

TM Series Mid Size Snap-acting Switches



Features/Benefits

- Broad range of operating forces available
- Wide variety of actuator and terminal styles
- Cost-effective solution

Typical Applications

- Pumps and motors
- White goods
- Consumer appliances



Specifications

CONTACT RATING: From low level* to 15 AMPS @ 250 V AC.

ELECTRICAL LIFE: 150,000 cycles at 15 AMPS @ 250 V AC, models with 150 grams operating force. 350,000 cycles at 10 AMPS @ 250 V AC, models with 75 grams operating force.

INSULATION RESISTANCE: 1,000 M ohms min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

OPERATING TEMPERATURE: -67°F to 302°F (-55°C to 150°C).

OPERATING FORCE: 50, 75 and 150 grams at actuator available; refer to chart for lever style forces.

MOUNTING: Torque screws 2-5 in/lbs.

* Low Level=conditions where no arcing occurs during switching, i.e., 0.4 VA max. @ 20 V AC or DC max.

Materials

SWITCH HOUSING: Thermoplastic or general purpose phenolic (UL 94V-0).

ACTUATOR BUTTON: Thermoplastic (UL 94V-0).

SPRING: Copper alloy.

PIVOT: Brass alloy.

MOVABLE CONTACTS: Gold alloy for ratings 1 AMP @ 125 V AC or less. Fine silver for ratings greater than 1 AMP @ 125 V AC.

STATIONARY CONTACTS: Gold alloy for ratings 1 AMP or less. Fine silver for ratings greater than 1 AMP.

TERMINALS: Brass alloy for ratings up to 10 AMPS @ 250 V AC. Copper alloy for 15 AMPS @ 250 V AC ratings.

NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

Build-A-Switch

To order, simply select desired option from each category and place in the appropriate box. For additional options not shown in catalog, consult Customer Service Center.

Available extended electrical life per UL 1054, rated for 100,000 operations, consult factory.

T M															
Series TM SP, Mom.															
Operating Force CG 2.65 oz./75 grams CJ 5.29 oz./150 grams CF 1.76 oz./50 grams															
Electrical Rating D6 10 A @ 125 & 250 V AC; 1/3 HP @ 125 & 250 V AC; 1/2 A @ 125 V DC; 1/4 A @ 250 V DC G6 15 A @ 125 & 250 V AC; 1/4 A @ 250 V DC; 1/2 A @ 125 V DC; 1/2 HP @ 125 & 250 V AC; 3 A @ 125 V AC "L" F5 1 A @ 125 V AC; 1 A @ 30 V DC H3 5 A @ 250 V AC; 1/6 HP @ 125 & 250 V AC															
		Mounting Style S Standard V Metric													
		Actuator P00 Pin plunger A10 .81" lever roller, high force A15 1.34" lever roller, high force A20 1.02" lever roller, low force A25 1.56" lever roller, low force T10 .84" lever, high force T13 1.34" simulated roller, high force T14 1.29" simulated roller, high force T15 1.40" lever, high force T16 2.34" lever, high force T17 2.00" lever, high force T18 2.75" lever, high force T20 1.06" lever, low force T23 1.56" simulated roller, low force T24 1.50" simulated roller, low force T25 1.62" lever, low force T26 2.56" lever, low force T27 2.22" lever, low force T28 2.97" lever, low force													
				Terminations 40 .187" quick connect 10 Solder 4A .250" quick connect 60 Screw											
						Circuitry C SPDT W SPST N.C. Y SPST N.O.									

* All models



Dimensions are shown: Inch (mm)

Specifications and dimensions subject to change

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SERIES

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Snap-acting

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TM Series

Mid Size Snap-acting Switches

ELECTRICAL RATING

AVAILABLE COMBINATIONS

ELECTRICAL RATING	MAXIMUM OPERATING FORCE (OZ./GRAMS)		
	1.76/50 CF	2.65/75 CG	5.29/150 CJ
D6	•	•	•
F5	•	•	•
G6	X	X	•
H3	•	•	•

• AVAILABLE
X NOT AVAILABLE



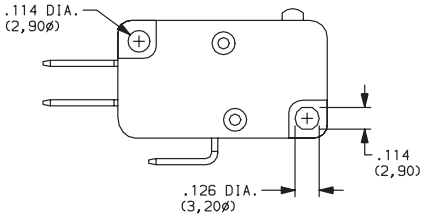
* All models  us
Contact Customer Service Center for availability and delivery of nonstandard ratings.

