

# TF Series Miniature Snap-acting Switches

## Features/Benefits

- Broad range of operating forces
- Ratings up to 21 AMPS
- Wide variety of actuator styles
- Quick connect terminations

## Typical Applications

- Motor controls
- Thermostatics
- Portable tools



## Specifications

CONTACT RATING: From low level\* to 21 AMPS @ 277 V AC.  
 ELECTRICAL LIFE: 300,000 cycles at 10 AMPS @ 250 V AC, consult Customer Service Center for typical life of higher rated switches.  
 INSULATION RESISTANCE: 1,000 M ohm min.  
 DIELECTRIC STRENGTH: 1,500 Vrms min. @ sea level.  
 OPERATING TEMPERATURE: -40°F to 185°F (-40°C to 85°C).  
 OPERATING FORCE: From 15 to 400 grams at actuator button available.  
 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. Standard electrical life per UL 1054, rated for 6,000 operations.

## Materials

SWITCH HOUSING: Thermoplastic (UL 94V-0).  
 ACTUATOR BUTTON: Thermoplastic (UL 94V-0).  
 SPRING: Copper alloy.  
 PIVOT: Brass alloy.  
 MOVABLE CONTACTS: Gold alloy for ratings 1 AMP or less. Fine silver for ratings greater than 1 AMP up to 15 AMPS. Precious metal alloy for ratings greater than 15 AMPS.  
 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. Copper alloy for ratings greater than 10 AMPS.

**NOTE:** Specifications and materials listed above are 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. Available options are shown and described on pages K-6 through K-10. For additional options not shown in catalog, consult Customer Service Center.

<p><b>Series</b></p> <p><b>TF</b> SP, Mom.</p> <p><b>Operating Force</b></p> <p><b>CJ</b> 5.29 oz./150 grams</p> <p><b>CC</b> .53 oz./15 grams</p> <p><b>CD</b> .88 oz./25 grams</p> <p><b>CF</b> 1.76 oz./50 grams</p> <p><b>CG</b> 2.65 oz./75 grams</p> <p><b>EC</b> 7.94 oz./225 grams</p> <p><b>EE</b> 14.11 oz./400 grams</p> <p><b>Electrical Rating</b></p> <p><b>J6</b> 15 A, 277 V AC; 1/2 HP, 125, 250 V AC; 5 A, 125 V AC "L"; 0.5 A, 125 V DC; 0.25 A, 250 V DC</p> <p><b>F5</b> 1 A, 125 V AC; 1 A, 30 V DC</p> <p><b>H8</b> 5 A, 277 V AC; 1/10 HP, 125, 250 V AC</p> <p><b>J3</b> 21 A, 277 V AC; 1 HP, 125 V AC; 2 HP, 250 V AC; 5 A, 125 V AC "L"</p> <p><b>K6</b> 11 A, 277 V AC; 1/3 HP, 125, 250 V AC; 0.5 A, 125 V DC; 0.25 A, 250 V DC</p> <p><b>L3</b> 20 A, 250 V AC; 1 HP, 125 V AC; 2 HP 250 V AC</p> <p><b>V1</b> 1 A, 125 V AC; 1 A, 30 V DC (UL/CSA)</p> <p><b>V2</b> 5 A, 277 V AC; 1/10 HP, 125, 250 V AC (UL/CSA); 5(2) A, 250 V AC (VDE)</p> <p><b>V3</b> 11 A, 277 V AC; 1/3 HP, 125, 250 V AC; 0.5 A, 125 V DC; 0.25 A, 250 V DC (UL/CSA); 10(3) A, 250 V AC (VDE)</p> <p><b>V4</b> 21 A, 277 V AC; 1 HP, 125 V AC; 2 HP, 250 V AC; 5 A, 125 V AC "L"; 16(3) A, 250 V AC (VDE)</p>	<p><b>Mounting Style</b></p> <p><b>S</b> Standard</p> <p><b>V</b> Metric</p> <p><b>Actuator</b></p> <p><b>P00</b> Pin plunger</p> <p><b>A10</b> .81" lever roller, high force</p> <p><b>A15</b> 1.34" lever roller, high force</p> <p><b>A20</b> 1.05" lever roller, low force</p> <p><b>A25</b> 1.56" lever roller, low force</p> <p><b>T10</b> .84" lever, high force</p> <p><b>T13</b> 1.34" simulated roller, high force</p> <p><b>T14</b> 1.29" simulated roller, high force</p> <p><b>T15</b> 1.40" lever, high force</p> <p><b>T16</b> 2.34" lever, high force</p> <p><b>T18</b> 2.75" lever, high force</p> <p><b>T20</b> 1.10" lever, low force</p> <p><b>T23</b> 1.56" simulated roller, low force</p> <p><b>T24</b> 1.50" simulated roller, low force</p> <p><b>T25</b> 1.62" lever, low force</p> <p><b>T26</b> 2.57" lever, low force</p> <p><b>T28</b> 2.97" lever, low force</p> <p><b>WPO</b> Wide pin plunger</p>	<p><b>Circuitry</b></p> <p><b>C</b> SPDT</p> <p><b>W</b> SPST N.C.</p> <p><b>Y</b> SPST N.O.</p> <p><b>Terminations</b></p> <p><b>40</b> .187" quick connect</p> <p><b>4A</b> .250" quick connect</p> <p><b>5A</b> .250" offset quick connect</p> <p><b>5B</b> .187" offset quick connect</p>
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Dimensions are shown: Inch (mm)  
 Specifications and dimensions subject to change

