Series 450

24mm Rotary Potentiometer

- Versatile Mounting Styles
- Single, Tandem, and Concentric Options
- Power Switch Available
- Panel Seal Available
- Wide Resistance Range
- Low Noise Output
- Insulated and Metal Shaft Options



Ordering Information

Series	Terminal Style	Mounting Style "A"	Shaft Length "L"	Shaft Trim	Resistance Code	Resistance Tolerance	Taper	Switch Option	A/R Lug Options
450	T	2	20	R	103	B	1	A	1

Code	Spec.
T	Solder lug
X	PC (STD)
Y	PC (Long)
U	PC formed to front
V	PC formed to rear

Brass Bushing	
2	.250" (6.35mm)
3	.375" (9.53mm)
8	1.000" (25.4mm)
Diameter: 3/8"– 32UNEF-2A	
Length increment: 1/8"	
Die-Cast Bushing	
A	.250" (6.35mm)
B	.375" (9.53mm)
Diameter: 3/8"– 32UNEF-2A	
Molded Bushing	
M	.250" (6.35mm)
Diameter: 3/8" – 32UNEF-2A	
Twist Tab	
1	Twist tab

Metal Shaft	
20	.625" (15.9mm)
24	.750" (19.1mm)
28	.875" (22.2mm)
32	1.000" (25.4mm)
Diameter: 1/4"	
Length increment: 1/32"	
Molded Shaft	
M2	.625" (15.9mm)
M3	.750" (19.1mm)
M4	.875" (22.2mm)
M5	1.000" (25.4mm)

NOTES:
**Shaft length reduced by .014" when molded bushing is used.*
**Molded shafts for use with pot or pot w/rotary switch only.*

Code	Spec.
R	Round
F	Flatted
K	Split Knurl
*S	Slotted

* *Slotted trim only without switch*

Code	Resistance
501	500 Ω
102	1 kΩ
252	2.5 kΩ
502	5 kΩ
103	10 kΩ
253	25 kΩ
104	100 kΩ

Code	Spec.
A	±10%
B	±20%

Code	Spec.
1	Linear
2	10% AUD
3	10% CCW AUD

Code	Spec.
1	Left side lug
4	Right side lug
5	No lug
6	Bilateral lugs *(Available with brass bushing only)*

Code	Switch	Actuation	Type
A	None	—	—
B	SPST	Rotary	050
C	SPST	Rotary	TGC
D	DPST	Rotary	027
E	SPDT	Rotary	028
F	SPST	Push-Pull	FR-K
G	SPST	Push-Push	040
H	SPDT	Push-Push	041
J	SPST	Rotary	FR-GC

©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

Electrical Specifications

Parameter	Conditions & Remarks	Min	Max	Unit
Resistance Range	Linear	500	2 Meg	Ω
	Audio	5k	1 Meg	Ω
Resistance Tolerance	Standard	-30	+30	%
	Special	-20	+20	%
	Special	-10	+10	%
Dielectric Strength	1 minute		1080	VAC
Power Rating	@ 55°C, resistances ≤100 kΩ		1/2	watt
	@ 55°C, resistances >100 kΩ		1/3	watt
Operating Voltage			750	VDC
Insulation Resistance	250 VDC	100		MΩ
Effective Electrical Angle			300	°

