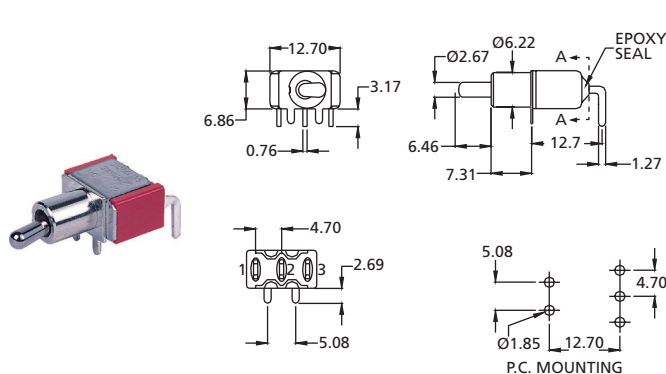
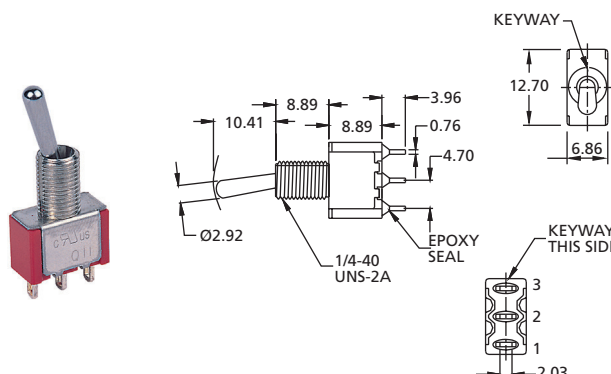


Toggle Switches

Miniature SPDT Toggle Switches

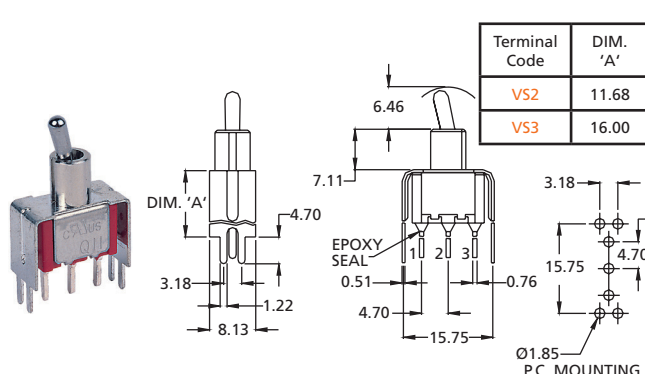
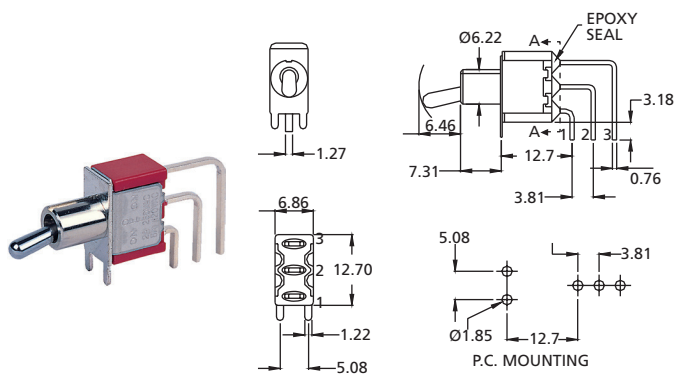
TK11 Series

Toggle Switches



TK11S_A1B1T1 Solder Lug

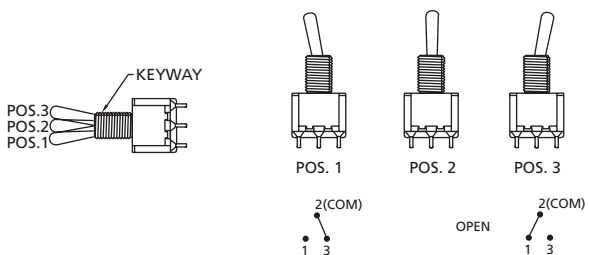
TK11S_A2B4T6 THT Right Angle



TK11S_A2B4T7 THT Vertical Right Angle

TK11S_A2B4VS with V-Bracket

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



Terminal Code	DIM. 'A'
VS2	11.68
VS3	16.00

How to order:

