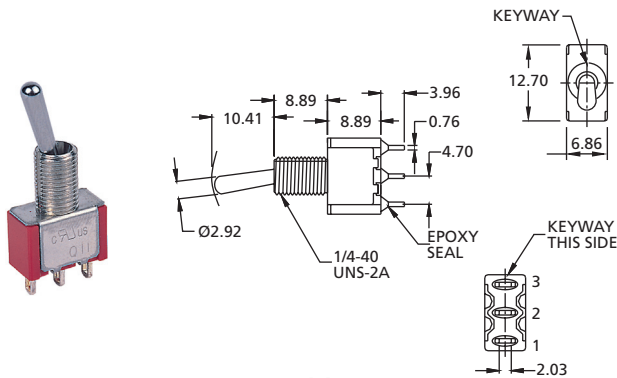


Toggle Switches

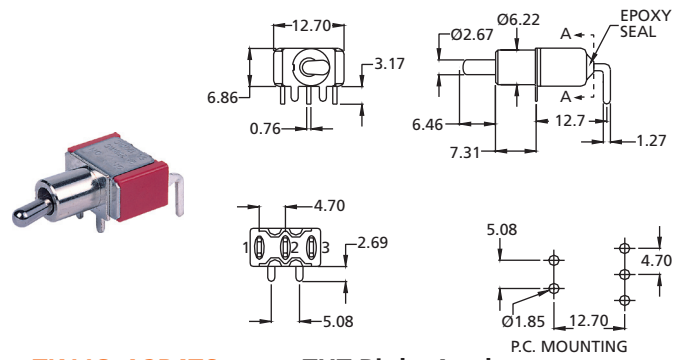
Miniature SPDT Toggle Switches

TK11 Series

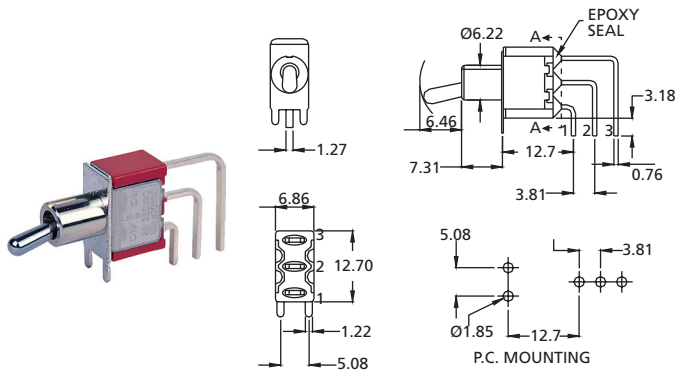
Toggle Switches



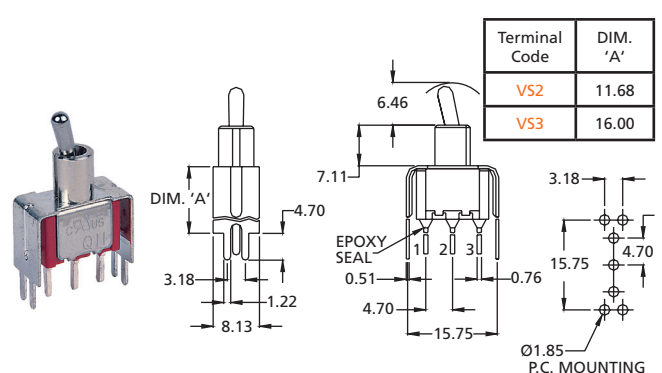
TK11S_A1B1T1 Solder Lug



TK11S_A2B4T6 THT Right Angle

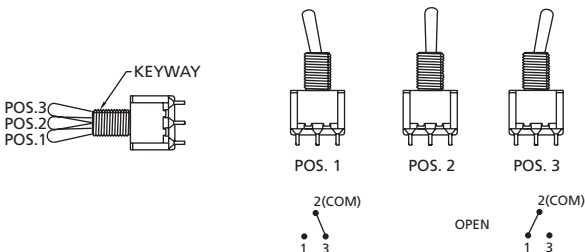


TK11S_A2B4T7 THT Vertical Right Angle



TK11S_A2B4VS with V-Bracket

Example Model Single Pole 3 Positions: 3-Way Wiring Diagram Schematics



Model No.	Position 1	Position 2	Position 3
TK11S1-TK11S2	2-3	N/A	2-1
TK11S3-TK11S5	2-3	OPEN	2-1