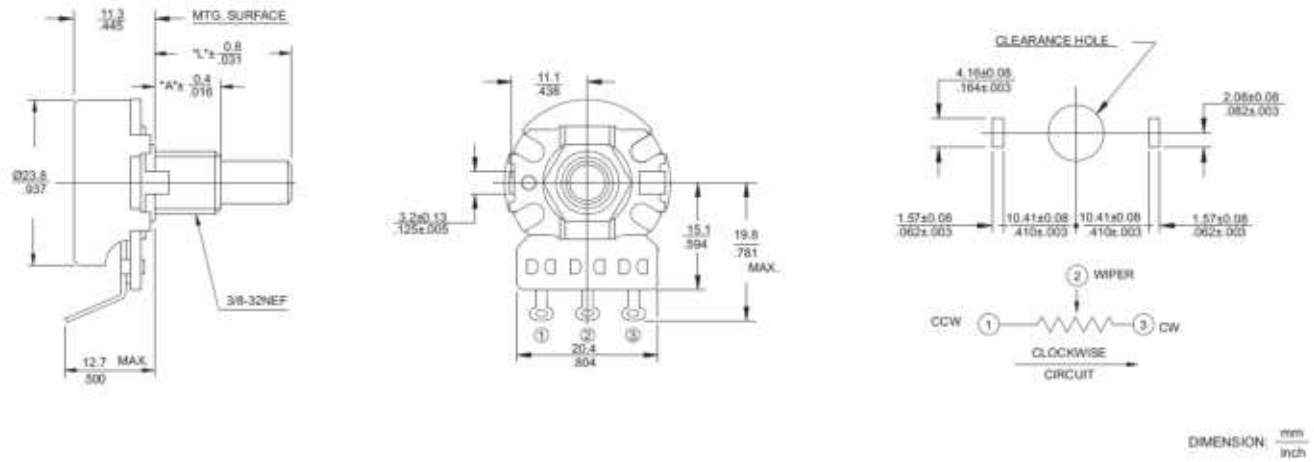
Mechanical and Environmental

Parameter	Conditions & Remarks	Min	Max	Unit
Operating Temperature Range		-10	+80	°C
Rotational Life	Standard	10,000		cycles
	Special	100,000		cycles
	Special	250,000		cycles
Mechanical Angle	Push switch or no switch		300	°
	With rotary switch		320	°
Rotational Torque		54	432	gf-cm
Stop Strength		10.36		kgf-cm
Push-Pull Strength of Shaft:	10 kg for 10 seconds			
Soldering Condition:	Maximum temperature of 260°C for 5 seconds			
Packaging:	Standard cardboard box packaging			

All testing is performed at room ambient conditions except as noted. Users should verify device actual performance in their specific applications.
This product is compliant to RoHS3 Directive 2015/863 Amendments of Annex II on 31 March 2015, and REACH SVHC Directive EC 1907/2006 Amendments of Annex XIV & Annex XVII on 15 January 2018.
Custom and value-added options available on request. Please contact your sales representative for additional information.

Electrical and Mechanical Specifications

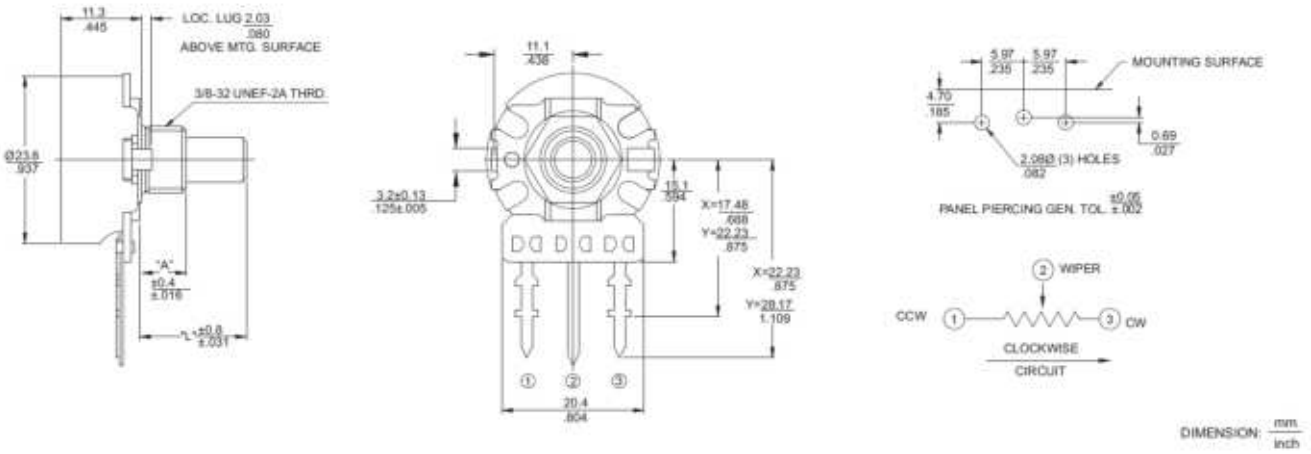
Series 450T Metal Shaft, Bushing Mount, Solder Lug "T" Type Terminals