TK11

- 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
- 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
- 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)
- 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
- 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:**
 - E Epoxy (Standard)
 - N No Epoxy
- 7 ROHS & LEAD FREE:**
 - blank RoHS Compliant (Standard)
 - V RoHS Compliant & Lead Free

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

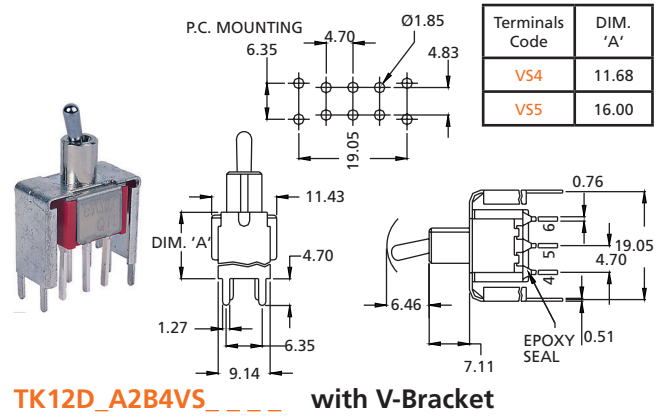
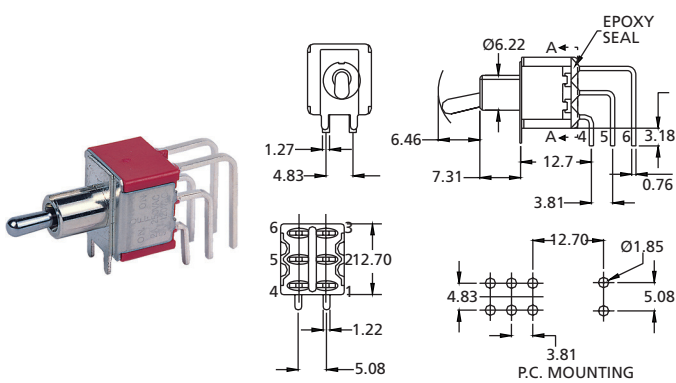
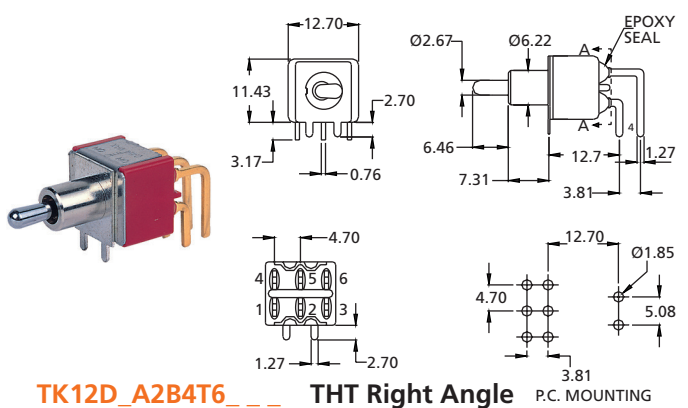
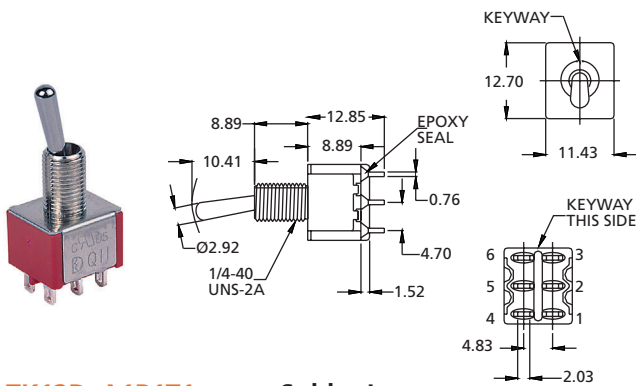
- » Contact Resistance: 10mΩ max. initial @ 2-4VDC
100mA for silver & gold plated contacts
- » Insulation Resistance: 1,000MΩ min.

