

30 mm Push Button Specifications

Bulletin Numbers 800T and 800H

| Topic | Page |
|--|------|
| 800T/H Specifications | 2 |
| 800T/H DeviceNet Stations | 4 |
| 800T/H Trigger Action E-stops | 5 |
| 800T/H Momentary Contact Push Buttons | 7 |
| 800T/H Selector Switch | 10 |
| 800T/H Pilot Lights | 18 |
| 800T/H Push-Pull and Twist-to-release Devices | 19 |
| 800T Cluster Pilot Lights | 23 |
| 800T Toggle Switches | 24 |
| 800T Selector Push Button | 25 |
| 800H Momentary Contact Flip Lever Devices | 26 |
| 800T/H Protective Boot Application Information | 27 |
| 800T/H Approximate Dimensions | 28 |
| 800T/H Typical Pilot Light Wiring Diagrams | 40 |
| 800H Push Button Enclosures | 41 |

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. 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 24...28★ | 69VA 2.5 A | |

★ For applications below 17V/5 mA, PenTUFF or Logic Reed contacts are recommended.

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

Explosion-Protected Contact Ratings

| 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 24...28 | 69VA 2.5 A | |

Maximum thermal continuous current I_{th} = 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. 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 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 | 1800VA | 180VA |
| | | | 0...120 | 15 A | 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)

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 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 | 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 ± 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)