How to order:

TK11

- | | |
|---|---|
| <p>1 POLES & SWITCH FUNCTION:
S1 SP ON-NONE-ON
S2 SP ON-NONE-MOM
S3 SP ON-OFF-ON
S4 SP MOM-OFF-MOM
S5 SP ON-OFF-MOM</p> <p>2 ACTUATOR (Details see page A04):
A1 Height = 10.41 mm
A2 Height = 5.08 mm
A3 Height = 13.97 mm
A4 Height = 16.26 mm
A5 Height = 21.34 mm
A6 Height = 12.30 mm, flatted, anti-rotation
A61 Height = 21.00 mm, flatted, anti-rotation
A62 Height = 13.49 mm, lever handle with cap
A7 Height = 12.37 mm, 15/32 bushing
A8 Height = 17.56 mm, 15/32 bushing
AA Height = 26.30 mm, lever handel with cap, 15/32 bushing
A11 Height = 11.80 mm, plastic
AL1 Height = 16.00 mm, locking lever
AL2 Height = 16.26 mm, locking lever</p> <p>3 BUSHING (Details see page A04):
B1 Height = 8.89 mm, keyway (thd standard)
B2 Height = 8.89 mm, keyway (non-thd)
B3 Height = 7.10 mm, keyway (thd)
B4 Height = 7.10 mm, keyway (non-thd)
B5 Height = 7.52 mm, flat (torque)
B6 Height = 8.00 mm, keyway (torque)
B7 Height = 8.89 mm, flat (thd standard)
B8 Height = 8.89 mm, keyway (metric thd)
B9 Height = 7.52 mm, flat (splash proof)
B11 Height = 7.55 mm, keyway (thd standard)
B12 Height = 7.55 mm, keyway (non-thd)
B13 Height = 11.38 mm, keyway (15/32 bushing)
B15 Height = 7.55 mm, flat (thd standard)
B16 Height = 7.55 mm, flat (non-thd)</p> | <p>4 TERMINALS (Details see page A04):
T1 Solder Lug
T2 PC Thru Hole
T3 Quick Connect
T5-1 Wire Wrap, Length = 18.70 mm
T5-2 Wire Wrap, Length = 24.20 mm
T5-3 Wire Wrap, Length = 10.55 mm
T5-4 Wire Wrap, Length = 26.97 mm
T6 PC Thru Hole, Right Angle
T6N PC Thru Hole, Right Angle, Snap-in
T7 PC Thru Hole, Vertical Right Angle
VS2 V-Bracket, Height = 11.68 mm
V2N Snap-in V-Bracket, Height = 11.68 mm
VS3 V-Bracket, Height = 16.00 mm
VS4 V-Bracket, Height = 11.68 mm
VS5 V-Bracket, Height = 16.00 mm</p> <p>5 CONTACT MATERIAL:
AG Silver
AU Gold
UT Gold, Tin-Lead
GT Silver, Tin-Lead
UG Gold over Silver
UGT Gold over Silver, Tin-Lead</p> <p>6 SEAL:
E Epoxy (Standard)
N No Epoxy</p> <p>7 ROHS & LEAD FREE:
blank RoHS Compliant (Standard)
V RoHS Compliant & Lead Free</p> |
|---|---|

General Specifications:

MATERIALS

- » Movable Contact & Fixed Terminals:
AG, GT, UG & UGT: Silver plated over copper alloy
AU & UT: Gold over nickel plated over copper alloy

MECHANICAL

- » Operating Temperature: -30°C to +85°C
- » Mechanical Life: 40,000 cycles

CONTACT RATING

- » AG, GT, UG & UGT: 5A120VAC/28VDC
2A250VAC
- » AU & UT: 0.4VA max. 20V max. (AC/DC)

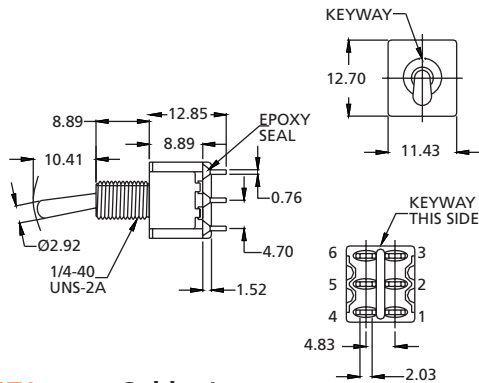
ELECTRICAL

- » Contact Resistance: 10mΩ max. initial @ 2-4VDC
100mA for silver & gold plated contacts
- » Insulation Resistance: 1,000MΩ min.

