

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-11. For additional options not shown in catalog, consult Customer Service Center.

T F									
Series TF SP, Mom.		Operating Force CJ 5.29 oz./150 grams CC .53 oz./15 grams CD .88 oz./25 grams CF 1.76 oz./50 grams CG 2.65 oz./75 grams EC 7.94 oz./225 grams EE 14.11 oz./400 grams		Electrical Rating J6 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 F5 1 A, 125 V AC; 1 A, 30 V DC H8 5 A, 277 V AC; 1/10 HP, 125, 250 V AC J3 21 A, 277 V AC; 1 HP, 125 V AC; 2 HP, 250 V AC; 5 A, 125 V AC "L" K6 11 A, 277 V AC; 1/3 HP, 125, 250 V AC; 0.5 A, 125 V DC; 0.25 A, 250 V DC L3 20 A, 250 V AC; 1 HP, 125 V AC; 2 HP 250 V AC		Mounting Style S Standard V Metric		Circuitry C SPDT W SPST N.C. Y SPST N.O.	
				Actuator P00 Pin plunger A10 .81" lever roller, high force A15 1.34" lever roller, high force A20 1.05" 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 T18 2.75" lever, high force T20 1.10" lever, low force T23 1.56" simulated roller, low force T24 1.50" simulated roller, low force T25 1.62" lever, low force T26 2.57" lever, low force T28 2.97" lever, low force WPO Wide pin plunger		Terminations 40 .187" quick connect 4A .250" quick connect 5A .250" offset quick connect 5B .187" offset quick connect			



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

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ELECTRICAL RATING

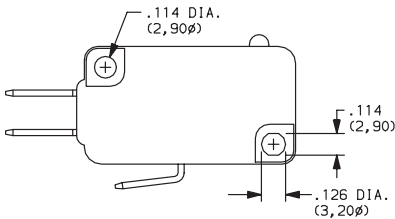
ELECTRICAL RATING	AMPS (REF.)	OPERATING FORCE						
		CC (15)	CD (25)	CF (50)	CG (75)	CJ (150)	EC (225)	EE (400)
F5	1	•	•	•	•	•	•	
H8	5	•	•	•	•	•	•	•
J3	21	X	X	X	X	•	•	•
J6	15	X	X	X	X	•	•	•
K6	11	X	•	•	•	•	•	•
L3	20	X	X	X	X	•	•	•

• AVAILABLE
X NOT AVAILABLE
** Available with 4A & 5A terminations only, see page J-10.

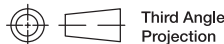
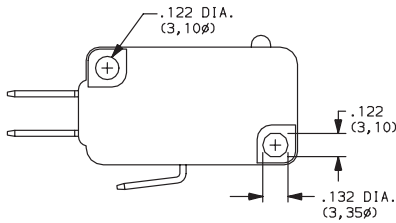
All models 
Consult Customer Service center for availability and delivery of nonstandard ratings.
* Low Level=conditions where no arcing occurs during switching, i.e., 0.4 VA max. @ 20 V AC or DC max.

MOUNTING STYLE

S STANDARD
For 4-40 screw size



V Metric
For 3 mm screw size



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ACTUATOR



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

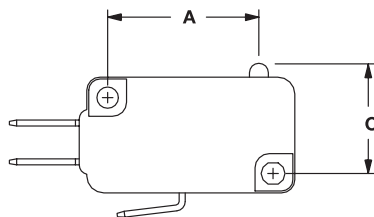


FIG. 1
Pin Plunger

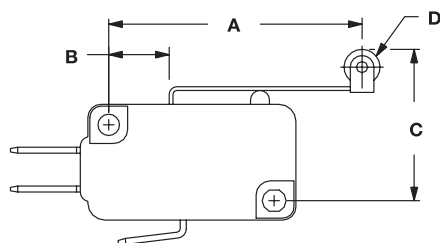


FIG. 2
Lever Roller

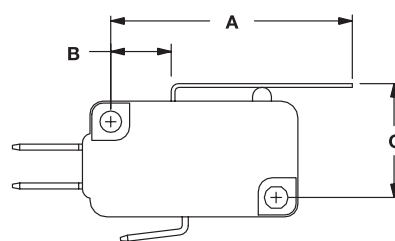


FIG. 3
Lever

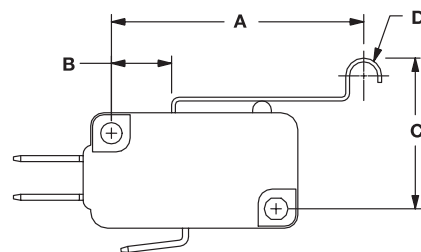


FIG. 4
Simulated Roller

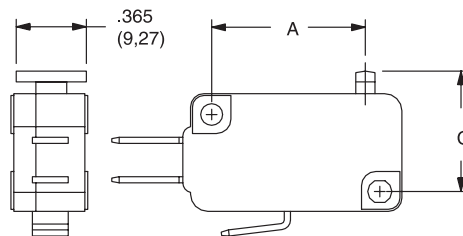
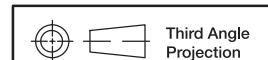