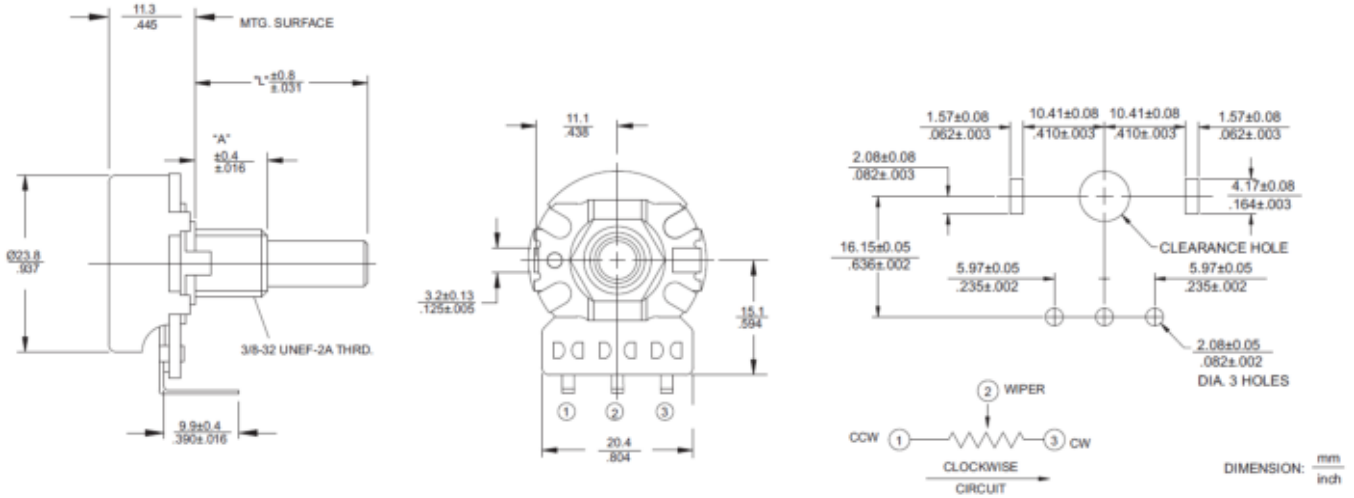
©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

Electrical and Mechanical Specifications

Series 450X/450Y Metal Shaft, Bushing Mount, Printed Circuit “X” or “Y” Type Terminals



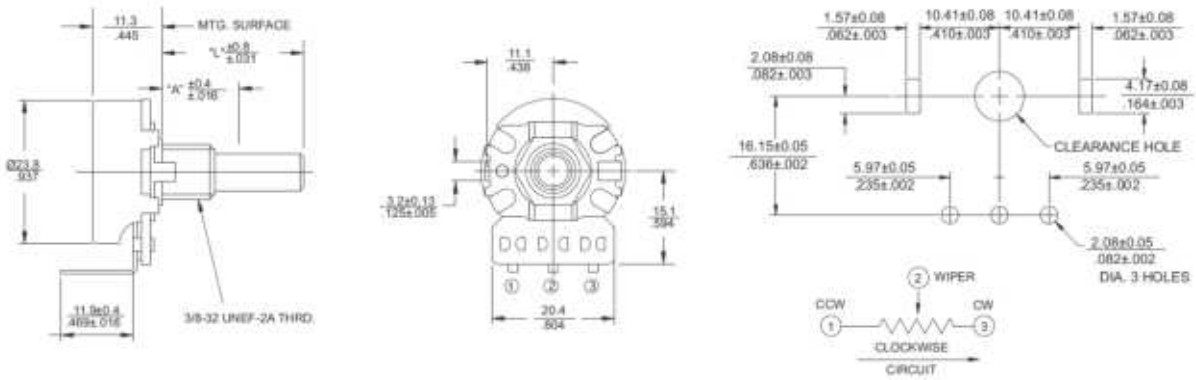
Series 450U Metal Shaft, Bushing Mount, Printed Circuit “U” Type Terminals



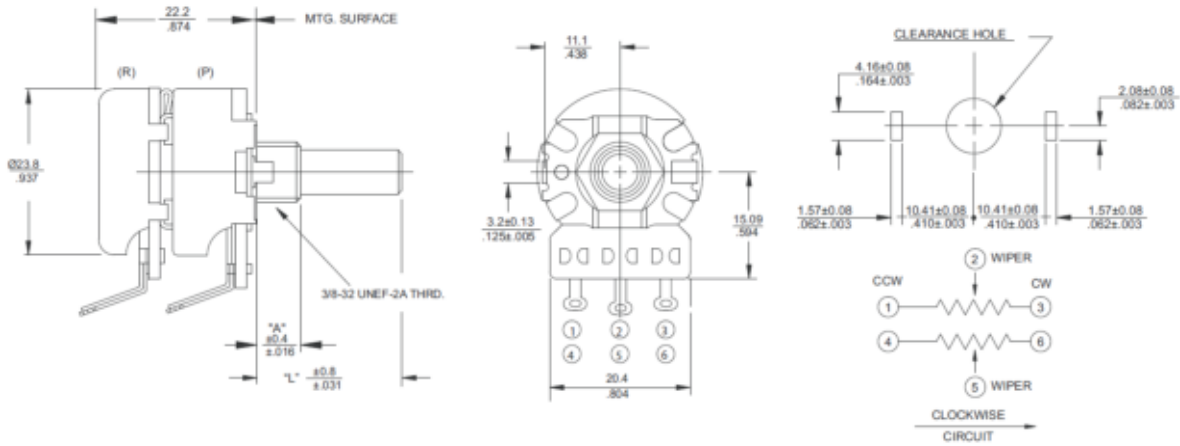
©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