All specifications are restricted to QA test criteria.
DRW: D.L. JIN, CHK: D.F. LEE, APP: H.Z. QIU

Toggle Switches

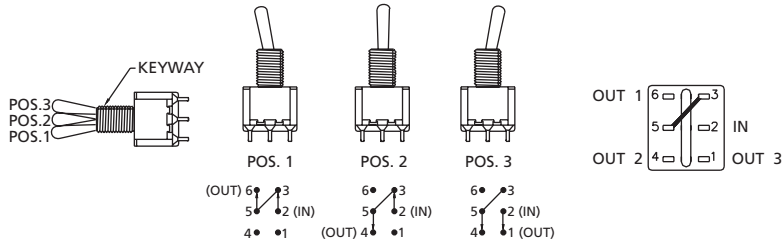
Miniature DPDT Toggle Switches

TK12 Series



Terminals Code	DIM. 'A'
VS4	11.68
VS5	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:

TK12

- 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
- 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, 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
- 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)
- 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
- 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:**
 - E Epoxy (Standard)
 - N No Epoxy
- 7 ROHS & LEAD FREE:**
 - blank RoHS Compliant (Standard)
 - V RoHS Compliant & Lead Free

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

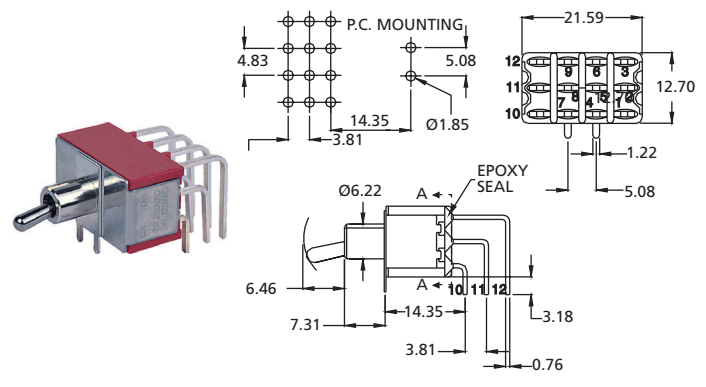
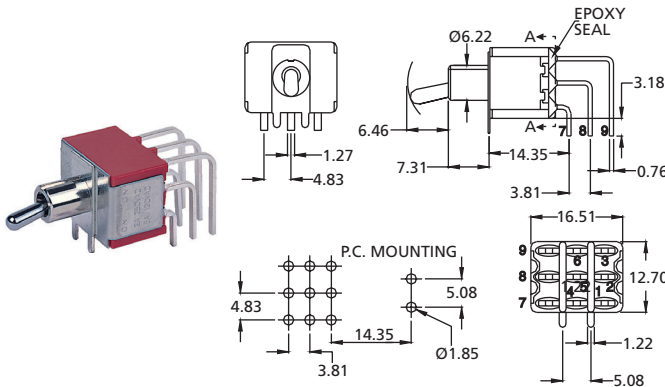
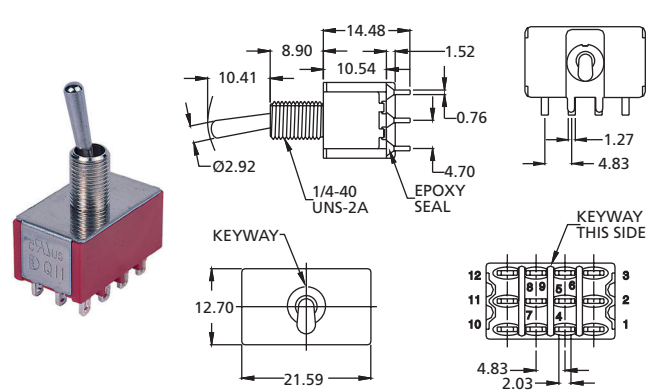
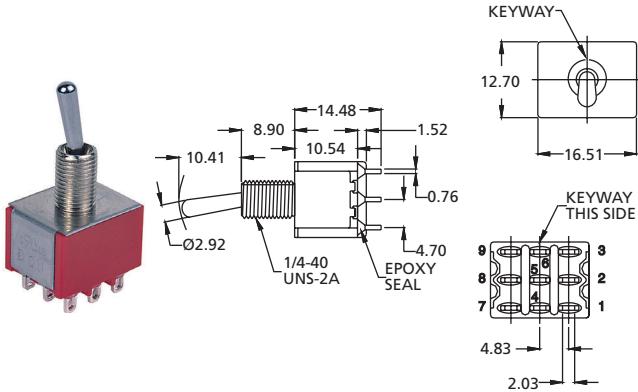
- » Contact Resistance: 10mΩ max. initial @ 2-4VDC
100mA for silver & gold plated contacts
- » Insulation Resistance: 1,000MΩ min.

