

FEATURES

- RoHS and Lead-Free compliance
- Wide variety of switching functions: SPDT, DPDT
- Vertical, right angle and vertical right angle mounting brackets
- Customization available

RS PRO Miniature Toggle Switches

RS Stock No.: 209935, 2099372, 2099366, 2099363, 2099360, 2099354, 2099364, 2099373, 2099358, 2099365, 2099356, 2099367, 2099374, 2099357, 2099352, 2099369, 2099370, 2099351, 2099375, 2099359, 2099371, 2099368, 2099362



RS Professionally Approved Products bring to you professional quality parts across all product categories. Our product range has been tested by engineers and provides a comparable quality to the leading brands without paying a premium price.

Miniature Toggle Switches

Similar Products

Stock No.	Brand	Switch Function	Terminal Type	Terminal Plating	Actuator Type	Bushing Type
2099360	RS PRO	SP ON-NONE-ON	Solder Lug	SILVER	9.40 High	5.59 High, Flat (thd)
2099362	RS PRO	SP ON-NONE-ON	PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099363	RS PRO	SP ON-NONE-ON	Right Angle PC thru-hole	GOLD	10.41 High	5.59 High, Flat (no-thd)
2099364	RS PRO	SP ON-NONE-ON	Right Angle PC thru-hole	GOLD	7.37 High	5.59 High, Flat (thd)
2099365	RS PRO	SP ON-NONE-ON	PC thru-hole	GOLD	10.41 High	6.60 High, Keyway (thd)
2099366	RS PRO	SP ON-NONE-(ON)	Solder Lug	SILVER	9.40 High	5.59 High, Flat (thd)
2099367	RS PRO	SP ON-NONE-(ON)	PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099368	RS PRO	SP ON-NONE-(ON)	Right Angle PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099369	RS PRO	SP ON-NONE-(ON)	PC thru-hole	GOLD	10.41 High	6.60 High, Keyway (thd)
2099370	RS PRO	SP ON-OFF-ON	Solder Lug	SILVER	9.40 High	5.59 High, Flat (thd)
2099371	RS PRO	SP ON-OFF-ON	PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099372	RS PRO	SP ON-OFF-ON	Right Angle PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099373	RS PRO	SP (ON)-OFF-(ON)	PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099374	RS PRO	SP (ON)-OFF-(ON)	Right Angle PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099375	RS PRO	SP ON-OFF-(ON)	PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099351	RS PRO	DP ON-NONE-ON	Solder Lug	SILVER	9.40 High	5.59 High, Flat (thd)
2099352	RS PRO	DP ON-NONE-ON	Right Angle PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099353	RS PRO	DP ON-NONE-ON	Right Angle PC thru-hole	GOLD	7.37 High	5.59 High, Flat (thd)
2099354	RS PRO	DP ON-NONE-ON	PC thru-hole	GOLD	10.41 High	6.60 High, Keyway (thd)
2099356	RS PRO	DP ON-NONE-(ON)	Solder Lug	SILVER	9.40 High	5.59 High, Flat (thd)
2099357	RS PRO	DP ON-OFF-ON	Solder Lug	SILVER	9.40 High	5.59 High, Flat (thd)
2099358	RS PRO	DP ON-OFF-ON	PC thru-hole	GOLD	5.33 High	5.59 High, Flat (no-thd)
2099359	RS PRO	DP ON-OFF-ON	PC thru-hole	GOLD	10.41 High	6.60 High, Keyway (thd)

NO. POLES	UL/CSA MODEL NO.	MODEL NO.	SWITCH FUNCTION			CONNECTED TERMINALS / SCHEMATIC		
			POS.1	POS.2	POS.3	POS.1	POS.2	POS.3
SP	Q2211	2MS1	ON	NONE	ON	2-3	N/A	2-1
	Q2212	2MS2	ON	NONE	(ON)			
	Q2213	2MS3	ON	OFF	ON		OPEN	
	Q2214	2MS4	(ON)	OFF	(ON)			
	Q2215	2MS5	ON	OFF	(ON)			
	Q2216	2MS6	OFF	NONE	ON	OPEN	N/A	3-1
DP	Q2221	2MD1	ON	NONE	ON	2-3,5-6	N/A	2-1,5-4
	Q2222	2MD2	ON	NONE	(ON)			
	Q2223	2MD3	ON	OFF	ON		OPEN	
	Q2226	2MD6	ON	ON	ON			

Miniature Toggle Switches

Product Description

2M series sub-miniature toggle switches offer in both SPDT and DPDT, including multiple actuator, bushing and termination options, and contact rating up to 3A. The operating temperature range between -40°C and 85°C. Now available with a locking toggle.