Electrical and Mechanical Specifications

Series 450V Metal Shaft, Bushing Mount, Printed Circuit “V” Type Terminals



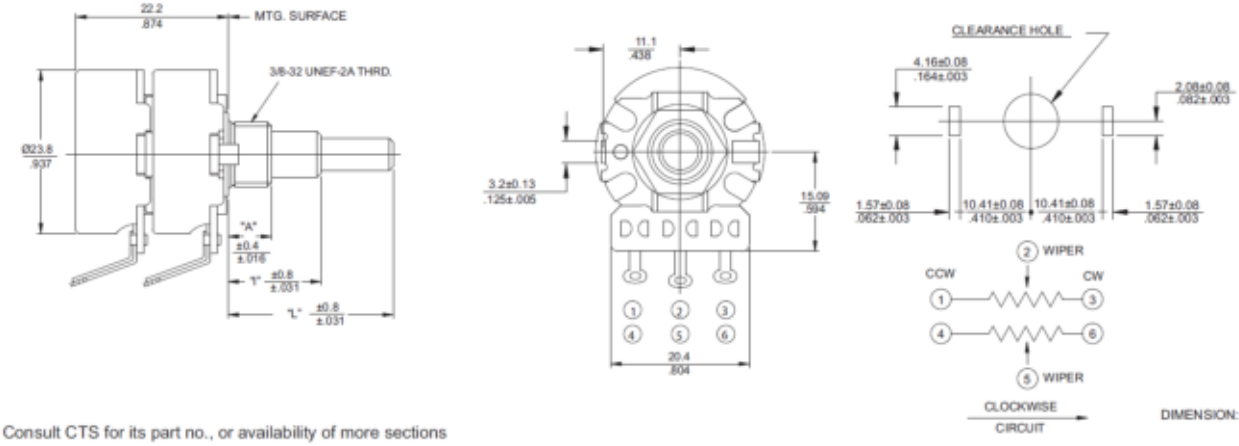
Series 450T-2 Metal Shaft, Dual Section, Bushing Mount, Solder Lug “T” Type Terminals



* Consult CTS for its part no. or availability of more sections

DIMENSION: mm / inch

Series 450T-C2 Concentric Metal Shaft, Dual Section, Bushing Mount, Solder Lug “T” Type Terminals



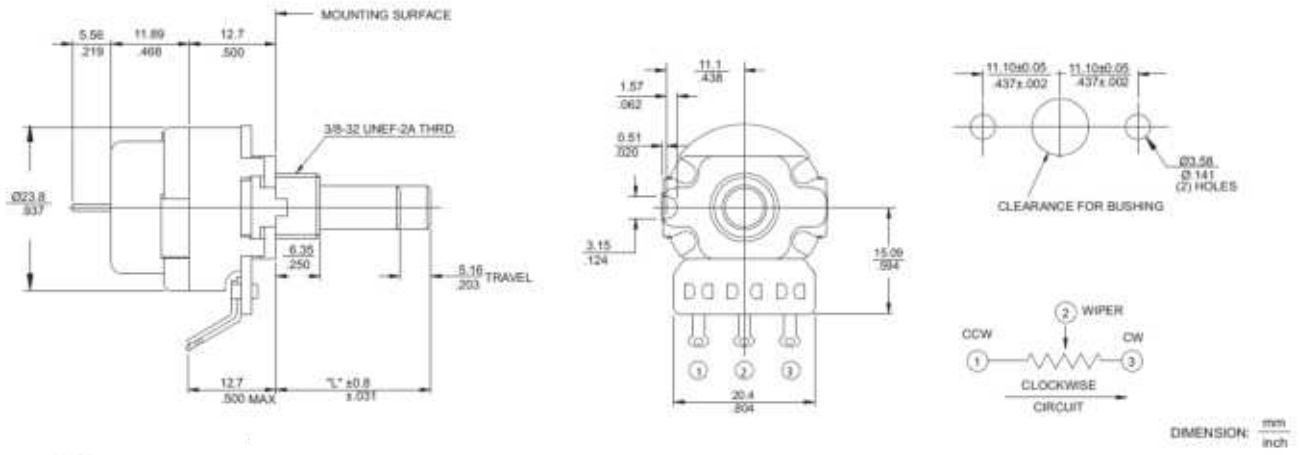
* Consult CTS for its part no., or availability of more sections

