EAGLEPICHER⁺ TECHNOLOGIES

Miniature Switches

The Miniature Switch (MS Series) is a pyrotechnicactuated device that can open or close up to eight electrical circuits on a one-time basis.

> It is compact, lightweight, highly reliable and consumes very little power. This has led to widespread use of the Miniature Switches in the aerospace industry.

Variations

Each unit is hermetically sealed so that no products of the pyrotechnic actuation can escape from the housing. For more information, see the Micro-Miniature Switches Data Sheet.

Miniature Switches are available with 2 to 8 poles, with 0 to 8 close contacts before firing. They can be set for instantaneous action or for delays of up to 1 second.

Standard round or flattened/pierced end pins can be specified. Several squibs are available for variations in firing characteristics.

Characteristics

Some of the characteristics listed here are nominal; others are levels to which the units have been tested. There are no limits on design capabilities. Please consult an EaglePicher representative before using this data as a specification.

fax 417.623.0850

Specifications

Electrical						
	Squib Type		Bridge Resistance* @70°F (21°C)	All-Fire Current @ -65°F (-54°C)	No-Fire Current @ 160°F (71°C)	
2-pin	3-pin	4-pin	Ohm	Amp, Min.	Amp, Max.	
А	A3	A4	6.0 ± 1	0.30	0.03	
В	B3	B4	4.5 ± 0.5	0.56	0.10	
С	C3	C4	1.8 ± 0.2	1.00	0.10	
F	F3	F4	0.12 ± 0.03	4.50	1.00	
G	G3	G4	25.0 ± 5.0	0.10	0.01	
Н	H3	H4	0.28 ± 0.12	2.00	0.500	
Y Not available		ailable	1.0 ± 0.2	3.50	1.00	
Contact Resistance @ 1.0 amp			0.008 ohm max			
Insulation Resistance @ 500 Vdc			Before firing, between shunted squib leads and case: 100 megohm min Before firing, between each contact terminal and case: 100 megohm min Before firing, between each contact terminal and every other isolated terminal: 100 megohm min After firing, between each contact terminal and case: 20 megohm min After firing, between each contact terminal and every other isolated terminal: 20 megohm min			
Contact Current Carrying Capacity @ 70°F (21°C)			6.0 amp for 4 hr			

*1/4" (6.35 mm) from ends of leads, with test current limited to 0.010 amp.

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MS Series Miniature Switches

Specifications Continued									
Mechanical									
	No. of Poles								
Delay (sec)	2	4	6	8					
0	16 g	20 g	24 g	28 g					
0.015 - 1.0	24 g	28 g	32 g	36 g					
Size	See drawing								
Function Time	2.0 ms to 6.0 sec								

See Firing Characteristics of Pyrotechnic-Actuated Devices for the effect of current on ignition times.

Specifications Continued					
Environmental					
	Operating range: -65° to +160°F (-54° to + 71°C)				
-	MIL-STD-202, Method 102A, Condition D (temperature cycling)				
Temperature	MIL-STD-202, Method 103B, Condition D (humidity, steady state)				
	MIL-STD-810B				
Vibration	5-2000-5 Hz, 30 g's or 0.34" (8.64 mm) d.a.				
	2000 g's, 1.5 ms, 1/2 sine wave 30 g's or 0.34" (8.64 mm) d.a.				
Shock	Sinusoidal: 0-2000 Hz, 30 g's or 0.34″ (8.64 mm) d.a.				
	Random: 100-2000 Hz, 1.0 g²/cps; overall 51.0 g's rms				
Acoustic Noise	160 dB, 37.5-9600 Hz				
Acceleration	200 g′s				
Chemical					
Ignition Compound	KDNBF				
Freight Classification					
Shipping Name	Release Device, Explosive				
Identification Number	UN0173				
Hazard Classification	Unregulated				





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Ordering Information

Order switches by part number as follows

Example:

MS 4.2-0.0-CRT1

MS = Switch series 4 = Number of poles (2 to 8) 2 = Number of closed contacts before firing (0 to 8) 0.0 = Delay time in seconds C = Squib type (see table) R = Contact arrangement* T1 = Flattened and pierced pins**

*When both open and closed contacts (before firing) are furnished, the closed contacts are nearest the squib. This is indicated by the suffix "R".

**If T1 is not designated, standard rounded end pins will be furnished.



DIMENSIONS IN PARENTHESIS () ARE IN MM. NOMINAL DIMENSIONS, INCHES AND (MM) 2-POLE 6-POLE 8-POLE ALL 4-POLE DELAY (SECONDS) в А С А С А С А С 0 2.096 (53.238) 0.723 (18.364) 1.116 (28.346) 1.046 (26.568) 1.466 (37.236) 1.396 (35.458) 1.816 (46.126) 1.746 (44.348) 2.166 (55.016) 0.015-2.9 2.672 (67.869) 2.602 (66.091) 1.227 (31.166) 1.622 (41.199) 1.552 (39.421) 1.972 (50.089) 1.902 (48.311) 0.723 (58.979) 2.252 (57.201) 3.0-6.0 1.627 (41.326) 2.022 (51.359) 1.952 (49.581) 2.372 (60.249) 2.302 (58.471) 2.722 (69.139) 2.652 (67.361) 3.072 (78.029) 3.002 (76.251)

MS Series Miniature Switches



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