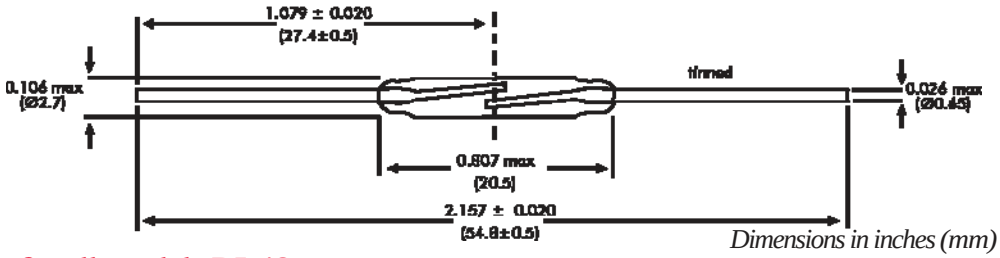
RI-48 Series

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 perma- nent magnet or a combination of both.

The device is intended for use in relays for switching power loads and high stand-off voltage applications.

RI-48 Series Features

- Perfect heavy load switch
- Can handle loads up to 70 Watts
- Contact layers: gold, sputtered ruthenium
- Superior glass-to-metal seal and blade alignment
- Excellent life expectancy and reliability



Dimensions in inches (mm)

General data for all models RI-48

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-48 series.

No-load conditions (operating frequency: 100 Hz)

Life expectancy: min. 10^8 operations with a failure rate of less than 10^{-9} with a confidence level of 90%.

End of life criteria:

- Contact resistance ＞ 1Ω after 2 ms
- Release time ＞ 2 ms (latching or contact sticking).

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

RI-48AA

Life expectancy: min. 10^7 operations with a failure rate of less than 10^{-8} with a confidence level of 90%. End of life criteria:

- Contact resistance ＞ 2Ω after 2.5 ms
- Release time ＞ 2.5 ms (latching or contact sticking).

RI-48A; RI-48B; RI-48C

Life expectancy: min. 2.5 x 10^7 operations with a failure rate of less than 10^{-8} with a confidence level of 90%. End of life criteria:

- Contact resistance ＞ 2Ω after 2.5 ms
- Release time ＞ 2.5 ms (latching or contact sticking).

Loaded conditions (resistive load: 100 V-700 mA; operating frequency: 20 Hz) RI-48B;

RI-48C

Life expectancy: min. 3x10^5 operations with a failure rate of less than 10^{-6} with a confidence level of 90%.

Model Number			RI-48A	RI-48B	RI-48C
Parameters	**Test Conditions**	**Units**			
Operating Characteristics					
Operate Rangs		AT	15-28	24-51	46-70
Release Range		AT	8-20	13-27	12-22.5
Operate Time-including bounce (typ.)	(energization)	ms	0.35(35AT)	0.35(64AT)	0.35(87.5AT)
Bounce Time (typ)	(energization)	ms	0.15(35AT)	0.15(64AT)	0.15(87.5AT)
Release Time (mas)	(energization)	us	30(35AT)	30(64AT)	30(87.5AT)
Resonant Frequency (typ.)		Hz	3200	3200	3200
Electrical Characteristics					
Switch Power (max)		W	70	70	70
Switch Voltage DC (max)		V	200	200	200
Switch Voltage AC ,RMS value (max)		V	250	250	250
Switch Current DC (max)		mA	1000	1000	1000
Switch Current AC, RMS value (max)		mA	1000	1000	1000
Carry Current DC (max)		A	1.75	2.25	3
Breakdown Voltage (min)		V	400	580	780
Contact Resistance (initial max)	(energization)	mΩ	90(27AT)	90(36AT)	90(36AT)
Contact Resistance (intial typ.)	(energization)	mΩ	60(27AT)	60(36AT)	60(36AT)
Contact Capacitance (max)	without test coil	pF	0.2	0.2	0.2
Insulation Resistance (min)	RH≤45%	MΩ	10^6	10^6	10^6

End of life criteria:

●Contact resistance ＞ 1.5Ω after 2.5 ms.

●Release time ＞ 2.5 ms (latching or contact sticking). Switching different loads involves different life expect-ancy and reliability data . Further information is avail- able on request.

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.

Vibration

The switches are tested in accordance with "IEC 68-2-6", test Fc (acceleration 10 G; below cross-over fre- quency 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.

Mechanical Strength

The robustness of the terminations is tested in accordance with "IEC 68-2-21", test Ua_1(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 ±10°C for 3.5 ±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.

Welding

The leads can be welded.

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.