DIMENSION: mm / inch

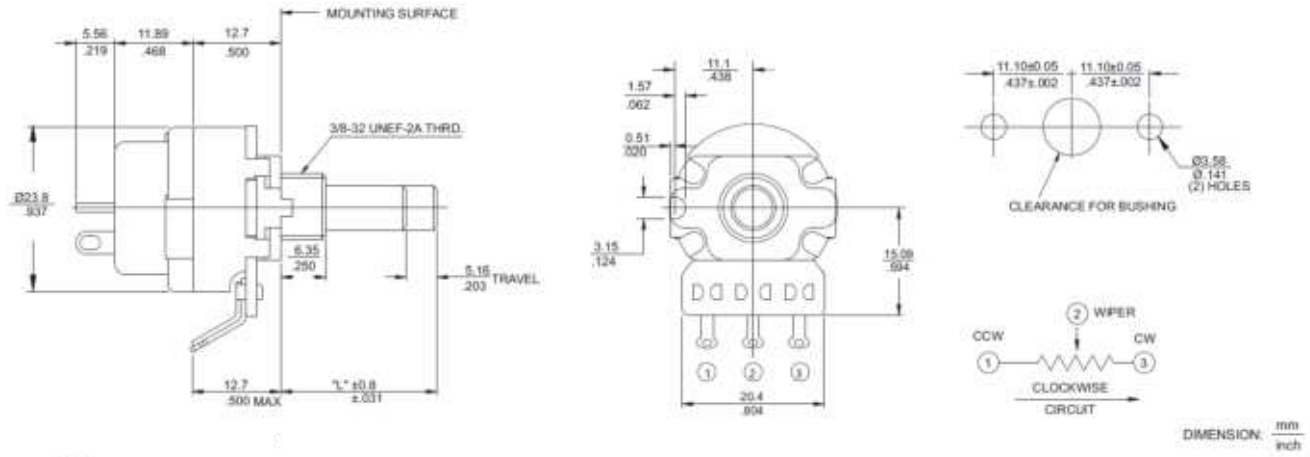
©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

Electrical and Mechanical Specifications

Series 450TM-x-G Molded Shaft, Bushing Mount, Solder Lug “T” Type Terminals, 040 Switch Option



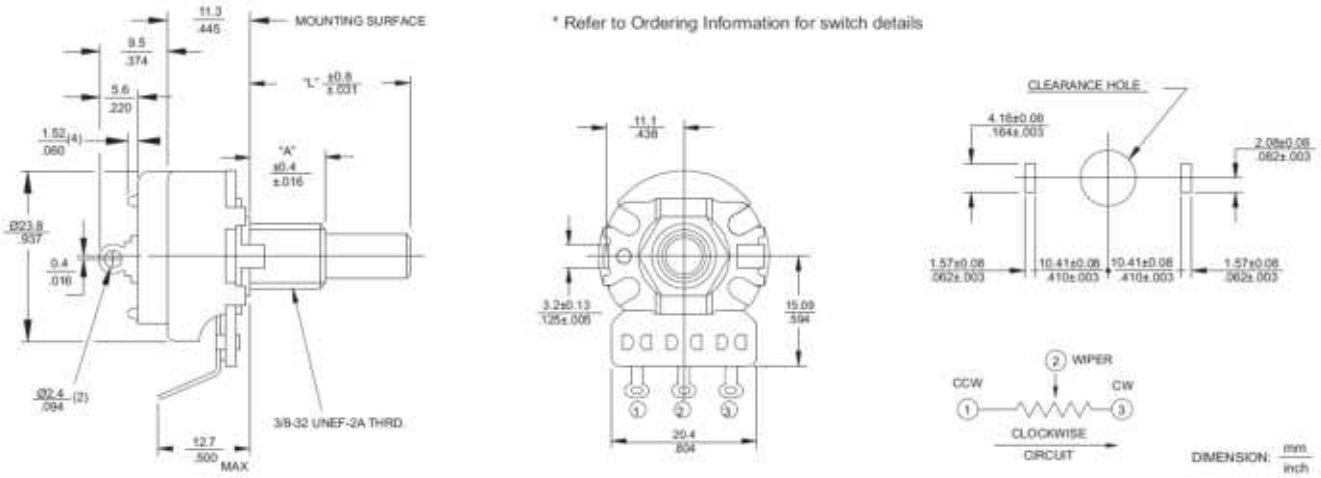
Series 450TM-x-H Molded Shaft, Bushing Mount, Solder Lug “T” Type Terminals, 041 Switch Option



