

Military/Aerospace/Hi-REL

MIL-DTL-83731F Toggle Switches



Description

The Military series toggle switches are high-quality, resilient switches qualified to the MIL-DTL-83731F specification. The switches are made of flame-retardant housing material with 50 μ inch selective gold contact plating and epoxy sealed terminals for process compatibility. With a long lifecycle of 10,000 cycles, military series switches successfully operate at both high and low temperatures, even in the harshest of environments.

Features & Benefits

- Qualified to MIL-DTL-83731F Cage code FBHV6
- 50 μ inch selective gold contact plating
- Epoxy sealed terminals for process compatibility
- Rated for logic level to 5 amp resistive loads and 2 amp inductive loads
- Flame retardant housing material
- RoHS compliant and compatible

Test Requirement	MIL-DTL-83731F/9, 10, 15, 16
Strength of Terminal	1 lb. – solder lug
Strength of Actuating Lever Pivot and Stop	10 lbs. & 8 lbs. throughout range
Strength of Mounting Means	15 lbs. in. torque on bushing
Dielectric (Sea Level) Indication	1000 VAC Group B, 750 VAC after electrical endurance. 500 μ A max. leakage
Contact Voltage Drop	2.5 millivolt initial, 5.0 millivolt after mechanical endurance @ 2-6 VDC 0.1 amp
Temperature Rise	50° C rise max. @ rated resistive load after endurance test
Short Circuit	10 operations carry 100 amps resistive load @ lowest DC volts
Mechanical Life	20K operations at specified high and low temperatures
Electrical Endurance	10K operations at specified high and low temperatures
Overload	50 operations @ 150% of rated resistive load
Electrical Endurance at Sea Level	10K operations resistive load @ room temperature 10K operations inductive load @ room temperature 10K operations lamp load @ room temperature Performed on different test samples
Vibration	Method 204 of MIL-STD-202, test condition A .06 D. A. or 10 G's 10-500 Hz, 10 usec. max. chatter
Shock	Fuse-method 213 or MIL-STD-202, 10 usec. max. chatter
Salt Spray Test Upon Completion	48 hours – method 101 of MIL-STD-202, test condition B 10 operations resistive load (toggle sealed switches only)
Moisture Resistance Test Upon Completion	Method 106 of MIL-STD-202 100 VDC potential between current carrying parts and panel
Sand & Dust	Method 110 of MIL-STD-202, test condition B 6 hours @ 23 °C 2.5K operations mechanical life (toggle sealed switches only)
Explosion	Method 109 of MIL-STD-202, maximum rated DC inductive load (toggle sealed switches only)
Sealing	Toggle seal – 5 operations under 0.5 inches of H ₂ O above top of bushing
A.) Toggle Seal B.) Bushing Seal	(Toggle sealed switches only) (Panel sealed switches only)
Temperature Operation	Mechanical life, –25 to 71 °C
Life Low Cur. Level	No requirement
Fungus	No requirement
Intermediate Current	20K operations, 35/40 milliamps @ 5 VDC resistive load @ 71°C
Thermal Shock	Method 107 of MIL-STD-202 test condition A; 5 cycles @ –55 /+85 °C

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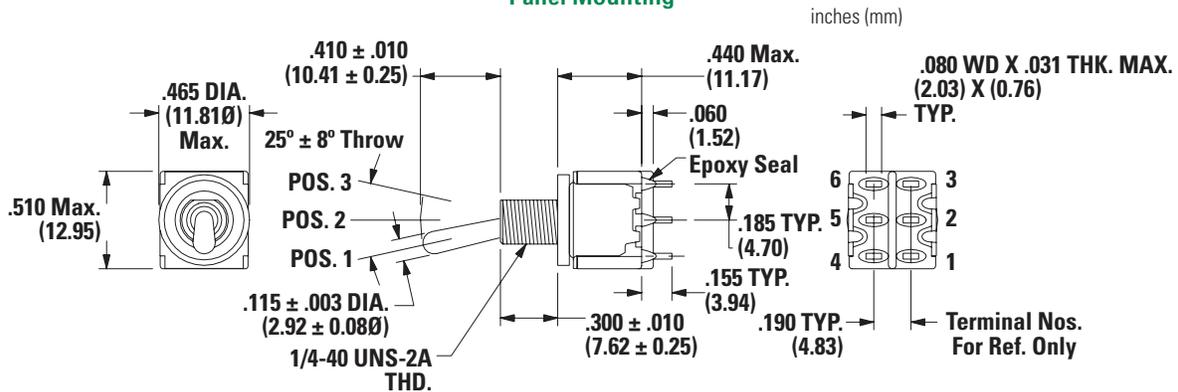


