

# 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 J-6 through J-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<br/> <b>CC</b> .53 oz./15 grams<br/> <b>CD</b> .88 oz./25 grams<br/> <b>CF</b> 1.76 oz./50 grams<br/> <b>CG</b> 2.65 oz./75 grams<br/> <b>EC</b> 7.94 oz./225 grams<br/> <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<br/> <b>F5</b> 1 A, 125 V AC; 1 A, 30 V DC<br/> <b>H8</b> 5 A, 277 V AC; 1/10 HP, 125, 250 V AC<br/> <b>J3</b> 21 A, 277 V AC; 1 HP, 125 V AC; 2 HP, 250 V AC; 5 A, 125 V AC "L"<br/> <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<br/> <b>L3</b> 20 A, 250 V AC; 1 HP, 125 V AC; 2 HP 250 V AC<br/> <b>V1</b> 1 AMP @ 125 V AC; 1 AMP @ 30 V DC (UL/CSA); 0.1 (0.05) AMP @ 250 V~μ T85 50E3 (VDE)<br/> <b>V2</b> 5 A, 277 V AC; 1/10 HP, 125, 250 V AC (UL/CSA); 5(2) A, 250 V AC (VDE)<br/> <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)<br/> <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<br/> <b>V</b> Metric</p> <p><b>Actuator</b></p> <p><b>P00</b> Pin plunger<br/> <b>A10</b> .81" lever roller, high force<br/> <b>A15</b> 1.34" lever roller, high force<br/> <b>A20</b> 1.05" lever roller, low force<br/> <b>A25</b> 1.56" lever roller, low force<br/> <b>T10</b> .84" lever, high force<br/> <b>T13</b> 1.34" simulated roller, high force<br/> <b>T14</b> 1.29" simulated roller, high force<br/> <b>T15</b> 1.40" lever, high force<br/> <b>T16</b> 2.34" lever, high force<br/> <b>T18</b> 2.75" lever, high force<br/> <b>T20</b> 1.10" lever, low force<br/> <b>T23</b> 1.56" simulated roller, low force<br/> <b>T24</b> 1.50" simulated roller, low force<br/> <b>T25</b> 1.62" lever, low force<br/> <b>T26</b> 2.57" lever, low force<br/> <b>T28</b> 2.97" lever, low force<br/> <b>WPO</b> Wide pin plunger</p> | <p><b>Circuitry</b></p> <p><b>C</b> SPDT<br/> <b>W</b> SPST N.C.<br/> <b>Y</b> SPST N.O.</p> <p><b>Terminations</b></p> <p><b>40</b> .187" quick connect<br/> <b>4A</b> .250" quick connect<br/> <b>5A</b> .250" offset quick connect<br/> <b>5B</b> .187" offset quick connect</p> |
|---|--|---|



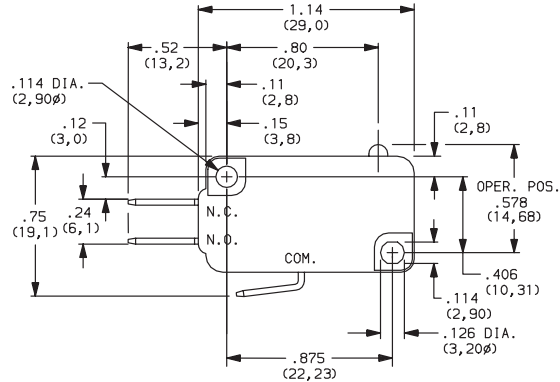
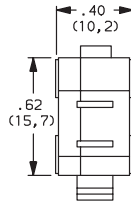
Dimensions are shown: Inches (mm)  
 Specifications and dimensions subject to change

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<br>15                                |
| <b>CD</b>   | .88<br>25                                |
| <b>CF</b>   | 1.76<br>50                               |
| <b>CG</b>   | 2.65<br>75                               |
| <b>CJ</b>   | 5.29<br>150                              |
| <b>EC</b>   | 7.94<br>225                              |
| <b>EE</b>   | 14.11<br>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 specific 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).<br>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).<br>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;<br>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;<br>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 <sub>max</sub>             | 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  specific 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.

