

#### 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

### c**FI**

### **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.

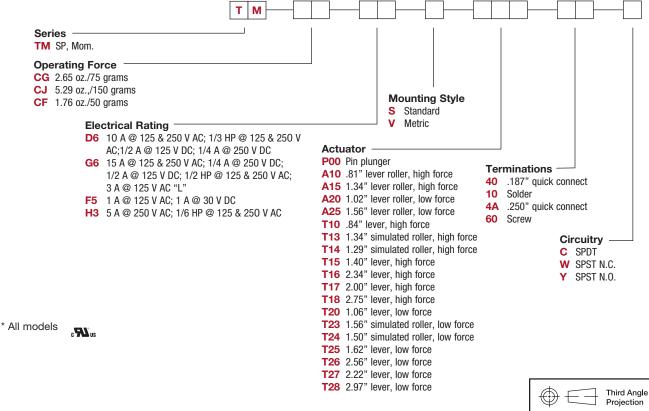
TERMINALS: Brass alloy for ratings up to 10 AMPS @ 250 V AC. Copper alloy for 15 AMPS @ 250 V AC ratings.

**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.



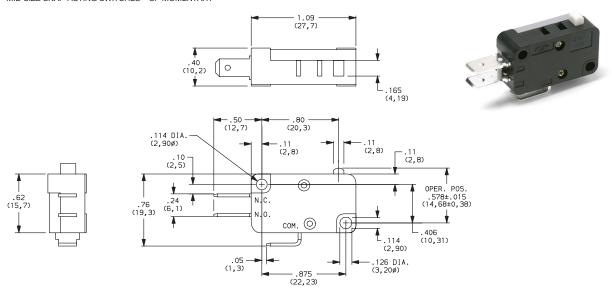


Dimensions are shown: Inch (mm) Specifications and dimensions subject to change

# **TM Series** Mid Size Snap-acting Switches

### **SERIES**

TM MID SIZE SNAP-ACTING SWITCHES - SP MOMENTARY



## **OPERATING FORCE**

OPTION CODE	BASIC SWITCH OPERATING FORCE (OZ./GRAMS)
CG	2.65 75
CJ	5.29 150
CF	1.76 50

Operating Force option 'CF' not available with 'T18, T27 and T28' actuator options. Operating force varies with actuator option, see ACTUATOR option section.

### **ELECTRICAL RATING**

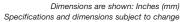
			CONTACT MATERIAL				
OPTION CODE	RoHS COMPLIANT*	RoHS COMPATIBLE*	MOVABLE STATIONARY CONTACT CONTACT		ELECTRICAL RATING		
<b>D</b> 6	Yes	Yes	Fine Silver	Fine Silver	10 AMPS @ 125 & 250 V AC; 1/3 HP @ 125 & 250 V AC; 1/2 AMP @ 125 V DC; 1/4 AMP @ 250 V DC.		
F5	Yes	Yes	Gold alloy	Gold alloy	From low level* to 1 AMP @ 125 V AC, 1 AMP @ 30 V DC.		
G6	Yes	Yes	Fine Silver	Fine Silver	15 AMPS @ 125 & 250 V AC; 0.25 AMP @ 250 V DC; 0.5 AMP @ 125 V DC; 1/2 HP @ 125 & 250 V AC; 3 AMPS @ 125 V AC "L".		
Н3	Yes	Yes	Fille Sliver	Fille Silver	5 AMPS @ 250 V AC; 1/6 HP @ 125 & 250 V AC.		

<sup>\*</sup> Note: See Technical Data section of this catalog for RoHS compliant and compatible definitions and specifications.

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.







<sup>\*</sup> All models c us

AVAILABLE

X NOT AVAILABLE

\* All models callus

Contact Customer Service Center for availability and delivery of nonstandard ratings.

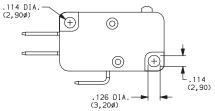
\* Low Level=conditions where no arcing occurs during switching, i.e., 0.4 VA max. @ 20 V AC or DC max.

## **MOUNTING STYLE**

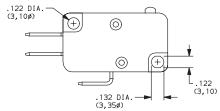








Recommended maximum screw size: 4-40.



Recommended maximum screw size: 3 mm.