DPDT

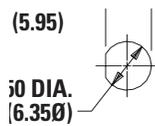


No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
DP	M83731/10-211	ON	OFF	ON	2-3, 5-6	OPEN	2-1,5-4	
	M83731/10-231	ON	NONE	ON	2-3, 5-6	OPEN	2-1,5-4	
	M83731/10-261	ON		MOM.	2-3, 5-6		2-1,5-4	
	M83731/10-271	MOM.	OFF	MOM.	2-3, 5-6	OPEN	2-1,5-4	
	M83731/10-311	ON		MOM.				
	M83731/10-321	ON	ON	ON	2-3, 5-6	2-3,5-4	2-1,5-4	
	M83731/10-331	ON		MOM.	N/A	2-3,5-6		
	M83731/10-341	NONE				2-3,5-6		
M83731/10-351	MOM.			2-3,5-6	2-3,5-4			

Panel Mounting

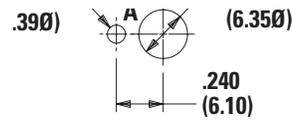


Without locking ring.



inches (mm)

With standard locking ring.



inches (mm)

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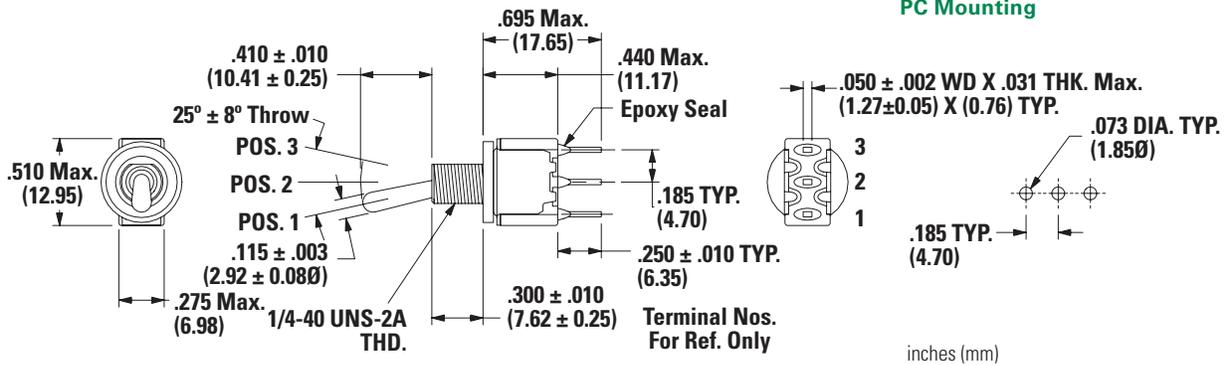
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SPDT



No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	M83731/9-212	ON	OFF	ON	2-3	OPEN	2-1	SPDT
	M83731/9-232	ON	NONE	ON	2-3	OPEN	2-1	
	M83731/9-262			MOM.				
	M83731/9-272	MOM.	OFF	MOM.	2-3	OPEN	2-1	
	M83731/9-312	ON						
M83731/9-342	NONE	ON	MOM.	N/A	2-3	2-1		



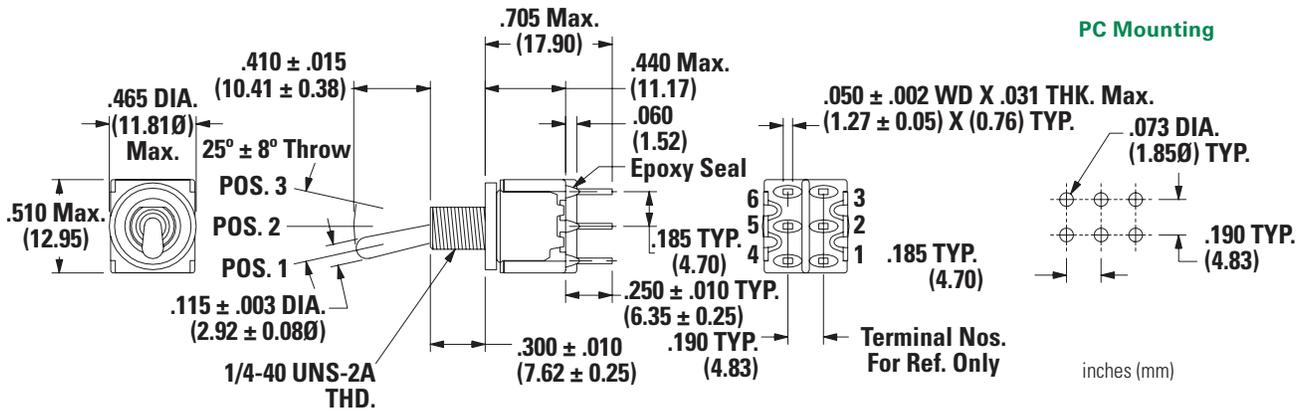
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DPDT