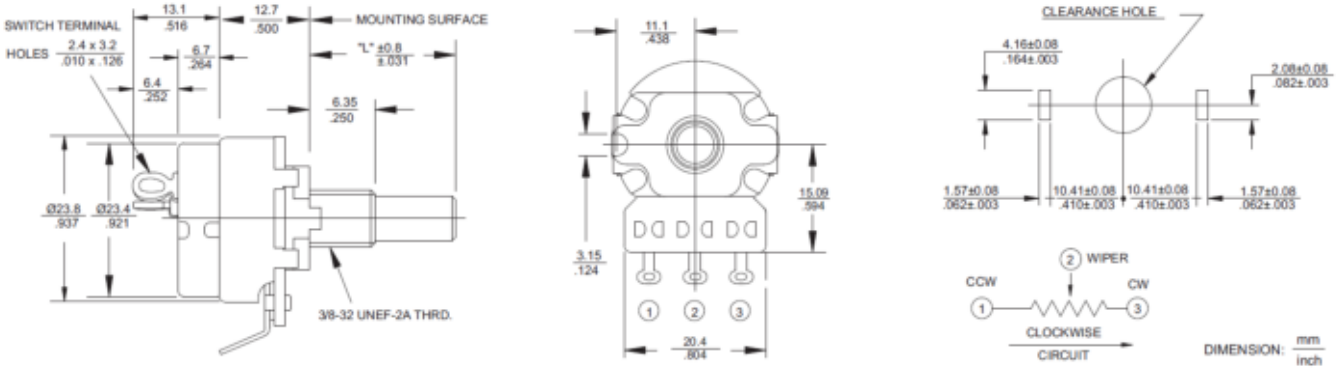
©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

Electrical and Mechanical Specifications

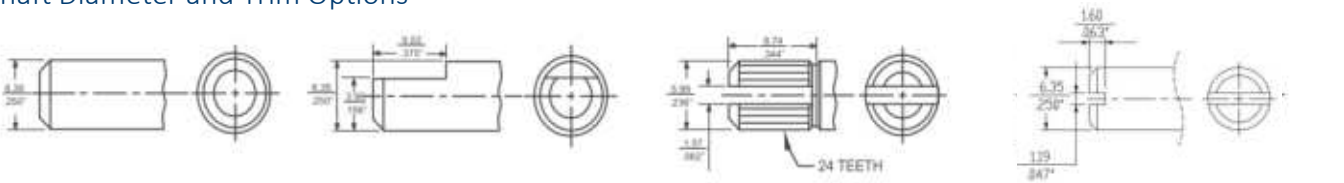
Series 450T-x-B Metal Shaft, Bushing Mount, Solder Lug “T” Type Terminals, 050 Switch Option



Series 450TM-x-C Metal Shaft, Bushing Mount, Solder Lug “T” Type Terminals, TGC Switch Option



Shaft Diameter and Trim Options



R – Round F – Flatted K – Split Knurl S – Slotted

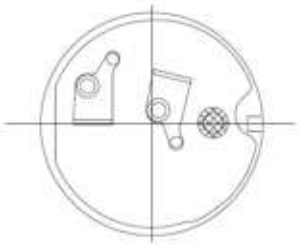
©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

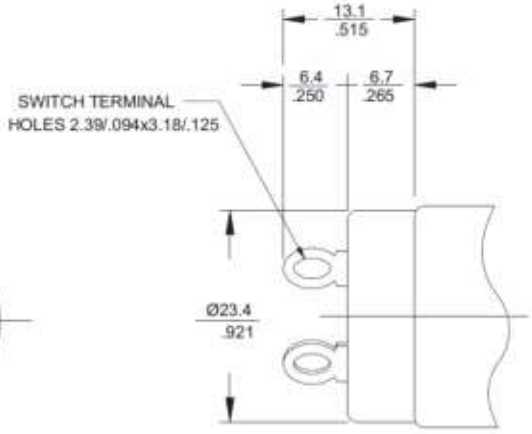
Optional Power Switches

Series	Contact Arrangement	Electrical Rating	Outline Drawing
FR-GC	SPST Rotary	3 amps @ 125 volts, 1 amp @ 250 volts AC CUL (E10412) Recognized	
GC	SPST Rotary	5 amps @ 20 volts DC (Automotive)	

Actuating Angle – 20°

Actuating Torque – 6 to 17 in.oz. (430 to 1225 gf.cm)