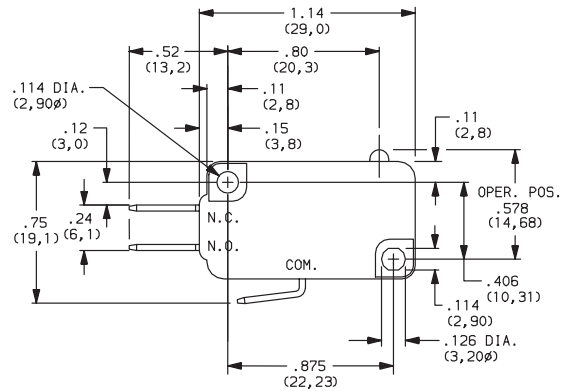
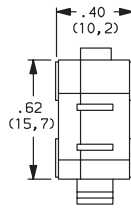


Snap-acting

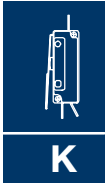
# TF Series Miniature Snap-acting Switches

SERIES

**TF** MINIATURE SNAP-ACTING SWITCHES – SP MOMENTARY



OPERATING FORCE



Snap-acting

OPTION CODE	BASIC SWITCH OPERATING FORCE (OZ./GRAMS)
<b>CC</b>	.53 15
<b>CD</b>	.88 25
<b>CF</b>	1.76 50
<b>CG</b>	2.65 75
<b>CJ</b>	5.29 150
<b>EC</b>	7.94 225
<b>EE*</b>	14.11 400

\*Minimums may apply, consult Customer Service Center.

Operating Force option 'CC' not available with 'T18 & T26' Actuator options.  
Operating force varies with actuator option, see ACTUATOR option section.

ELECTRICAL RATING

OPTION CODE	RoHS COMPLIANT *	RoHS COMPATIBLE *	CONTACT MATERIAL		ELECTRICAL RATING
			MOVABLE CONTACT	STATIONARY CONTACT	
<b>F5</b>	Yes	Yes	Gold alloy	Gold alloy	From low level* to 1 AMP @ 125 V AC, 1 AMP @ 30 V DC.
<b>H8</b>	Yes	Yes	Fine Silver	Fine Silver	5 AMPS @ 277 V AC; 1/10 HP @ 125 & 250 V AC.
<b>J3</b>	Yes	Yes			21 AMPS @ 277 V AC; 1 HP @ 125 V AC; 2 HP @ 250 V AC; 5 AMPS @ 125 V AC "L".
<b>J6</b>	Yes	Yes			15 AMPS @ 277 V AC; 1/2 HP @ 125 & 250 V AC; 5 AMPS @ 125 V AC "L". 0.5 AMP @ 125 V DC; 0.25 AMP @ 250 V DC.
<b>K6</b>	Yes	Yes			11 AMPS @ 277 V AC; 1/3 HP @ 125 & 250 V AC; 0.5 AMP @ 125 V DC; 0.25 AMP @ 250 V DC.
<b>L3</b>	Yes	Yes	Silver alloy		20 AMPS @ 250 V AC; 1 HP @ 125 V AC; 2 HP @ 250 V AC

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

All models with all options, .

Consult 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.






Third Angle Projection

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



# TF Series Miniature Snap-acting Switches

## ELECTRICAL RATING

OPTION CODE	RoHS COMPLIANT	RoHS COMPATIBLE	CONTACT MATERIAL		INTERNATIONAL ELECTRICAL RATING   
			MOVABLE CONTACT	STATIONARY CONTACT	
V1	Yes	Yes	Gold alloy	Gold alloy	From low level* to 1 AMP @ 125 V AC; 1 AMP @ 30 V DC (UL/CSA). 0.1 (0.05) AMP @ 250 V-μ T85 50E3 (VDE).
V2	Yes	Yes	Fine Silver	Fine Silver	5 AMPS @ 277 V AC; 1/10 HP @ 125 & 250 V AC (UL/CSA). 5 (2) AMPS @ 250 V-μ T85 50E3 (VDE).
V3	Yes	Yes			11 AMPS @ 277 V AC; 1/3 HP @ 125 & 250 V AC; 0.5 AMP @ 125 V DC; 0.25 AMP @ 250 V DC (UL/CSA). 10 (3) AMPS @ 250 V-μ 50E3 T85 (VDE).
V4	Yes	Yes	Precious metal alloy		21 AMPS @ 277 V AC; 1 HP @ 125 V AC; 2 HP @ 250 V AC; 16 (3) AMPS @ 250 V-μ T85 10E3 (VDE).

