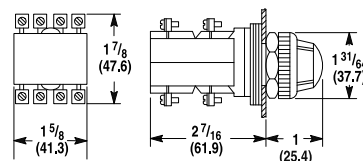
Pilot Light and Illuminated Devices (Bul. 800T Only)



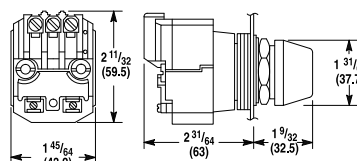
Full Voltage, Neon and
Dual Input Pilot Light
Shipping Wt. 5 oz (0.14 kg)



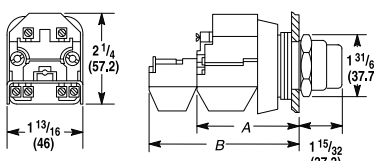
Transformer Type Pilot Light
Shipping Wt. 8 oz (0.22 kg)



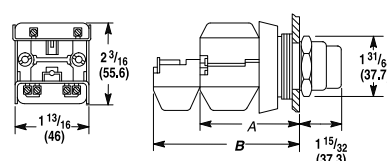
Cluster Pilot Light
Shipping Wt. 12 oz (0.34 kg)



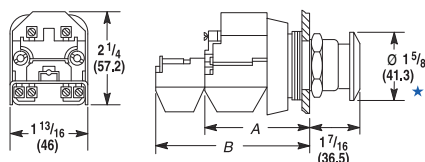
Dual Input Transformer
Type Pilot Light



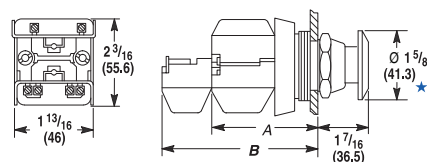
Transformer Type
(Push-to-Test Pilot Light and
Illuminated Push Button)



Full Voltage, Neon and Dual Input Type
(Push-to-Test Pilot Light and
Illuminated Push Button)



Push-Pull and Twist or Pull Release Units
(Transformer Type Illuminated)



Push-Pull and Twist or Pull Release Units
(Full Voltage, Neon and Dual Input
Illuminated and All Non-Illuminated)

★ Jumbo mushroom versions are 2-1/4 in. (57.2 mm) diameter.

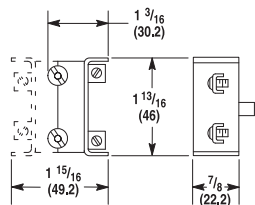
Push-to-Test Pilot Lights Illuminated Push Buttons and Illuminated Push-Pull Buttons								Non-Illuminated Push-Pull Buttons				
Cat. No. Suffix†	Description	Transformer Type		Full Voltage or Neon Type		Cat. No. Suffix	Description	Transformer Type				
		Dim.	Ship. Wt.	Dim.	Ship. Wt.			Dim.	Ship. Wt.			
D4	Transformer or Terminal Module and One Shallow Contact Block	A	2-5/32 (54.8)§	9 oz. (0.25 kg)	A	2-1/32 (51.6)	7 oz. (0.25 kg)	D4	One Shallow Contact Block	A	2-1/32 (51.6)	5 oz. (0.14 kg)
A1 and A7	Transformer or Terminal Module and One Shallow Block and One Mini Contact Block	B	2-7/8 (73)	10 oz. (0.28 kg)	B	2-7/8 (73)	8 oz. (0.22 kg)	A4 A5 A7	Two Shallow Contact Blocks	A	2-1/32 (51.6)	6 oz. (0.17 kg)
AP D1P D2P	Transformer or Terminal Module and One Sealed Switch Contact Block	A	3-1/32 (77)	10 oz. (0.28 kg)	A	2-29/32 (73.8)	8 oz. (0.22 kg)	B6	Two Shallow Blocks and Two Mini Contact Blocks	B	2-7/8 (73)	8 oz. (0.22 kg)

† Applies to illuminated push-pull push buttons only.

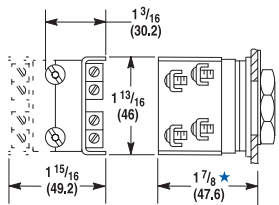
§ Dual input type pilot light dimension is 2-13/32 in. (61.1 mm).

