Technical Data

Allen-Bradley

30 mm Push Button Specifications

Bulletin Numbers 800T and 800H

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Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

Resource	Description
Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1	Provides general guidelines for installing a Rockwell Automation industrial system.
Product Certifications website, http://www.ab.com	Provides declarations of conformity, certificates, and other certification details.

You can view or download publications at http://www.rockwellautomation.com/literature/. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

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)
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. Opertnl. 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 17V/5 mA, Pen*TUFF* or Logic Reed contacts are recommended.

Electrical design life cycles: 1,000,000 (at max. rated load)

Explosion-Protected Contact Ratings

Max. Opertnl. 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	

Maximum thermal continuous current Ith = 10 A
Minimum low energy switching load: 17V DC, 5 mA
Electrical design life cycles: 1,000,000 (24V DC, 25 mA)
Vibration: 5 g, 0.7 mm peak-to-peak displacement, sine sweep 10…2000 Hz / IEC 60068-2-6
Shock: 15 g (800H-TFRX_ trigger action E-stops), 50 g (all other devices) / IEC 60068-2-27

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. Opertnl. 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. Opertnl. 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.
Electrical design life cycles: 200,000 (at max. rated load)

Pen*TUFF*™ (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. Opertnl. 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. Opertnl. 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. Opertnl. 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 ± 25% I_{th} = 5 A

Materials Used in 800H Type 4X Operators

Thermoplastic Polyester (Fiberglass Reinforced)

- Bushings
- Mounting Rings
- Sockets

Transparent Amorphous Nylon

- Pilot light lens cap
- Illuminated button caps

Mineral Filled Nylon

- Trim washer

Thermoplastic Polyester

- Non-illuminated button caps

Glass Filled Crystalline Nylon

- Thrust washer

Nitrile (Synthetic Rubber)

- Gaskets and internal seals

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)