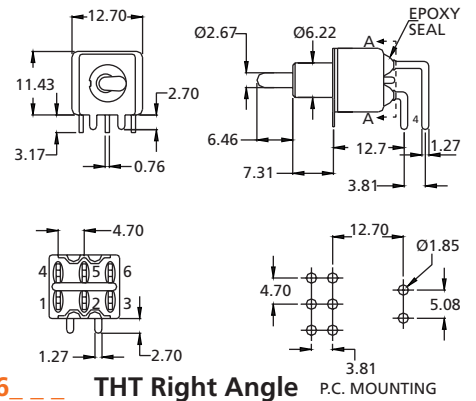
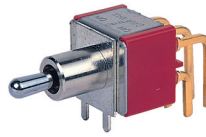
Toggle Switches

Miniature DPDT Toggle Switches

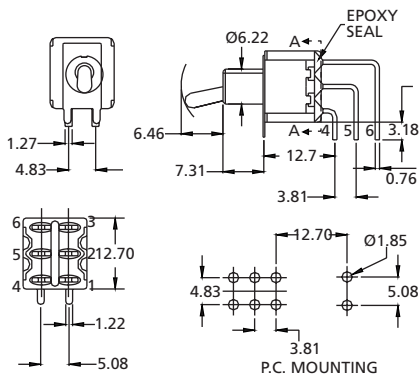
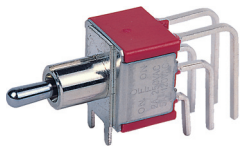
TK12 Series



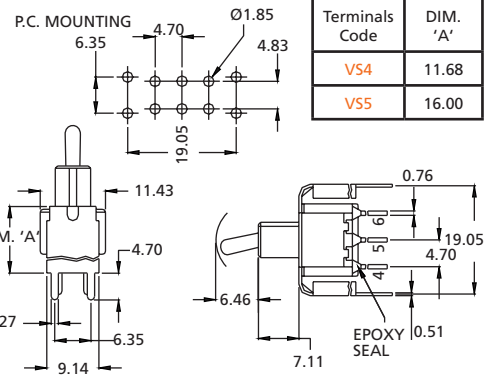
TK12D_A1B1T1 Solder Lug



TK12D_A2B4T6 THT Right Angle P.C. MOUNTING



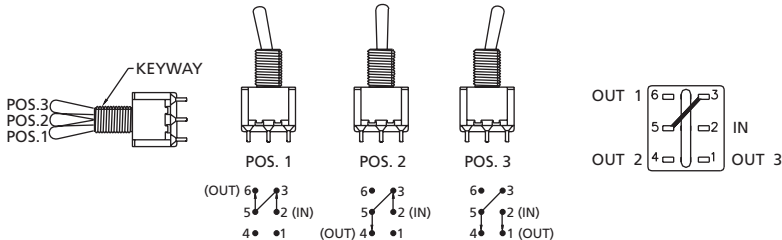
TK12D_A2B4T7 THT Vertical Right Angle P.C. MOUNTING



TK12D_A2B4VS with V-Bracket P.C. MOUNTING

Terminals Code	DIM. 'A'
V54	11.68
V55	16.00

Example Model Double Poles 3 Positions: 3-Way Wiring Diagram Schematics



Model No.	Position 1	Position 2	Position 3
TK12D1-TK12D2		N/A	
TK12D3-TK12D5		OPEN	
TK12D6-TK12D8			

How to order:



- | | |
|---|--|
| <p>1 POLES & SWITCH FUNCTION:
 D1 DP ON-NONE-ON
 D2 DP ON-NONE-MOM
 D3 DP ON-OFF-ON
 D4 DP MOM-OFF-MOM
 D5 DP ON-OFF-MOM
 D6 DP ON-ON-ON
 D7 DP MOM-ON-MOM
 D8 DP ON-ON-MOM</p> <p>2 ACTUATOR (Details see page A04):
 A1 Height = 10.41 mm
 A2 Height = 5.08 mm
 A3 Height = 13.97 mm
 A4 Height = 16.26 mm
 A5 Height = 21.34 mm
 A6 Height = 12.30 mm, flattened, anti-rotation
 A61 Height = 21.00 mm, flattened, anti-rotation
 A62 Height = 13.49 mm, lever handle with cap
 A7 Height = 12.37 mm, 15/32 bushing
 A8 Height = 17.56 mm, 15/32 bushing
 AA Height = 26.30 mm, with cap, 15/32 bushing
 A11 Height = 11.80 mm, plastic
 AL1 Height = 16.00 mm, locking lever
 AL2 Height = 16.26 mm, locking lever</p> <p>3 BUSHING (Details page A04):
 B1 Height = 8.89 mm, keyway (thd standard)
 B2 Height = 8.89 mm, keyway (non-thd)
 B3 Height = 7.10 mm, keyway (thd)
 B4 Height = 7.10 mm, keyway (non-thd)
 B5 Height = 7.52 mm, flat (torque)
 B6 Height = 8.00 mm, keyway (torque)
 B7 Height = 8.89 mm, flat (thd standard)
 B8 Height = 8.89 mm, keyway (metric thd)
 B9 Height = 7.52 mm, flat (splash proof)
 B11 Height = 7.55 mm, keyway (thd standard)
 B12 Height = 7.55 mm, keyway (non-thd)
 B13 Height = 11.38 mm, keyway (15/32 bushing)</p> | <p>B15 Height = 7.55 mm, flat (thd standard)
 B16 Height = 7.55 mm, flat (non-thd)
 B17 Height = 3.50 mm, keyway
 B18 Height = 11.38 mm, keyway (15/32 bushing) with teflon insert
 B20 Height = 11.38 mm, keyway (15/32 bushing)
 B25 Height = 8.00 mm, keyw., locking lever (thd)
 B26 Height = 8.00 mm, keyw., locking lever (non-thd)</p> <p>4 TERMINALS (Details see page A04):
 T1 Solder Lug
 T2 PC Thru Hole
 T3 Quick Connect
 T5-1 Wire Wrap, Length = 18.70 mm
 T5-2 Wire Wrap, Length = 24.20 mm
 T5-3 Wire Wrap, Length = 10.55 mm
 T5-4 Wire Wrap, Length = 26.97 mm
 T6 PC Thru Hole, Right Angle
 T6N PC Thru Hole, Right Angle, Snap-in
 T7 PC Thru Hole, Vertical Right Angle
 V2 V-Bracket, Height = 11.68 mm
 V2N Snap-in V-Bracket, Height = 11.68 mm
 V3 V-Bracket, Height = 16.00 mm
 V4 V-Bracket, Height = 11.68 mm
 V5 V-Bracket, Height = 16.00 mm</p> <p>5 CONTACT MATERIAL:
 AG Silver
 AU Gold
 UT Gold, Tin-Lead
 GT Silver, Tin-Lead
 UG Gold over Silver
 UGT Gold over Silver, Tin-Lead
 6 SEAL:
 N Epoxy (Standard)
 V No Epoxy
 7 ROHS & LEAD FREE:
 blank RoHS Compliant (Standard)
 V RoHS Compliant & Lead Free</p> |
|---|--|

General Specifications:

MATERIALS

- » Movable Contact & Fixed Terminals:
AG, GT, UG & UGT: Silver plated over copper alloy
AU & UT: Gold over nickel plated over copper alloy

MECHANICAL

- » Operating Temperature: -30°C to +85°C
- » Mechanical Life: 40,000 cycles

CONTACT RATING

- » AG, GT, UG & UGT: 5A120VAC/28VDC
2A250VAC
- » AU & UT: 0.4VA max. 20V max. (AC/DC)