Applications of Dailywell 2M series toggle switches include telecommunications, instrumentation and medical equipment.

APPLICATIONS:

- telecommunications and networking equipment (wireless network cards, handheld devices, reset switches)
- instrumentation (shut-off switches, controllers)
- industrial controls (grips, joysticks, power supplies)
- test and measurement equipment
- elevator controls
- food processing equipment
- boat and marine control panels
- medical equipment (wheelchair motor switch)
- off-highway and construction equipment
- security systems and metal detectors

Specifications

SPECIFICATIONS

CONTACT RATING: Dependent upon contact material See Page

MECHANICAL LIFE: 30,000 make-and-break cycles.

CONTACT RESISTANCE: 20 mΩ max. initial @ 2-4VDC
100mA for both silver and gold plated contacts.

INSULATION RESISTANCE: 1,000 MΩ min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @sea level.

OPERATING TEMPERATURE: -40°C to 85°C.

MATERIALS

CASE: Diallyl phthalate (DAP) (UL94v-0).

ACTUATOR: Brass, chrome plated.

BUSHING: Brass or zinc, nickel plated.

HOUSING: Stainless Steel.

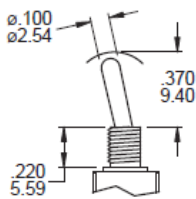
SWITCH SUPPORT: Brass, tin plated.

TERMINAL/CONTACT: Brass or copper alloy, with Silver or gold

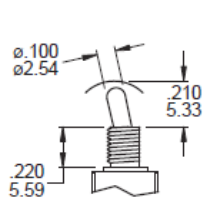
Miniature Toggle Switches

Actuator Options

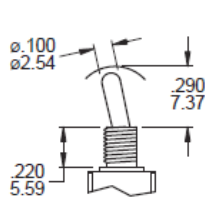
T1



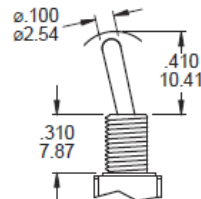
T2



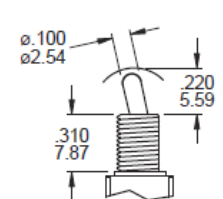
T3



T4

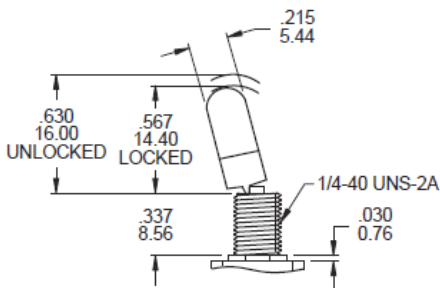


T5

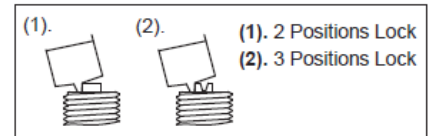
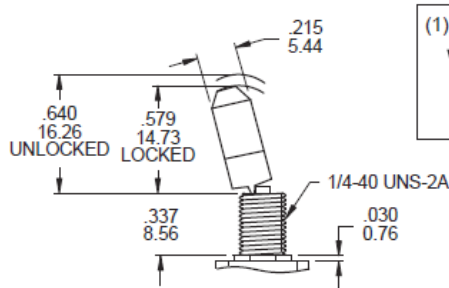


NONE: T1,T2,T3 Actuator shown with B1 to B4 bushing, subtract 0.09 (2.29) for B5 bushing, subtract 0.04 (1.02) for B7 bushing.
 T4,T5 Actuator shown with B5,B6 bushing, add 0.09 (2.29) for B1 to B3 bushing, add 0.05 (1.27) for B7 bushing.
 Std for M1,M2 Terminal sub .016(.040) for M6,M7,VSX