FIG. 5
Wide Pin



Third Angle
Projection

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

C&K



Snap-acting

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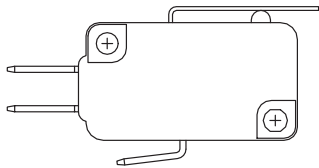
ACTUATOR 

SWITCH CHARACTERISTICS

OPTION CODE	MAXIMUM OPERATING FORCE (OZ./GRAMS)							MINIMUM RELEASE FORCE (OZ./GRAMS)							MAXIMUM DIFFERENTIAL TRAVEL	MAXIMUM PRETRAVEL	MINIMUM OVERTRAVEL
	CC (15)	CD (25)	CF (50)	CG (75)	CJ (150)	EC (225)	EE (400)	CC (15)	CD (25)	CF (50)	CG (75)	CJ (150)	EC (225)	EE (400)	ALL FORCES	ALL FORCES	ALL FORCES
A10	.63 18	1.06 30	2.29 65	3.17 90	6.35 180	7.94 225	14.11 400	.21 6	.35 10	.35 10	.53 15	.71 20	1.98 56	3.88 110	.015 (0,38)	.060 (1,52)	.030 (0,76)
A15	.28 8	.42 12	1.06 30	1.59 45	3 85	4.59 130	7.94 225	.07 2	.14 4	.14 4	.18 5	.35 10	.71 20	2.82 80	.030 (0,76)	.100 (2,54)	.065 (1,65)
A20	0.53 15	0.71 20	1.41 40	2.12 60	4.23 120	6 170	9.7 275	0.07 2	0.11 3	0.11 3	0.18 5	0.42 12	0.71 20	1.41 40	0.025 (0,64)	0.12 (3,05)	0.055 (1,40)
A25	.18 5	.28 8	.56 16	.85 24	1.69 48	2.65 75	4.41 125	.04 1	.07 2	.07 2	.07 2	.21 6	.35 10	.71 20	.050 (1,27)	.250 (6,35)	.120 (3,05)
P00	.53 15	.88 25	1.76 50	2.65 75	5.29 150	7.94 225	14.11 400	.21 6	.35 10	.35 10	.53 15	1.23 35	1.98 56	3.88 110	.010 (0,25)	.047 (1,19)	.050 (1,27)
T10	.63 18	1.06 30	2.29 65	3.17 90	6.35 180	7.94 225	14.11 400	.21 6	.35 10	.35 10	.53 15	.71 20	1.98 56	3.88 110	.015 (0,38)	.060 (1,52)	.030 (0,76)
T13	.28 8	.42 12	1.06 30	1.59 45	3 85	4.59 130	7.94 225	.07 2	.14 4	.14 4	.18 5	.35 10	.71 20	2.82 80	.030 (0,76)	.100 (2,54)	.065 (1,65)
T14	.28 8	.42 12	1.23 35	1.76 50	3.17 90	4.76 135	7.94 225	.07 2	.14 4	.14 4	.18 5	.35 10	.71 20	2.82 80	.030 (0,76)	.100 (2,54)	.060 (1,52)
T15	.25 7	.42 12	1.06 30	1.41 40	2.82 80	4.41 125	7.94 225	.07 2	.14 4	.14 4	.18 5	.28 8	.63 18	2.82 80	.030 (0,76)	.110 (2,79)	.065 (1,65)
T16	.18 5	.28 8	.53 15	.78 22	1.59 45	2.47 70	4.23 120	.04 1	.07 2	.07 2	.07 2	.28 8	.35 10	.71 20	.045 (1,14)	.250 (6,35)	.125 (3,18)
T18	N/A	.21 6	.42 12	.71 20	1.41 40	2.12 60	3.53 100	N/A	.04 1	.04 1	.07 2	.18 5	.28 8	.56 16	.062 (1,57)	.300 (7,62)	.155 (3,94)
T20	.53 15	.71 20	1.41 40	2.12 60	4.23 120	6 170	9.70 275	.21 6	.35 10	.35 10	.53 15	.71 20	1.98 56	3.88 110	.030 (0,76)	.140 (3,56)	.060 (1,52)
T23	.18 5	.28 8	.56 16	.85 24	1.69 48	2.65 75	4.41 125	.04 1	.07 2	.07 2	.07 2	.21 6	.35 10	.71 20	.050 (1,27)	.250 (6,35)	.120 (3,05)
T24	0.18 5	0.28 8	0.56 16	0.88 25	1.76 50	2.65 75	4.76 135	0.04 1	0.07 2	0.07 2	0.11 3	0.21 6	0.35 10	0.71 20	.005 (1,27)	0.23 (5,84)	0.11 (2,79)
T25	.18 5	.28 8	.53 15	.88 25	1.59 45	2.47 70	4.23 120	.04 1	.07 2	.07 2	.07 2	.21 6	.35 10	.99 28	.055 (1,40)	.250 (6,35)	.125 (3,18)
T26	N/A	.14 4	.28 8	.42 12	.85 24	1.27 36	2.26 64	N/A	.04 1	.04 1	.05 1.5	.12 3.5	.21 6	.39 11	.100 (2,54)	.500 (12,70)	.235 (5,97)
T28	N/A	N/A	N/A	0.42 12	0.71 20	1.06 30	1.94 55	N/A	N/A	N/A	0.04 1	0.11 3	0.18 5	0.32 9	0.12 (3,05)	.0.560 (14,22)	0.285 (7,24)
WP0	.53 15	.88 25	1.76 50	2.65 75	5.29 150	7.94 225	14.11 400	.21 6	.35 10	.35 10	.53 15	1.23 35	1.97 56	3.88 110	.010 (0,25)	.047 (1,19)	.030 (0,51)