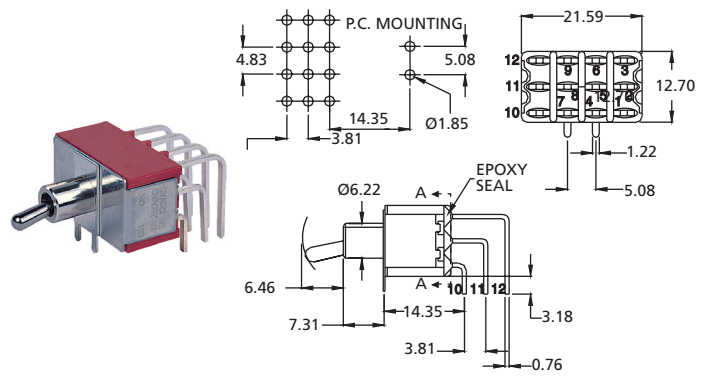
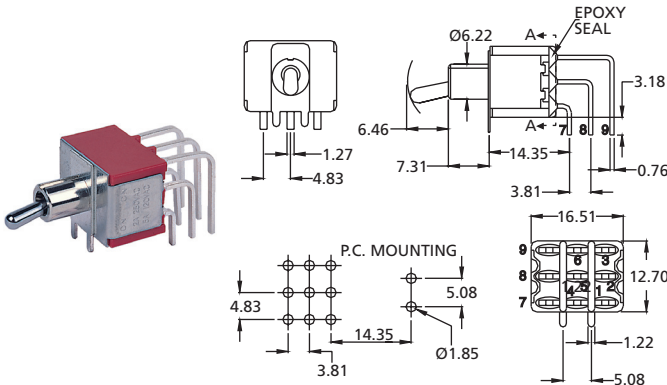
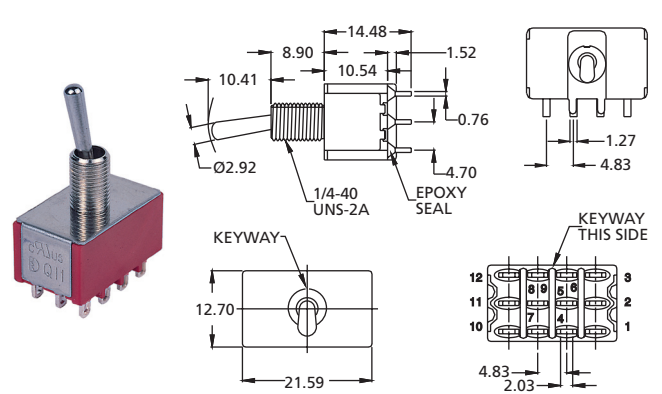
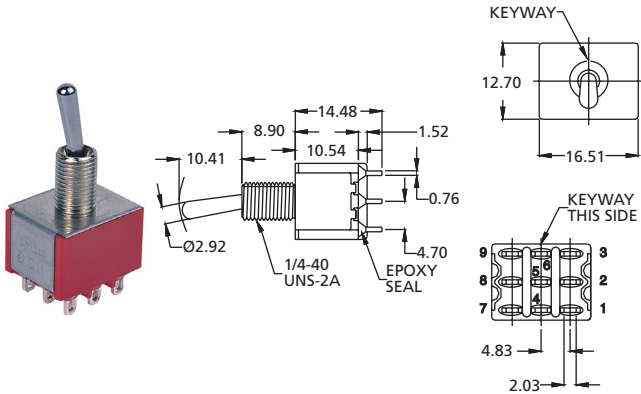
ELECTRICAL

- » Contact Resistance: 10mΩ max. initial @ 2-4VDC
100mA for silver & gold plated contacts
- » Insulation Resistance: 1,000MΩ min.