TL1B25

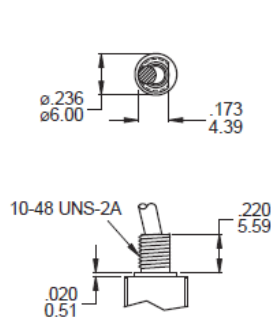


TL2B25

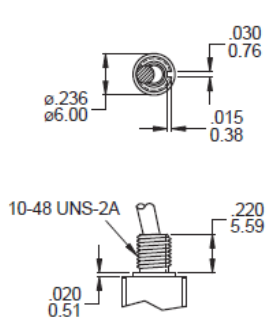


BUSHING OPTIONS

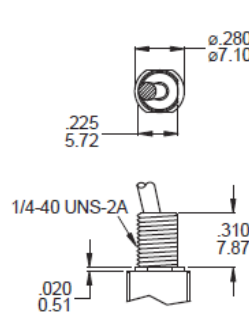
B1 THD
B2 NON-THD



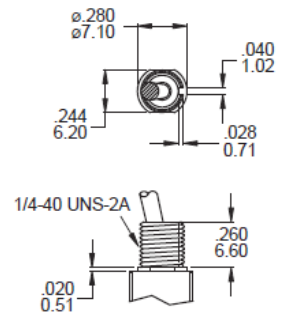
B3 THD
B4 NON-THD



B5 THD
B6 NON-THD

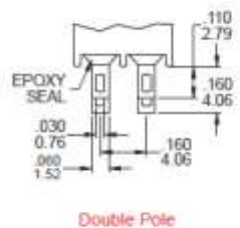
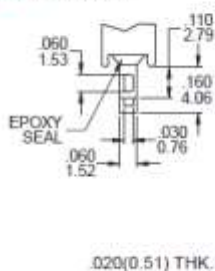


B7 THD
B8 NON-THD



TERMINATION OPTIONS

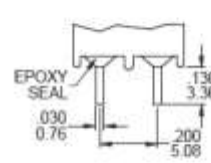
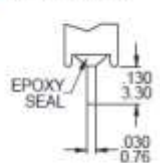
M1 Solder lug



Double Pole

.020(0.51) THK.

M2 PC Thru-hole

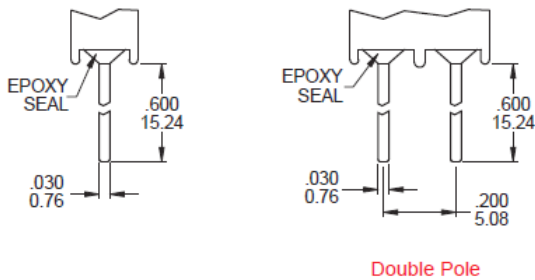


Double Pole

.020(0.51) THK.

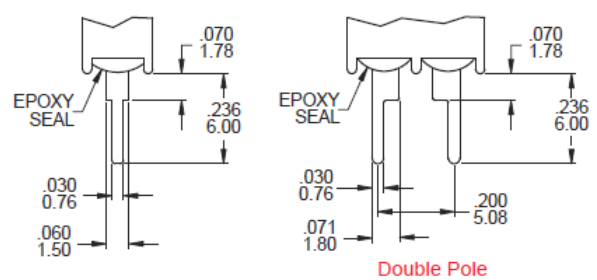
Miniature Toggle Switches

M51 Wire Wrap



.020(0.51) THK.

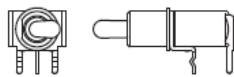
M52 Wire Wrap



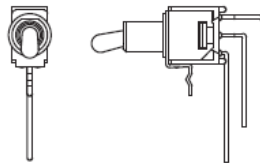
.020(0.51) THK.