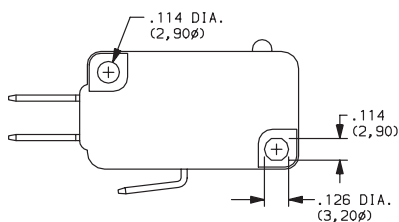
• AVAILABLE

X NOT AVAILABLE

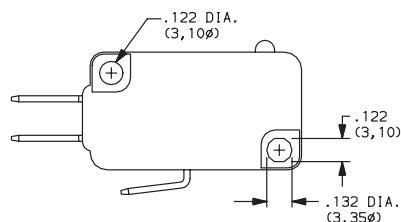
\*\* Available with 4A & 5A terminations only, see page J-10.

## MOUNTING STYLE

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



**V** Metric  
For 3 mm screw size



Third Angle Projection

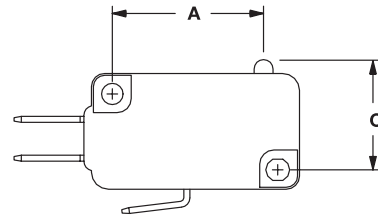
Dimensions are shown: Inches (mm)  
Specifications and dimensions subject to change



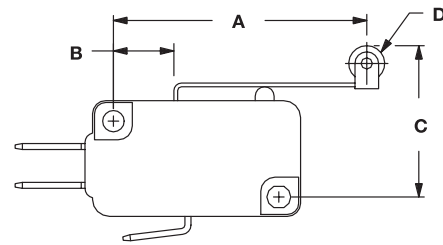
# TF Series Miniature Snap-acting Switches

## ACTUATOR

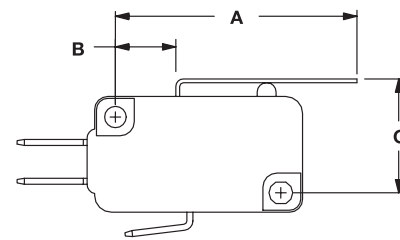
| OPTION CODE | FIG. | DIM. A         | DIM. B        | DIM. C                        | DIM. D             |
|-------------|------|----------------|---------------|-------------------------------|--------------------|
| <b>P00</b>  | 1    | .80<br>(20,3)  | —             | .578 ± .015<br>(14,68 ± 0,38) | —                  |
| <b>A10</b>  | 2    | .81<br>(20,6)  | .32<br>(8,1)  | .810 ± .020<br>(20,57 ± 0,51) | .19 dia.<br>(4,80) |
| <b>A15</b>  | 2    | 1.34<br>(34,0) | .32<br>(8,1)  | .810 ± .030<br>(20,57 ± 0,76) | .19 dia.<br>(4,80) |
| <b>A20</b>  | 2    | 1.05<br>(26,7) | .54<br>(13,7) | .810 ± .050<br>(20,57 ± 1,27) | .19 dia.<br>(4,80) |
| <b>A25</b>  | 2    | 1.56<br>(39,6) | .54<br>(13,7) | .810 ± .075<br>(20,57 ± 1,91) | .19 dia.<br>(4,80) |
| <b>T10</b>  | 3    | .84<br>(21,3)  | .32<br>(8,1)  | .600 ± .020<br>(15,24 ± 0,51) | —                  |
| <b>T15</b>  | 3    | 1.40<br>(35,6) | .32<br>(8,1)  | .600 ± .040<br>(15,24 ± 1,02) | —                  |
| <b>T16</b>  | 3    | 2.34<br>(59,4) | .32<br>(8,1)  | .600 ± .065<br>(15,24 ± 1,65) | —                  |
| <b>T18</b>  | 3    | 2.75<br>(69,9) | .32<br>(8,1)  | .600 ± .080<br>(15,24 ± 2,03) | —                  |
| <b>T20</b>  | 3    | 1.10<br>(27,9) | .54<br>(13,7) | .600 ± .050<br>(15,24 ± 1,27) | —                  |
| <b>T25</b>  | 3    | 1.62<br>(41,1) | .54<br>(13,7) | .600 ± .070<br>(15,24 ± 1,78) | —                  |
| <b>T26</b>  | 3    | 2.57<br>(65,3) | .54<br>(13,7) | .600 ± .150<br>(15,24 ± 3,81) | —                  |
| <b>T28</b>  | 3    | 2.97<br>(75,4) | .54<br>(13,7) | .600 ± .187<br>(15,24 ± 4,75) | —                  |
| <b>T13</b>  | 4    | 1.34<br>(34,0) | .32<br>(8,1)  | .810 ± .030<br>(20,57 ± 0,76) | .19 dia.<br>(4,80) |
| <b>T14</b>  | 4    | 1.29<br>(32,8) | .32<br>(8,1)  | .730 ± .030<br>(18,54 ± 0,76) | .19 dia.<br>(6,40) |
| <b>T23</b>  | 4    | 1.56<br>(39,6) | .54<br>(13,7) | .810 ± .065<br>(20,57 ± 1,65) | .19 dia.<br>(4,80) |
| <b>T24</b>  | 4    | 1.50<br>(38,1) | .54<br>(13,7) | .730 ± .060<br>(18,54 ± 1,52) | .25 dia.<br>(6,40) |
| <b>WP0</b>  | 5    | .80<br>(20,3)  | —             | .635 ± .015<br>(16,13 ± 0,38) | —                  |