* Low Level=conditions where no arcing occurs during switching, i.e., 0.4 VA max. @ 20 V AC or DC max.

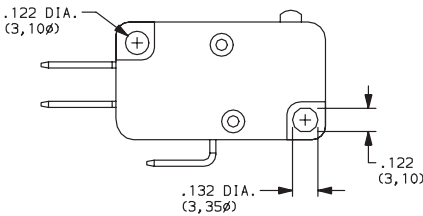
MOUNTING STYLE

S Standard

V Metric



Recommended maximum screw size: 4-40.

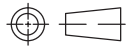


Recommended maximum screw size: 3 mm.

NOTE: Torque mounting screws 2-5 in/lbs.

Snap-acting





Third Angle Projection

Dimensions are shown: Inch (mm)
 Specifications and dimensions subject to change

TM Series Mid Size Snap-acting Switches

ACTUATOR

OPTION CODE	FIG.	DIM. A	DIM. B	DIM. C	DIM. D
P00	2	.80 (20,3)	—	.578 ± .015 (14,68 ± 0,38)	—
A10	1	.81 (20,6)	.36 (9,1)	.810 ± .020 (20,57 ± 0,51)	.19 dia. (4,80)
A15	1	1.34 (34,0)	.36 (9,1)	.810 ± .040 (20,57 ± 1,02)	.19 dia. (4,80)
A20	1	1.03 (26,2)	.58 (14,7)	.810 ± .050 (20,57 ± 1,27)	.19 dia. (4,80)
A25	1	1.56 (39,6)	.58 (14,7)	.810 ± .080 (20,57 ± 2,03)	.19 dia. (4,80)
T10	3	.84 (21,3)	.36 (9,1)	.600 ± .020 (15,24 ± 0,51)	—
T13	4	1.34 (34,0)	.36 (9,1)	.810 ± .040 (20,57 ± 1,02)	.19 dia. (4,80)
T14	4	1.28 (32,5)	.36 (9,1)	.743 ± .050 (18,9 ± 1,3)	.236 dia. (6,00)
T15	3	1.40 (35,6)	.36 (9,1)	.600 ± .040 (15,24 ± 1,02)	—
T16	3	2.34 (59,4)	.36 (9,1)	.600 ± .062 (15,24 ± 1,57)	—
T17	3	2.00 (50,8)	.36 (9,1)	.600 ± .052 (15,24 ± 1,57)	—
T18	3	2.75 (69,9)	.36 (9,1)	.600 ± .093 (15,24 ± 2,36)	—
T20	3	1.06 (26,9)	.58 (14,7)	.600 ± .045 (15,24 ± 1,14)	—
T23	4	1.56 (39,6)	.58 (14,7)	.810 ± .065 (20,57 ± 1,65)	.19 dia. (4,80)
T24	4	1.50 (38,1)	.58 (14,7)	.743 ± .090 (18,80 ± 2,29)	.236 dia. (6,00)
T25	3	1.62 (41,1)	.58 (14,7)	.600 ± .080 (15,24 ± 2,03)	—
T26	3	2.56 (65,0)	.56 (14,7)	.600±.125 (15,24±3.18)	—
T27	3	2.22 (56,4)	.58 (14,7)	.600±.125 (15,24±3.18)	—
T28	3	2.97 (75,4)	.58 (14,7)	.600±.187 (15,24±4.75)	—