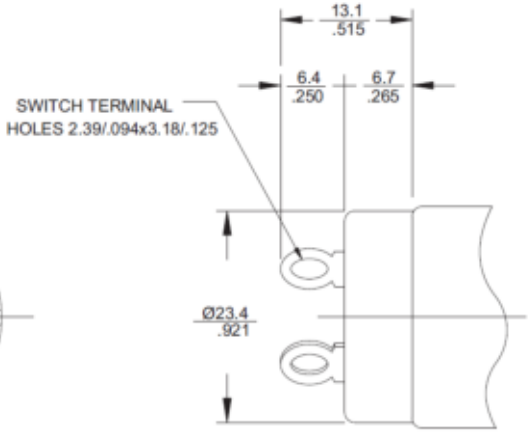
DIMENSION: mm / inch

TGC	SPST Rotary	6 amps @ 125 volts AC CUL (E10412) Recognized	

Actuating Angle – 20°

Actuating Torque – 6 to 17 in.oz. (430 to 1225 gf.cm)





DIMENSION: mm / inch

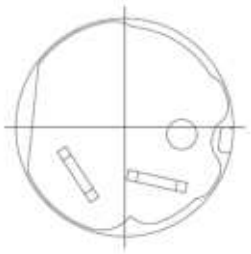
©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

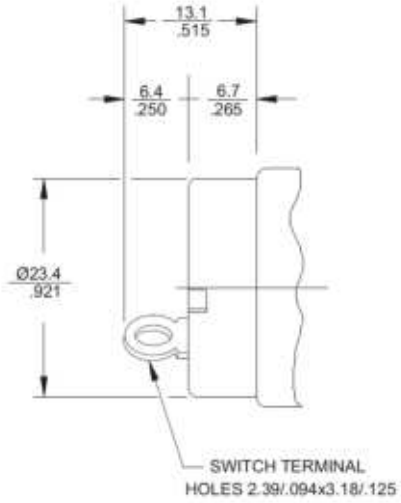
Optional Power Switches

Series	Contact Arrangement	Electrical Rating	Outline Drawing
TV-023	SPST Rotary	TV-5 rating CUL (E10412) Recognized	

Actuating Angle – 20°

Actuating Torque – 6 to 18 in.oz. (430 to 1300 gf.cm)



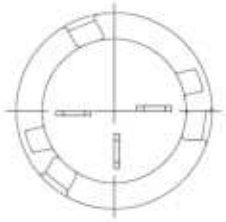


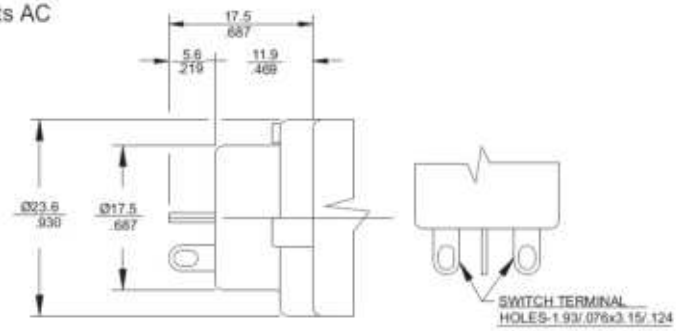
DIMENSION: mm / inch

041	SPDT Push-on Push-off	6 amps @ 125 volts AC	

Pre-travel 13/64" (5.2mm)

Activating Force: 2 to 5 lb (0.9 to 2.3 kgf)



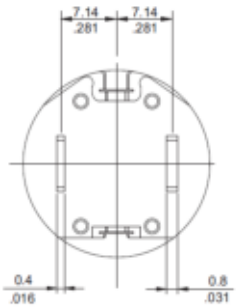


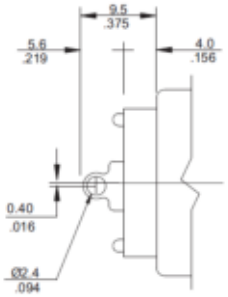
DIMENSION: mm / inch

050	SPST Rotary	3 amps @ 125 volts AC (Shallow construction switch) CUL (E10412) Recognized 7.5 amps @ 20 volts DC (Automotive)	

Actuating Angle: 25°

Actuating Torque: 2 to 15 in. oz. (144 to 1080 gf-cm)