No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
DP	M83731/10-212	ON	OFF	ON	2-3, 5-6	OPEN	2-1,5-4	
	M83731/10-232	ON	NONE	ON	2-3, 5-6	OPEN	2-1,5-4	
	M83731/10-262			MOM.				
	M83731/10-272	MOM.	OFF	MOM.	2-3, 5-6	OPEN	2-1,5-4	
	M83731/10-312	ON						
	M83731/10-322	ON	ON	ON	2-3, 5-6	2-3,5-4	2-1,5-4	
	M83731/10-332	ON		MOM.				
	M83731/10-342	NONE		N/A	2-3,5-6			
M83731/10-352	MOM.			2-3,5-6	2-3,5-4			



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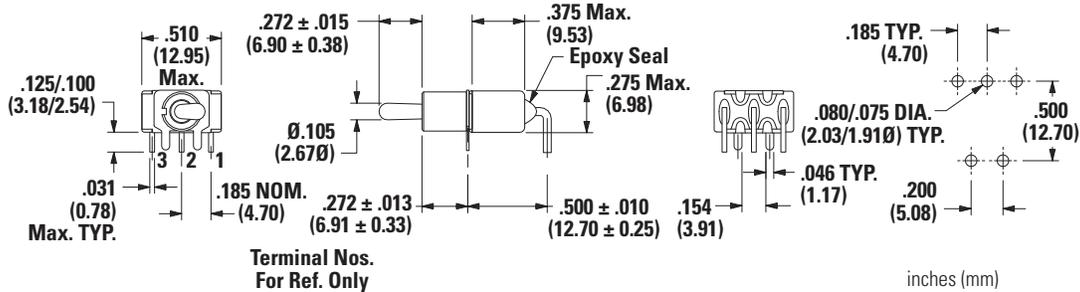


SPDT



No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
SP	M83731/15-211	ON	OFF	ON	2-3	OPEN	2-1	
	M83731/15-231	ON	NONE	ON	2-3	OPEN	2-1	
	M83731/15-261			MOM.				
	M83731/15-271	MOM.	OFF	MOM.	2-3	OPEN	2-1	
	M83731/15-311	ON						
	M83731/15-341	NONE	ON	MOM.	N/A	2-3	2-1	

PC Mounting

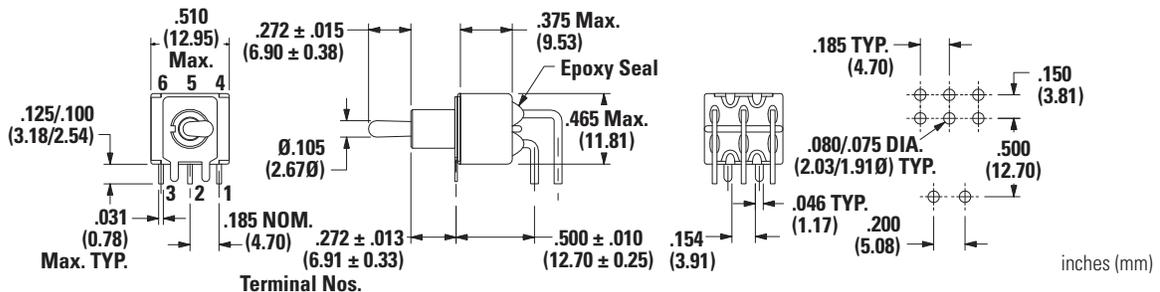


DPDT



No. Poles	Model No.	Switch Function			Connected Terminals			Schematic
		POS. 1	POS. 2	POS. 3	POS. 1	POS. 2	POS. 3	
DP	M83731/16-211	ON	OFF	ON	2-3, 5-6	OPEN	2-1, 5-4	
	M83731/16-231	ON	NONE	ON	2-3, 5-6	OPEN	2-1, 5-4	
	M83731/16-261			MOM.				
	M83731/16-271	MOM.	OFF	MOM.	2-3, 5-6	OPEN	2-1, 5-4	
	M83731/16-311	ON						
	M83731/16-321	ON	ON	ON	2-3, 5-6	2-3, 5-4	2-1, 5-4	
	M83731/16-331	ON		MOM.				
	M83731/16-341	NONE		MOM.	N/A	2-3, 5-6		
	M83731/16-351	MOM.			2-3, 5-6	2-3, 5-4		

PC Mounting



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