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

NOTE: V1-V4 ratings available with '5A or 5B' terminal styles only.

INTERNATIONAL RATING SYMBOLS	
μ	Microgap construction (less than 3 mm).
~	Alternating current.
T__	Maximum rated use temperature.
50E3	Cycles over 50,000 at rated current.
10E3	Cycles over 10,000 at rated current.
10(3)	Current Rating: First number represents resistive rating; second number represents inductive (motor) rating.

ELECTRICAL RATING	AMPS (REF)	OPERATING FORCE							
		CC (15)	CD (25)	CF (50)	CG (75)	CJ (150)	EC (225)	EE (400)	
F5	1	•	•	•	•	•	•	•	
H8	5	•	•	•	•	•	•	•	
J3	21	X	X	X	X	•	•	•	
J6	15	X	X	X	X	•	•	•	
K6	11	X	•	•	•	•	•	•	
L3	20	X	X	X	X	•	•	•	
V1	1	•	•	•	•	•	X	X	
V2	5	X	X	•	•	•	•	•	
V3	11	X	X	X	•	•	•	•	
V4	16	X	X	X	X	•	•	•	

All models   with all options, .

Consult 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.

• AVAILABLE

x NOT AVAILABLE

\*\* Available with 4A & 5A terminations only, see page K-10.

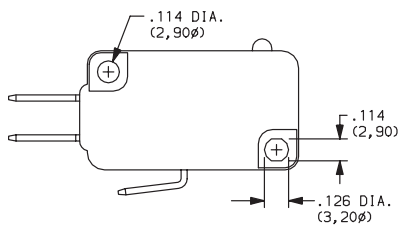


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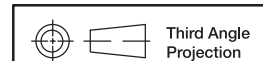
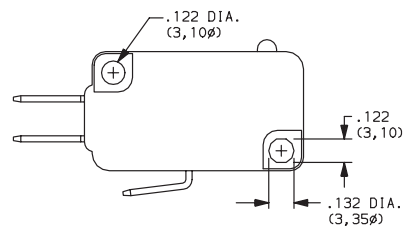
Snap-acting

## MOUNTING STYLE

**S** STANDARD  
For 4-40 screw size



**V** Metric  
For 3 mm screw size



Third Angle Projection  
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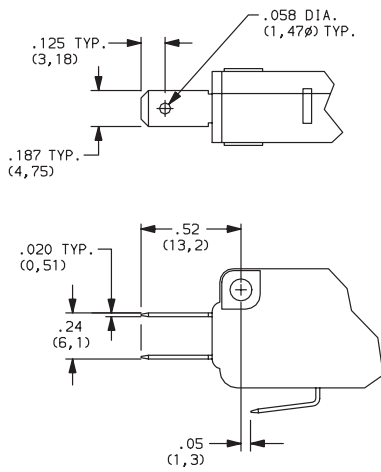




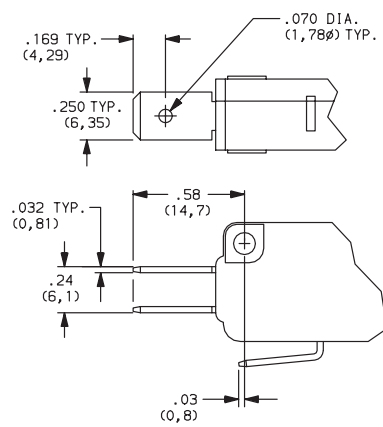
# TF Series Miniature Snap-acting Switches

## TERMINATIONS

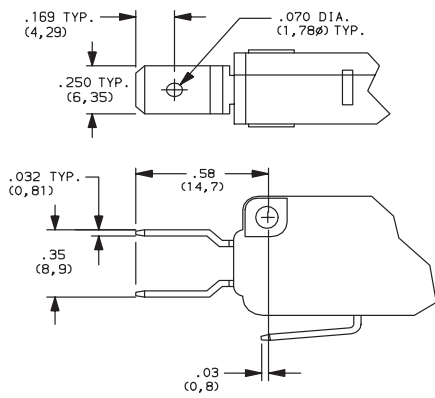
**40** .187" QUICK CONNECT



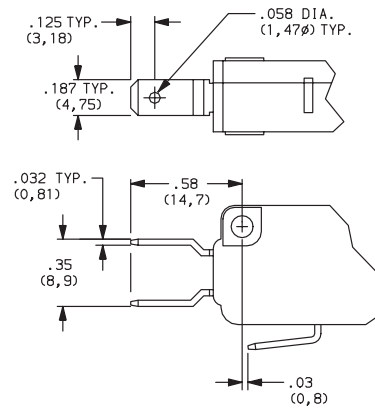
**4A** .250" QUICK CONNECT



**5A** OFFSET .250" QUICK CONNECT

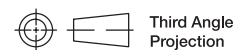


**5B** OFFSET .187" QUICK CONNECT



## 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)



Third Angle  
Projection

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Snap-acting