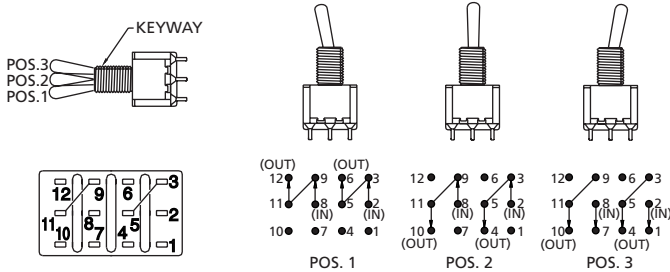
Toggle Switches

Miniature 3PDT & 4PDT Toggle Switches

TK13 Series



Example Model 4 Poles 3 Positions: 3-Way Wiring Diagram Schematics



Model No.	Position 1	Position 2	Position 3
TK1331~TK1332		N/A	2-1,5-4,8-7
TK1333~TK1335	2-3,5-6,8-9	OPEN	
TK1341~TK1342		N/A	2-1,5-4,8-7,11-10
TK1343~TK1345	2-3,5-6, 8-9,11-12	OPEN	
TK1346~TK1348		2-3,5-4,8-9,11-10	

How to order:

TK13

- 1 POLES & SWITCH FUNCTION:**
- T1 3P ON-NONE-ON T2 3P ON-NONE-MOM
- T3 3P ON-OFF-ON T4 3P MOM-OFF-MOM
- T5 3P ON-OFF-MOM F1 4P ON-NONE-ON
- F2 4P ON-NONE-MOM F3 4P ON-OFF-ON
- F4 4P MOM-OFF-MOM F5 4P ON-OFF-MOM
- F6 4P ON-ON-ON F7 4P MOM-ON-MOM
- F8 4P ON-ON-MOM

- 2 ACTUATOR (Details see page A04):**
- A1 Height = 10.41 mm
- A2 Height = 5.08 mm
- A3 Height = 13.97 mm
- A4 Height = 16.26 mm
- A5 Height = 21.34 mm
- A6 Height = 12.30 mm, flatted, anti-rotation
- A61 Height = 21.00 mm, flatted, anti-rotation
- A62 Height = 13.49 mm, lever handle with cap
- A7 Height = 12.37 mm, 15/32 bushing
- A8 Height = 17.56 mm, 15/32 bushing
- AA Height = 26.30 mm, lever handle with cap, 15/32 bushing
- AL1 Height = 11.80 mm, plastic
- AL2 Height = 16.00 mm, locking lever
- AL3 Height = 16.26 mm, locking lever

- 3 BUSHING (Details see page A04):**
- B1 Height = 8.89 mm, keyway (thd standard)
- B2 Height = 8.89 mm, keyway (non-thd)
- B3 Height = 7.10 mm, keyway (thd)
- B4 Height = 7.10 mm, keyway (non-thd)
- B5 Height = 7.52 mm, flat (torque)
- B6 Height = 8.00 mm, keyway (torque)
- B7 Height = 8.89 mm, flat (thd standard)
- B8 Height = 8.89 mm, keyway (metric thd)
- B9 Height = 7.52 mm, flat (splash proof)

- B11** Height = 7.55 mm, keyway (thd standard)
- B12** Height = 7.55 mm, keyway (non-thd)
- B13** Height = 11.38 mm, keyway (15/32 bushing)
- B15** Height = 7.55 mm, flat (thd standard)
- B16** Height = 7.55 mm, flat (non-thd)
- B17** Height = 3.50 mm, keyway
- B18** Height = 11.38 mm, keyway (15/32 bushing) with teflon insert
- B20** Height = 11.38 mm, keyway (15/32 bushing)
- B25** Height = 8.00 mm, keyw., locking lever (thd)
- B26** Height = 8.00 mm, keyw., locking lever (non-thd)

- 4 TERMINALS (Details see page A04):**
- T1 Solder Lug
- T2 PC Thru Hole
- T3 Quick Connect
- T5-1 Wire Wrap, Length = 18.70 mm
- T5-2 Wire Wrap, Length = 24.20 mm
- T5-3 Wire Wrap, Length = 10.55 mm
- T5-4 Wire Wrap, Length = 26.97 mm
- T6 PC Thru Hole, Right Angle
- T6N PC Thru Hole, Right Angle, Snap-in
- T7 PC Thru Hole, Vertical Right Angle
- V2N Snap-in V-Bracket, Height = 11.68 mm
- V3 V-Bracket, Height = 16.00 mm
- V4 V-Bracket, Height = 11.68 mm
- V5 V-Bracket, Height = 16.00 mm

