

RI-44 Series Dry Reed Switch



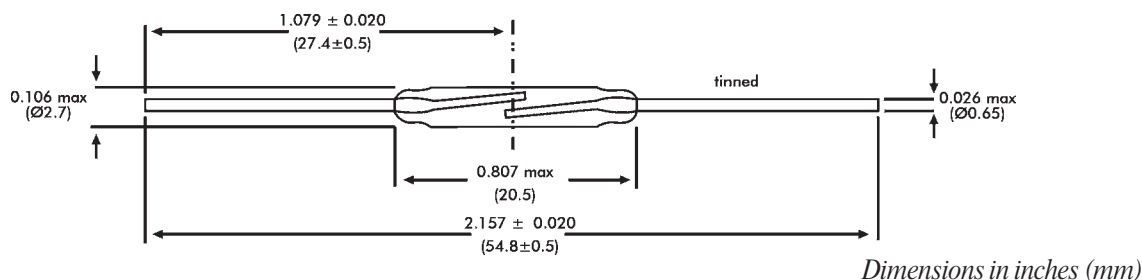
RI-44 Series

Micro dry-reed switch hermetically sealed in a gas-filled glass envelope. Single-pole, single-throw (SPST) type, having normally open contacts, and containing two magnetically actuated reeds. The switch is of the double-ended type and may be actuated by an electromagnet, a permanent magnet or a combination of both.

The device is intended for use in sensors, relays, pulse counters or similar devices where high voltages need to be switched.

RI-44 Series Features

- ◆ High voltage breakdown voltage
- ◆ Can handle up to 40W load
- ◆ Contact layers: gold, rhodium
- ◆ Superior glass-to-metal seal and blade alignment
- ◆ Excellent life expectancy and reliability



General data for all models RI-44

AT-Customization / Preformed Leads

Besides the standard models, customized products can also be supplied offering the following options:

- Operate and release ranges to customer specification
- Cropped and/or preformed leads

Coils

All characteristics are measured using the Philips Standard Coil. For definitions of the Philips Standard Coil, refer to "Application Notes" in the *Reed Switch Technical & Application Information* Section of this catalog.

Life expectancy and reliability

The life expectancy data given below are valid for a coil energized at 1.5 times the published maximum operate value for each type in the RI-44 series.

Loaded conditions (resistive load: 20 V; 500 mA; operating frequency: 125 Hz)

Operate Sensitivity > 25AT

MCBF 250M operations

End of life criteria:

Contact resistance > 2Ω after 2.5 ms

Release time > 2.5 ms (latching or contact sticking).

Switching different loads involves different life expectancy and reliability data. Further information is available on request.

Other loads, contact Coto for more detail.

Mechanical Data

Contact arrangement is normally open; lead finish is tinned; net mass is approximately 280 mg; and can be mounted in any position.

Shock

The switches are tested in accordance with "IEC 68-2-27", test Ea (peak acceleration 500 G, half sinewave; duration 11 ms). Such a shock will not cause an open switch (no magnetic field present) to close, nor a switch kept closed by an 80 AT coil to open.

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Model Number	RI-44
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Parameters	Test Conditions	Units
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Operating Characteristics

Operate Range		AT	10 - 70
Release Range		AT	2 - 50
Operate Time - including bounce (typ.)	(energization)	ms	0.35
Bounce Time (typ.)	(energization)	ms	0.15
Release Time (max)	(energization)	μ s	30
Resonant Frequency (typ.)		Hz	3200

Electrical Characteristics

Switched Power (max) ¹		W	40
Switched Voltage DC (max)		V	See Note 2
Switched Voltage AC, RMS value (max)		V	See Note 2
Switched Current DC (max) ²		mA	1000
Switched Current AC, RMS value (max) ²		mA	700
Carry Current DC (max) ²		A	2.5
Breakdown Voltage (min) ²		V	2000
Contact Resistance (initial max)	(energization)	m Ω	90 (27 AT)
Contact Resistance (initial typ.)	(energization)	m Ω	60 (27 AT)
Contact Capacitance (max)	without test coil	pF	0.2
Insulation Resistance (min)	RH $\leq$ 45%	M Ω	10 ⁶

Notes:

(1) Switching Power: The product of switching voltage and switching current may not exceed the indicated switching power.

(2) Contact Coto for more details.

Vibration

The switches are tested in accordance with “IEC 68-2-6”, test Fc (acceleration 10 G; below cross-over frequency 57 to 62 Hz; amplitude 0.75 mm; frequency range 10 to 2000 Hz, duration 90 minutes). Such a vibration will not cause an open switch (no magnetic field present) to close, nor a switch kept closed by an 80 AT coil to open.

Welding

The leads can be welded.

Mechanical Strength

The robustness of the terminations is tested in accordance with “IEC 68-2-21”, test Ua₁ (load 40 N).

Operating and Storage Temperature

Operating ambient temperature; min: -55°C; max: +125°C. Storage temperature; min: -55°C; max: +125°C. **Note:** Temperature excursions up to 150°C may be permissible. For more information contact your nearest Coto Technology sales office.

Soldering

The switch can withstand soldering heat in accordance with “IEC 68-2-20”, test Tb, method 1B: solder bath at 350 $\pm$ 10°C for 3.5 $\pm$ 0.5 s. Solderability is tested in accordance with “IEC 68-2-20”, test Ta, method 3: solder globule temperature 235°C; ageing 1b: 4 hours steam.

Mounting

The leads should not be bent closer than 1 mm to the glass-to-metal seals. Stress on the seals should be avoided. Care must be taken to prevent stray magnetic fields from influencing the operating and measuring conditions.