Toggle Switches

Miniature 3PDT & 4PDT Toggle Switches

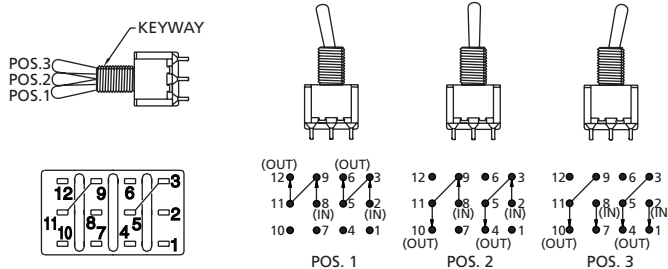
TK13 Series

Toggle Switches



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

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	2-1,5-4,8-7
TK1341-TK1342		N/A	2-1,5-4,8-7,11-10
TK1343-TK1345	2-3,5-6, 8-9,11-12	OPEN	2-1,5-4,8-7,11-10
TK1346-TK1348		2-3,5-4,8-9,11-10	

How to order:

TK13

- 1 POLES & SWITCH FUNCTION:**
- T1 3P ON-NONE-ON
 - T3 3P ON-OFF-ON
 - T5 3P ON-OFF-MOM
 - F2 4P ON-NONE-MOM
 - F4 4P MOM-OFF-MOM
 - F6 4P ON-ON-ON
 - F8 4P ON-ON-MOM
 - T2 3P ON-NONE-MOM
 - T4 3P MOM-OFF-MOM
 - F1 4P ON-NONE-ON
 - F3 4P ON-OFF-ON
 - F5 4P ON-OFF-MOM
 - F7 4P MOM-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 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
- 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
 - V2 Snap-in V-Bracket, Height = 11.68 mm
 - V2S 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 blank v ROHS & LEAD FREE:**
- v RoHS Compliant (Standard)
 - v RoHS Compliant & Lead Free

Toggle Switches

Additional Informations for TK11, 12 & 13 Series

ACTUATOR OPTIONS

<p>TOGGLE CAP</p> <ul style="list-style-type: none"> 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>TOGGLE CAP</p> <ul style="list-style-type: none"> 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 				
A1(Standard)	A2	A3	A4	A5	
Actuators A1-A5: Shown with standard B1 bushing; +1.78mm for B3 bushing; -0.51mm for B6 bushing.					
					<p>Gloss Finish Plastic Chrome Finish</p>
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> <ul style="list-style-type: none"> 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>16.00 14.40 8.00 1.40 1/4-40 UNS-2A</p> <p>16.26 14.73 8.00 1.40 1/4-40 UNS-2A</p>		<p>2 positions lock 3 positions lock</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

<p>1/4-40 UNS-2A</p>	<p>1/4-40 UNS-2A</p>	<p>1/4-40 UNS-2A</p>	<p>1/4-40 UNS-2A</p>	<p>1/4-40 UNS-2A</p>	<p>1/4-40 UNS-2A M6P 0.75 THD</p>	<p>1/4-40 UNS-2A</p>	<p>1/4-40 UNS-2A</p>
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			
<p>1/4-40 UNS-2A</p> <p>SEALS</p>	<p>O-ring A O-ring B supplied with B9 bushing</p>		<p>1/4-40 UNS-2A</p>	<p>12/32-32 UNS-2A</p>	<p>12/32-32 UNS-2A</p> <p>TEFLON</p>	<p>12/32-32 UNS-2A</p>	
B9 (Splash Proof)			B17	B13	B18	B20	
<p>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.</p>							

TERMINAL OPTIONS

		<p>EPOXY SEAL</p>	<p>Length</p>		
T1 Solder Lug	T2 THT	T3 Quick Connect	T5 Wire Wrap	T6N Right Angle, Snap-in, THT	V2N Snap-in, V-Bracket