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

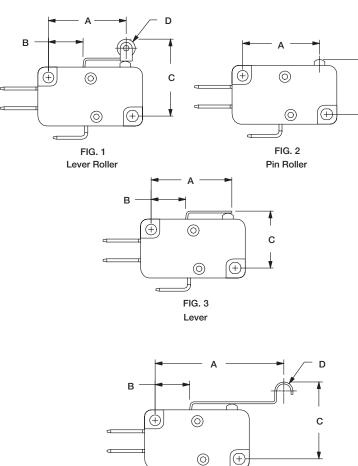


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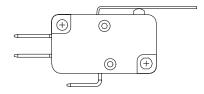
# **TM Series** Mid Size Snap-acting Switches

# **ACTUATOR**

BOO 0 .80 .578 ± .01	DIM. D
P00 2 378 ± .0 (14,68 ± 0,	
A10 1 .81 .36 .810 ± .02 (20,6) (9,1) (20,57 ± 0,	
<b>A15</b> 1 1.34 .36 .810 ± .04 (20,57 ± 1,	
<b>A20</b> 1 1.03 .58 .810 ± .05 (26,2) (14,7) (20,57 ± 1,	
<b>A25</b> 1 1.56 .58 .810 ± .08 (20,57 ± 2,	
<b>T10</b> 3 .84 .36 .600 ± .02 (15,24 ± 0,	
<b>T13</b> 4 1.34 .36 .810 ± .04 (20,57 ± 1,	
<b>T14</b> 4 1.28 .36 .743 ± .05 (32,5) (9,1) (18,9 ± 1,	
<b>T15</b> 3 1.40 .36 .600 ± .04 (15,24 ± 1,	· II
<b>T16</b> 3 2.34 3.6 6.600 ± .00 (15,24 ± 1,	
<b>T17</b> 3 2.00 .36 .600 ± .05 (50,8) (9,1) (15,24 ± 1,	
<b>T18</b> 3 2.75 .36 .600 ± .09 (15,24 ± 2,	
<b>T20</b> 3 1.06 .58 .600 ± .04 (15,24 ± 1,	
<b>T23</b> 4 1.56 .58 .810 ± .06 (39,6) (14,7) (20,57 ± 1,	
<b>T24</b> 4 1.50 .58 .743 ± .09 (18,80 ± 2,	
<b>T25</b> 3 1.62 .58 .600 ± .08 (14,7) (15,24 ± 2,	· ·
<b>T26</b> 3 2.56 .56 .600±.12 (15,24±3.	
<b>T27</b> 3 2.22 .58 .600±.12 (56,4) (14,7) (15,24±3.	
<b>T28</b> 3 2.97 .58 .600±.18 (15,24±4.	



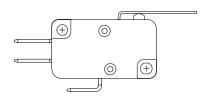
### HIGH FORCE, LOW MOTION PIVOT POSITION



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

#### LOW FORCE, HIGH MOTION PIVOT POSITION

FIG. 4 Simulated Roller



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.



Specifications and dimensions subject to change



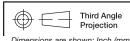
# **ACTUATOR**

### **SWITCH CHARACTERISTICS**

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

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

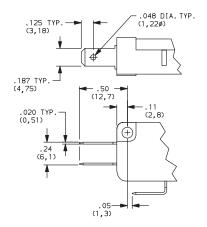




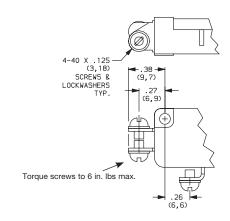
# **TM Series** Mid Size Snap-acting Switches

## **TERMINATIONS**

40 .187" QUICK CONNECT

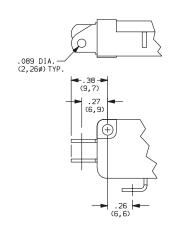


60 SCREW TERMINALS

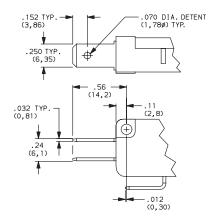


Not available with 'F5' rating option.

10 SOLDER



4A .250" QUICK CONNECT



Not available with 'F5' rating option.

Not available with 'F5' rating option.

## **CIRCUITRY**

C SPDT (Single Pole, Double Throw)

SPST N.C. (Single Pole, Single Throw, Normally Closed)

SPST N.O. (Single Pole, Single Throw, Normally Open)



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



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11SM1-TN107 11SM405 11SM8423-H2 11SX37-T 11SX48-H58 11SX55-H58 11SM2442-T 11SM76-T 11SM77-H58 11SM77-T
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