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

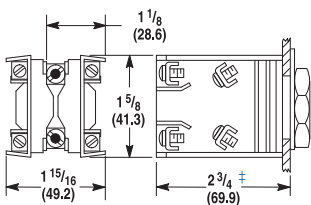
Blocks (Bul. 800T Only)



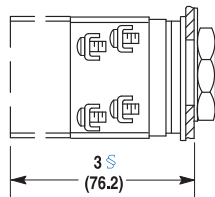
Mini Contact Block
 7/8 (22.2) Deep



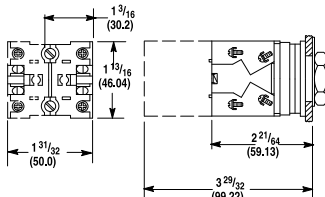
Shallow, PenTUFF,
 and Logic Reed Contact Blocks
 1-1/8 (28.6) Deep



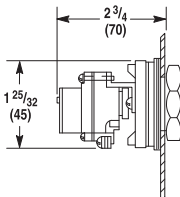
Sealed Switch Block
 2 (50.8) Deep



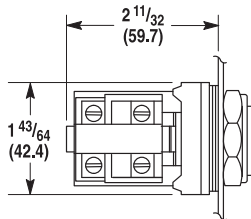
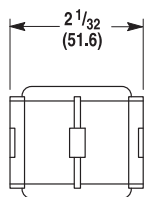
Tandem Mounting
 (2 shallow contact
 blocks stacked)



Stackable Sealed Switch Block
 1.58 (40.1) Deep



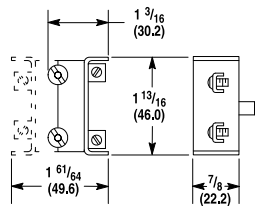
Time Delay Contact Block
 (For Push Buttons Only)



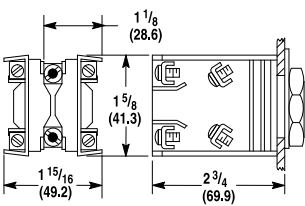
Snap Action Contact Block (For Push Button Only)

★ 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).

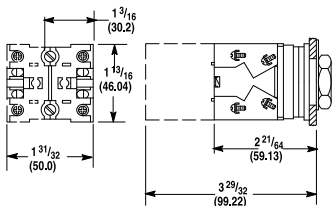
Blocks (Bul. 800H Only)



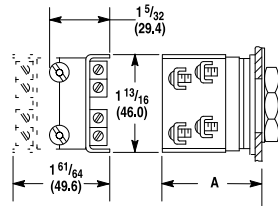
Mini Contact Block



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.

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 ≥ 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, flush and extended head)	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** — Performance data given in this publication is provided only as a guide for the user in determining suitability and do not constitute a performance warranty of any kind. Such data may represent the results of accelerated testing at elevated stress levels, and the user is responsible for correlating the data to actual application requirements. ALL WARRANTIES AS TO ACTUAL PERFORMANCE, WHETHER EXPRESS OR IMPLIED, ARE EXPRESSLY DISCLAIMED.

‡ Illuminated Trigger Action E-stops are rated for 150,000 min. mechanical operations when using Cat. No. 800TC-XD4S Self-Monitoring Contact Blocks (SMCBs).

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 72...120 24...72	7200VA 60 A 60 A	720VA 720VA 10 A
DC 600	DC-13	Q600	28...600 24...28★	69VA 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 0...120	3600VA 30 A	360VA 3 A
DC 300	DC-13	P300	24...300 0...24	138VA 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 0...120	1800VA 15 A	180VA 1.5 A
DC 150	DC-13	Q150	24...150 0...24	69VA 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 0...120	1800VA 15 A	180VA 1.5 A
DC 150	DC-13	R150	24...150 0...24	28VA 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 24...72	7200VA 60 A	720VA 10 A
DC 250	—	230...250 115...125	0.2 A 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

Standards Compliance

UL 508

CCC

Certifications

UL Listed

(File No. E14840, E10314)

Guide No. NKCR, NOIV, NISD)

CSA Certified

(File No. LR1234, LR11924)

CSA C22.2, No. 14

CE Marked (EN/IEC 60947-5-1,

EN/IEC 60947-5-5,

EN ISO 13850)