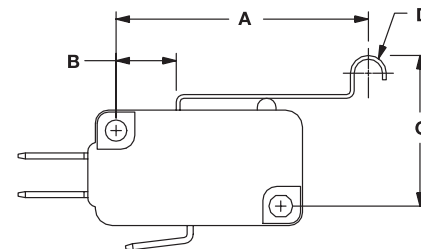
**FIG. 1**  
Pin Plunger



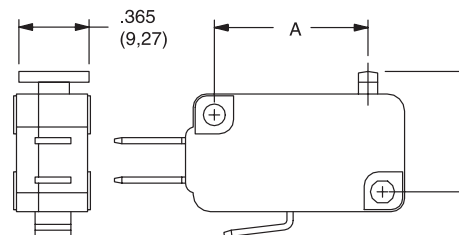
**FIG. 2**  
Lever Roller



**FIG. 3**  
Lever



**FIG. 4**  
Simulated Roller



**FIG. 5**  
Wide Pin



Third Angle  
Projection

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

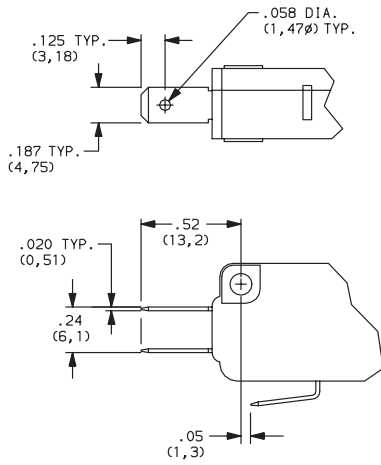




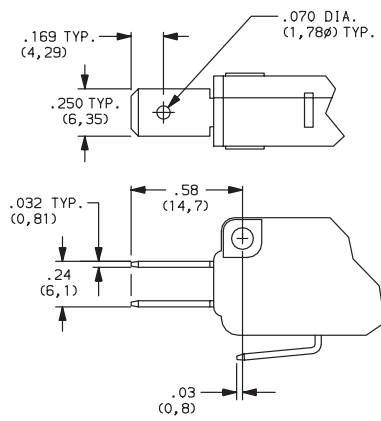
# TF Series Miniature Snap-acting Switches

## TERMINATIONS

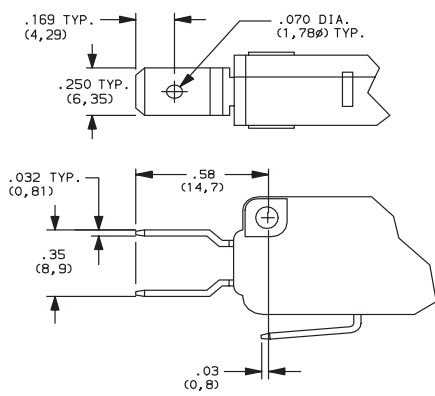
**40** .187" QUICK CONNECT



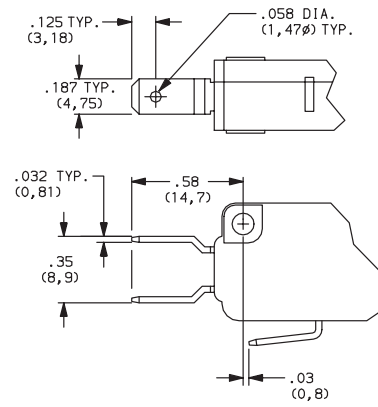
**4A** .250" QUICK CONNECT



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

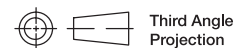


**5B** OFFSET .187" QUICK CONNECT



## 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

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





Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.