SNAP-IN TERMINATION OPTIONS

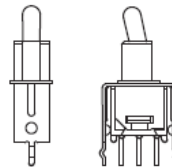
M6N



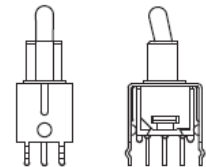
M7N



V2N



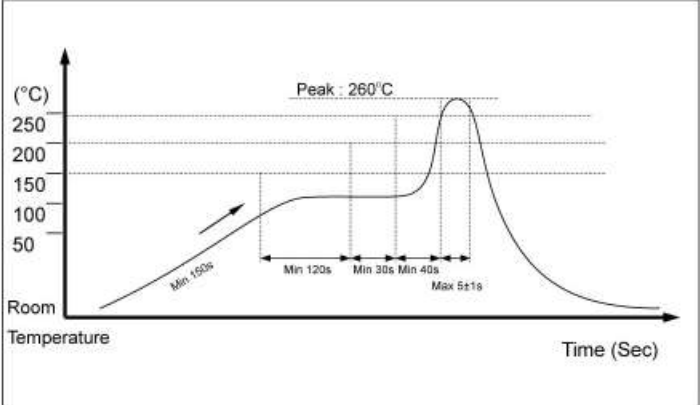
V3N



Reliability Performance

<p>Resistance Humidity</p>	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made:</p> <ul style="list-style-type: none"> ➤ Temperature: $40 \pm 2^\circ\text{C}$ ➤ Relative Humidity: 90~95% ➤ Time: 96 hours.
<p>The Salt Testing</p>	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made :</p> <ul style="list-style-type: none"> ➤ Temperature : $35 \pm 2^\circ\text{C}$. ➤ The ratio of salt-water : 5%. ➤ The spray amount of salt- water : 1~2 ml/h. ➤ Time : 48 hours.
<p>Shock Test</p>	<p>Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F</p> <ul style="list-style-type: none"> ➤ Acceleration; 50g ➤ Action time: $11 \pm 1\text{m}$ seconds. ➤ Testing Direction: 6 sides. ➤ Test Cycle: 3 times in each direction.

Miniature Toggle Switches

<p>Operating Life</p>	<p>Measurements shall be made following the test forth below:</p> <ul style="list-style-type: none"> ➤ 3A@120VAC resistive load – silver plated. 1A@250VAC resistive load – silver plated. 0.4VA max@ 20VAC max resistive load – gold plated. ➤ Rate of Operation: 6-8operation cycles per minute. ➤ Electronics Life Test: 6,000 cycles. <p>Mechanical Life Test: 30,000 cycles.</p>
<p>Soldering Temperature</p>	<p>1. Manual Soldering : Soldering Temperature : Max.350°C Continuous Soldering Time : Max. 5 seconds.</p> <p>2. WAVE Soldering : Soldering Temperature:260±5°C. Duration of Solder Immersion: 5 ±1 seconds</p> <p style="text-align: center;">Temperature Profile</p>  <p>3. Frequency of Soldering Process 2 times max.(PCB is 1.6mm in thickness) ■ Precautions in Handling Care should be exercised so that flux from the upper part of the printed circuit board does not adhere to the switch.</p>

Additional Information

Custom Tariff Number	8536500000
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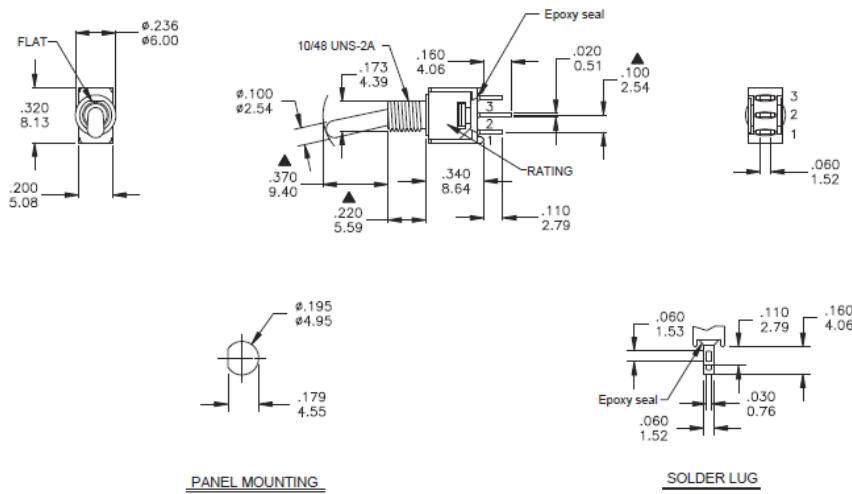
Approvals