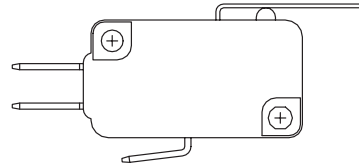
NOTE: For basic switch operating forces, see page J-6.

HIGH FORCE, LOW MOTION PIVOT POSITION



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

LOW FORCE, HIGH MOTION PIVOT POSITION



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

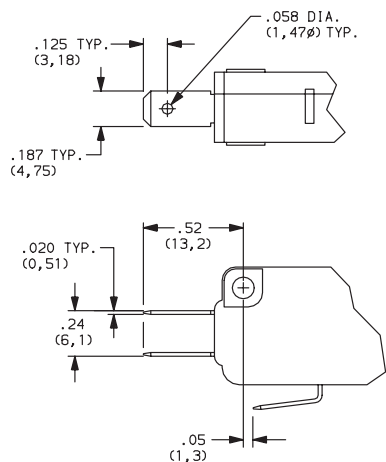


Dimensions are shown: Inch (mm)
Specifications and dimensions subject to change

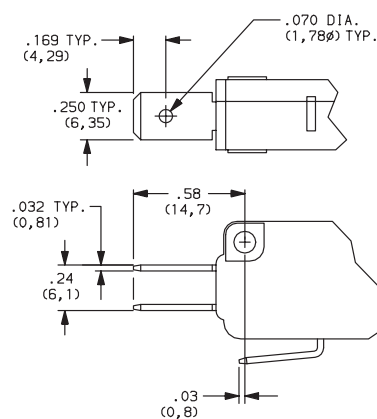
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TERMINATIONS

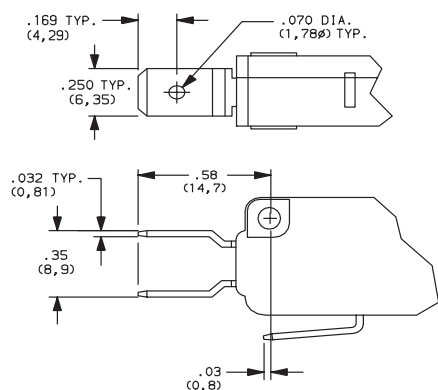
40 .187" QUICK CONNECT



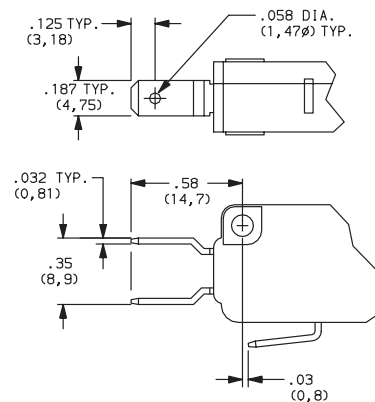
4A .250" QUICK CONNECT



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)



Snap-acting



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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

C&K Components:

<u>TFCGV3VA105BC</u>	<u>TFCGV3VA155BC</u>	<u>TFCGV3VT155BC</u>	<u>TFCGV3VT185BC</u>	<u>TFCGV3VP005BC</u>	
<u>TFCJJ6ST1573CU</u>	<u>TFECK6ST1640W</u>	<u>TFCDF5SP0040C</u>	<u>TFCDH8SP0040C</u>	<u>TFCDH8ST1340C</u>	<u>TFCDH8ST1540C</u>
<u>TFCGK6ST2640Y</u>	<u>TFCGK6VP0040C</u>	<u>TFCGV3VT145BC</u>	<u>TFCJF5VT2540Y</u>	<u>TFCJJ6SP004AC</u>	<u>TFCJL3SP004AC</u>
<u>TFCDH8SA1040C</u>	<u>TFCGV3ST155BC</u>	<u>TFCGK6ST1840Y</u>	<u>TFCCH8SP0040C</u>	<u>TFEEJ6ST1640C</u>	<u>TFCDH8VT1640C</u>
<u>TFCCV1VA105AC</u>	<u>TFCJJ6ST1540W</u>	<u>TFECJ6VT1340C</u>	<u>TFCFH8ST1640C</u>	<u>TFCJV4VT155AC</u>	<u>TFCCF5VT1540C</u>
<u>TFCFV1SA155BC</u>	<u>TFCGF5ST144AC</u>	<u>TFCGV2SP005AY</u>	<u>TFCJL3ST154AY</u>	<u>TFECJ6SA1540C</u>	<u>TFCGV3VA255BC</u>
<u>TFCJJ6SA254AC</u>	<u>TFEEJ6SP0040W</u>	<u>TFCGK6SA154AC</u>	<u>TFCJJ6VA1040C</u>	<u>TFCCF5SP0040C</u>	<u>TFCJV3VA105AC</u>
<u>TFCGV3ST155AC</u>	<u>TFECJ6ST1540C</u>	<u>TFCDF5VT1840C</u>	<u>TFCJK6ST1440C</u>	<u>TFEEV3SP005BY</u>	<u>TFCFH8VT1640C</u>
<u>TFCJV3VT255BC</u>	<u>TFCJF5SA104AY</u>	<u>TFCDF5ST255AY</u>	<u>TFCJJ6ST2340C</u>	<u>TFCGH8VP0040C</u>	<u>TFCCF5SA1040C</u>
<u>TFCJH8ST1340C</u>	<u>TFCGV3SP005BY</u>	<u>TFCCF5VT1540C</u>	<u>TFECJ6VP0040Y</u>	<u>TFCJJ6VT154AC</u>	<u>TFCCH8ST234AC</u>
<u>TFCGV3VA105AC</u>	<u>TFCGV3VT165AC</u>	<u>TFCJJ6SP0040Y</u>	<u>TFCFK6SP0040Y</u>	<u>TFCCF5ST2340C</u>	<u>TFCJJ6VT1840C</u>
<u>TFCGF5ST234AW</u>	<u>TFECJ6SP0040C</u>	<u>TFCGF5VT2340C</u>	<u>TFCDF5ST155AC</u>	<u>TFCJF5ST2540C</u>	<u>TFCCH8SP005AC</u>
<u>TFCGV3SA105BC</u>	<u>TFCJJ6VP0040C</u>	<u>TFCJF5SP0040W</u>	<u>TFCGF5SA2540C</u>	<u>TFCGK6ST1440C</u>	<u>TFCJJ6ST155AC</u>
<u>TFCGF5SP004AC</u>	<u>TFCDF5ST2540C</u>	<u>TFCJH8SP004AY</u>	<u>TFCGV1VA105AC</u>	<u>TFCCV1SA155BC</u>	<u>TFCJF5ST1440Y</u>
<u>TFCFK6ST155BC</u>	<u>TFCCF5VP004AC</u>	<u>TFCJJ6ST1540C</u>	<u>TFCFH8ST1540C</u>	<u>TFCFH8VA1040C</u>	<u>TFCCF5ST155AC</u>
<u>TFCCF5ST2040C</u>	<u>TFCFK6SA1040C</u>	<u>TFCCF5SP0040W</u>	<u>TFCJK6ST164AY</u>	<u>TFCJF5ST1040C</u>	<u>TFECH8VT2540Y</u>
<u>TFECF5VA255AW</u>	<u>TFEEV4VP005AC</u>	<u>TFCDF5VT1540C</u>	<u>TFCDF5ST165BY</u>	<u>TFCJJ6SA1540Y</u>	