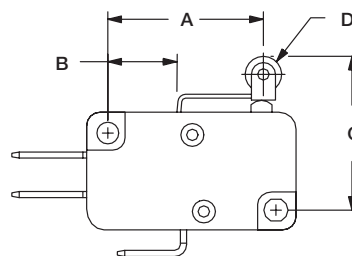


FIG. 1
Lever Roller

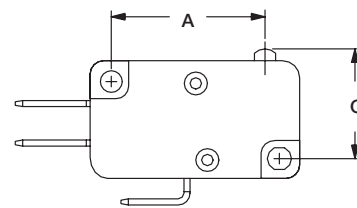


FIG. 2
Pin Roller

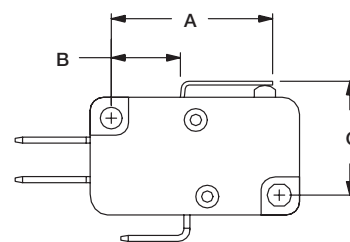


FIG. 3
Lever

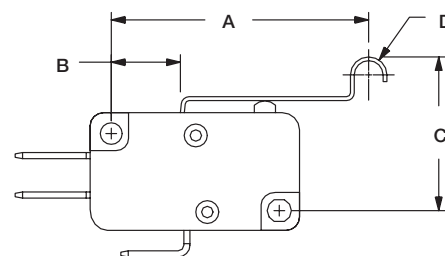
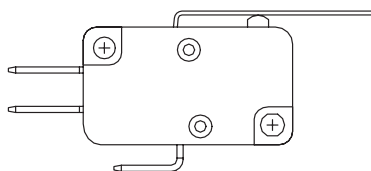


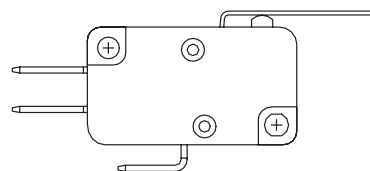
FIG. 4
Simulated Roller

HIGH FORCE, LOW MOTION PIVOT POSITION



Available with actuators A10, A15, T10, T13, T14, T15, T16, T17 and T18.

LOW FORCE, HIGH MOTION PIVOT POSITION



Available with actuators A20, A25, T20, T23, T24, T25, T26, T27 and T28.

NOTE: Lever actuator options are available in either of two pivot positions. Levers located in the forward pivot position have lower forces and higher motions. Levers located in the rear pivot position have higher forces and lower motions.

TM Series

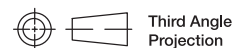
Mid Size Snap-acting Switches

ACTUATOR

SWITCH CHARACTERISTICS

OPTION CODE	MAXIMUM OPERATING FORCE (OZ./GRAMS)			MINIMUM RELEASE FORCE (OZ./GRAMS)			MINIMUM RETURN FORCE (OZ./GRAMS)			MAXIMUM DIFFERENTIAL TRAVEL	MAXIMUM PRETRAVEL	MINIMUM OVERTRAVEL
	CF (50)	CG (75)	CJ (150)	CF (50)	CG (75)	CJ (150)	CF (50)	CG (75)	CJ (150)	ALL FORCES	ALL FORCES	ALL FORCES
T10	2.12 60	3.17 90	6.35 180	.49 14	.99 28	1.69 48	.25 7	.53 15	1.06 30	.013 (0,33)	.080 (2,03)	.035 (0,89)
T13	1.06 30	1.59 45	2.82 80	.21 6	.35 10	.71 20	.11 3	.14 4	.35 10	.030 (0,76)	.160 (4,06)	.065 (1,65)
T13	1.06 30	1.76 50	3.17 90	.25 7	.35 10	.71 20	.11 3	.14 4	.35 10	.050 (1,27)	.140 (3,56)	.062 (1,57)
T15	1.06 30	1.59 45	2.28 80	.21 6	.32 9	.71 20	.11 3	.14 4	.35 10	.032 (0,81)	.160 (4,06)	.075 (1,90)
T16	.53 15	.71 20	1.41 40	.11 3	.18 5	.35 10	.05 1.5	.07 2	.18 5	.090 (2,29)	.312 (7,92)	.140 (3,56)
T17	.71 20	.88 25	1.76 50	.14 4	.21 6	.42 12	.07 2	.07 2	.21 6	.062 (1,57)	.220 (5,59)	.110 (2,79)
T18	N/A	.71 20	1.23 35	N/A	.14 4	.28 8	N/A	.04 1	.14 4	.078 (1,98)	.375 (9,52)	.160 (4,06)
T20	1.06 30	1.59 45	3.17 90	.21 6	.32 9	.71 20	.11 3	.18 5	.35 10	.030 (0,76)	.160 (4,06)	.065 (1,65)
T23	.53 15	1.06 30	1.59 45	.11 3	.18 5	.35 10	.04 1	.07 2	.18 5	.070 (1,78)	.312 (7,92)	.125 (3,18)
T24	.53 15	1.23 35	1.76 50	.11 3	.18 5	.35 10	.05 1.5	.07 2	.18 5	.080 (2,03)	.312 (7,92)	.110 (2,79)
T25	.71 20	1.06 30	1.41 40	.07 2	.14 4	.32 9	.04 1	.07 2	.16 4.5	.070 (1,78)	.330 (8,38)	.100 (2,54)
T26	N/A	.35 10	.71 20	N/A	.07 2	.18 5	N/A	.04 1	.07 2	.110 (2,79)	.500 (12,7)	.250 (6,35)
T27	N/A	.60 17	.88 25	N/A	.11 3	.21 6	N/A	.04 1	.11 3	.125 (3,18)	.500 (12,70)	.200 (5,08)
T28	N/A	.42 12	.63 18	N/A	.07 2	.14 4	N/A	.04 1	.07 2	.187 (4,75)	.750 (19,05)	.280 (7,11)
A10	2.12 60	3.17 90	6.35 180	.49 14	.99 28	1.69 48	.25 7	.53 15	1.06 30	.013 (0,33)	.070 (1,78)	.035 (0,89)
A15	1.06 30	1.59 45	2.82 80	.21 6	.35 10	.71 20	.11 3	.14 4	.35 10	.030 (0,76)	.160 (4,06)	.065 (1,65)
A20	1.06 30	1.76 50	3.17 90	.25 7	.35 10	.71 20	.11 3	.18 5	.35 10	.025 (0,64)	.140 (3,56)	.060 (1,52)
A25	.53 15	1.06 30	1.59 45	.11 3	.18 5	.35 10	.04 1	.07 2	.18 5	.070 (1,78)	.312 (7,92)	.125 (3,18)
P00	1.76 50	2.65 75	5.29 150	.71 20	.99 28	2.12 60	.35 10	.53 15	1.06 30	.013 (0,33)	.056 (1,42)	.035 (0,89)