Hazardous Area Certification	RoHS 2011/65/EU & 2015/863
Standards Met	IP 67

Miniature Toggle Switches

Stock No. 209-9360

Drawing:



Model No.	POS.1	POS.2	POS.3
2MS1	ON	NONE	ON
Term. Comm.	2-3	N/A	2-1
SCHEMATIC		N/A	

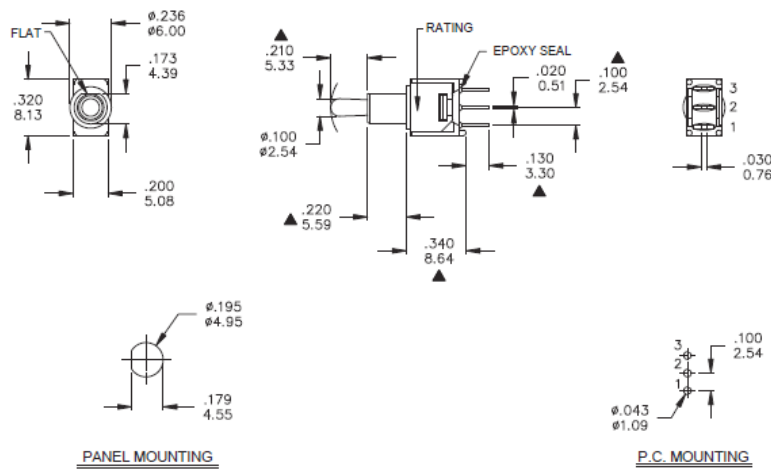
SWITCH FUNCTION

PART NO.	PART NAME	QTY	
1	MNU-2M01	10-48 INCH NUTS	2
2	MNU-2M03	LOCKWASHER	1

FILE NAME: HARDWARE-0003

Stock No. 209-9374

Drawing:



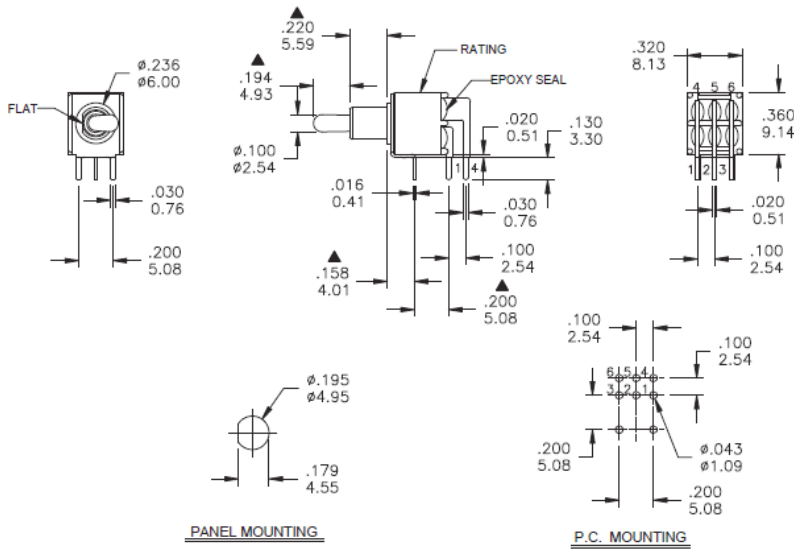
Model No.	POS.1	POS.2	POS.3
2MS4	MOM	OFF	MOM
Term. Comm.	2-3	OPEN	2-1
SCHEMATIC		OPEN	

SWITCH FUNCTION

Miniature Toggle Switches

Stock No. 209-9352

Drawing:



Model No.	POS.1	POS.2	POS.3
2MD1	ON	NONE	ON
Term. Comm.	2-3,5-6	N/A	2-1,5-4
SCHEMATIC		N/A	

SWITCH FUNCTION