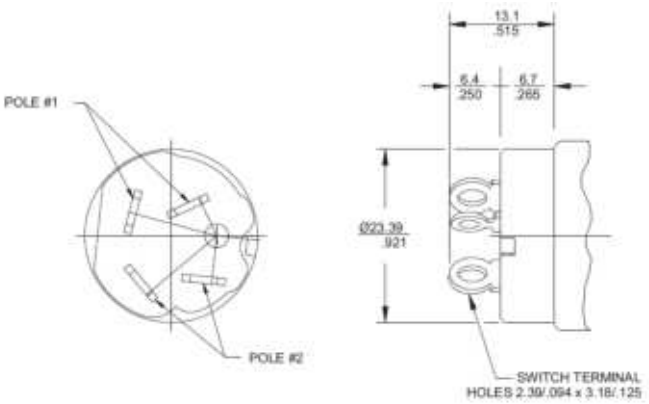
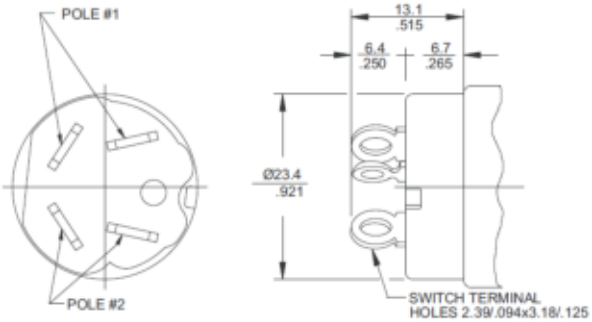
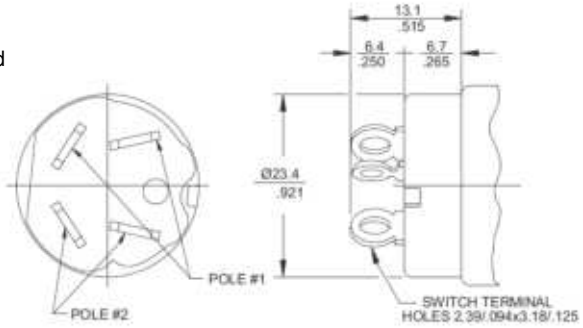




DIMENSION: mm / inch

©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

Optional Power Switches

Series	Contact Arrangement	Electrical Rating	Outline Drawing
FR-027	**DPST** Rotary	3 amps @ 125 volts, 1 amp @ 250 volts AC CUL (E10412) Recognized Actuating Angle: 20˚ Actuating Torque: 6 to 18 in.oz. (430 to 1300 gf.cm)	
TV-020	**DPST** Rotary	125 volts AC Pole #1, TV-1 rating Pole #2, TV-3 rating CUL (E10412) Recognized Actuating Angle: 20˚ Actuating Torque: 6 to 18 in.oz. (430 to 1300 gf.cm)	
TV-021	**SPDT** Rotary	TV-4 rating CUL (E10412) Recognized Actuating Angle: 20˚ Actuating Torque: 6 to 18 in.oz. (430 to 1300 gf.cm)	

DIMENSION: mm / inch

©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.

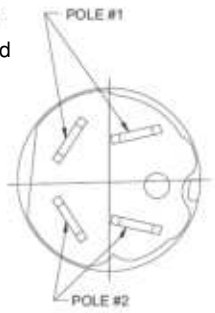
Optional Power Switches

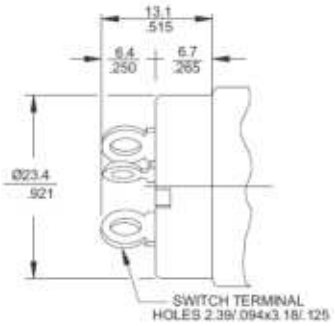
Series	Contact Arrangement	Electrical Rating	Outline Drawing

FR-028 **SPDT** Rotary

3 amps @ 125 volts AC
CUL (E10412) Recognized

Actuating Angle: 20°
Actuating Torque: 6 to 18 in.oz.
(430 to 1300 gf.cm)





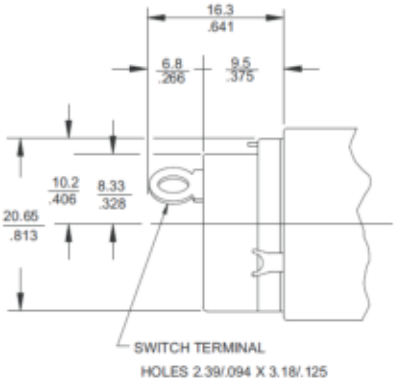
DIMENSION: mm / inch

FR-K **SPST** Pull-on Push-off

3 amps @ 125 volts AC
CUL (E10412) Recognized

Pre-travel: 5/32" (3.97mm)
Actuating force: 7 to 16 oz. - Single section control
(198 to 454 gf)
7 to 20 oz. - Tandem control
(198 to 567 gf)





DIMENSION: mm / inch

©2025 CTS® Corporation. Information/product(s) subject to change. No warranty that product(s) will meet the stated specifications for customer specific applications or test equipment. Visit www.ctscorp.com for list of applicable patent(s), more information, or to request a quote.