NOTE: For basic switch operating forces, see page J-26.



Dimensions are shown: Inch (mm)

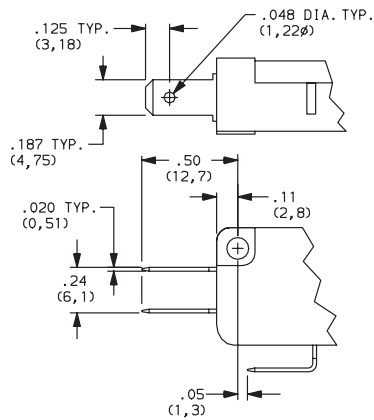
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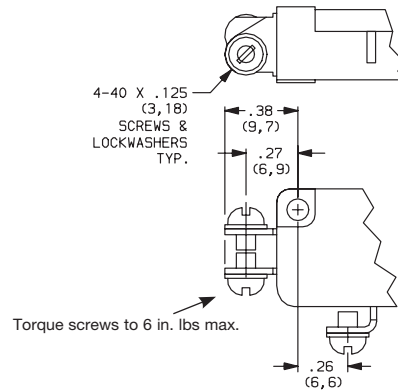
TM Series Mid Size Snap-acting Switches

TERMINATIONS

40 .187" QUICK CONNECT

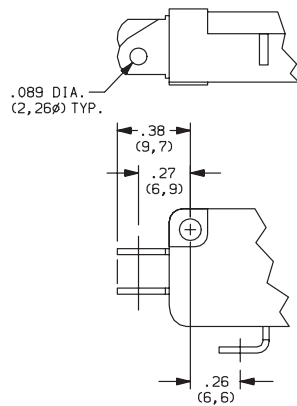


60 SCREW TERMINALS



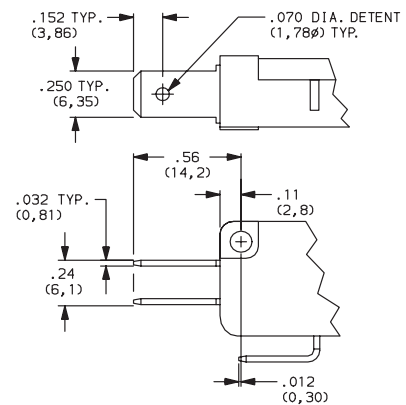
Not available with 'F5' rating option.

10 SOLDER



Not available with 'F5' rating option.

4A .250" QUICK CONNECT



Not available with 'F5' rating option.

CIRCUITRY

- C** SPDT (Single Pole, Double Throw)
- W** SPST N.C. (Single Pole, Single Throw, Normally Closed)
- Y** SPST N.O. (Single Pole, Single Throw, Normally Open)

Snap-acting