- 5 CONTACT MATERIAL:**
- AG Silver
- AU Gold
- UT Gold, Tin-Lead
- GT Silver, Tin-Lead
- UG Gold over Silver
- UGT Gold over Silver, Tin-Lead

General Specifications:

MATERIALS

- » Movable Contact & Fixed Terminals:
AG, GT, UG & UGT: Silver plated over copper alloy
AU & UT: Gold over nickel plated over copper alloy

MECHANICAL

- » Operating Temperature: -30°C to +85°C
- » Mechanical Life: 40,000 cycles

CONTACT RATING

- » AG, GT, UG & UGT: 5A120VAC/28VDC
2A250VAC
- » AU & UT: 0.4VA max. 20V max. (AC/DC)

ELECTRICAL

- » Contact Resistance: 10mΩ max. initial @ 2-4VDC
100mA for silver & gold plated contacts
- » Insulation Resistance: 1,000MΩ min.

- 6 SEAL:**
E Epoxy (Standard)
N No Epoxy

- 7 ROHS & LEAD FREE:**
blank RoHS Compliant (Standard)
V RoHS Compliant & Lead Free

Toggle Switches

Additional Informations for TK11, 12 & 13 Series

ACTUATOR OPTIONS

<p>TOGGLE CAP</p> <p>A1: No Cap (Standard) A1A: Black Plastic A1B: White Plastic A1C: Red Plastic A1D: Orange Plastic A1E: Yellow Plastic A1F: Green Plastic A1G: Blue Plastic A1K: Brown Plastic A1H: Gray Plastic</p>	<p>TOGGLE CAP</p> <p>A2: No Cap (Standard) A2A: Black Plastic A2B: White Plastic A2C: Red Plastic A2D: Orange Plastic A2E: Yellow Plastic A2F: Green Plastic A2G: Blue Plastic A2K: Brown Plastic A2H: Gray Plastic</p>				
A1(Standard)	A2	A3 A4 A5			
Actuators A1~A5: Shown with standard B1 bushing; +1.78mm for B3 bushing; -0.51mm for B6 bushing.					
A6	A61	A62	A7	A8	A9
Actuators A6, A61 & A62: Flatted with Antirotation; Use with bushings B11, B12, B15 & B16 only.			Actuators A7 & A8: Use with B13 bushing; Use with B18 & B20, the lever is antirotation.		Actuator A9: B1/B2 bushing standard; with black & red color only.
<p>BLACK PLASTIC</p>	<p>TOGGLE CAP</p> <p>A11: No Cap (Standard) A11A: Black Plastic A11B: White Plastic A11C: Red Plastic A11D: Orange Plastic A11E: Yellow Plastic A11F: Green Plastic A11G: Blue Plastic A11K: Brown Plastic A11H: Gray Plastic</p>				
AA	A11	AL1	AL2		
Actuator AA: Use with B18 bushing only.	Actuators A11: Shown with standard B1 bushing; +1.78mm for B3 bushing; -0.51mm for B6 bushing; Standard for T1 & T2 terminal; -0.40mm for T6, T7 & VS2.				

BUSHING OPTIONS

B1 (THD STD) B2 (Non-THD)	B3 (THD STD) B4 (Non-THD)	B5 (High Torque)	B6 (High Torque)	B7 (THD STD)	B8 (Metric THD)	B11 (THD) B12 (Non-THD)	B15 (THD) B16 (Non-THD)
	B4 is standard for terminals T6, T7, VS.					B11, B12, B15 & B16: Use with actuator A6 only	
B9 (Splash Proof)	O-ring A O-ring B supplied with B9 bushing	B17	B13	B18	B20		
		B13: Use with actuators A7 & A8 only; Bear strength from top of actuator up to 10kg aside up to 15kg. B18: Use with actuators A7, A8 & A10 only; With plastic (teflon) insert; Bear strength from top of actuator up to 20kg aside up to 15kg. B20: Use with actuators A7, A8 & A10 only; Bear strength from top of actuator up to 20kg aside up to 15kg.					

TERMINAL OPTIONS

T1 Solder Lug	T2 THT	T3 Quick Connect	T5 Wire Wrap	T6N Right Angle, Snap-in, THT	V2N Snap-in, V-Bracket