

# RI-90 Series Dry Reed Switch



## RI-90 Series

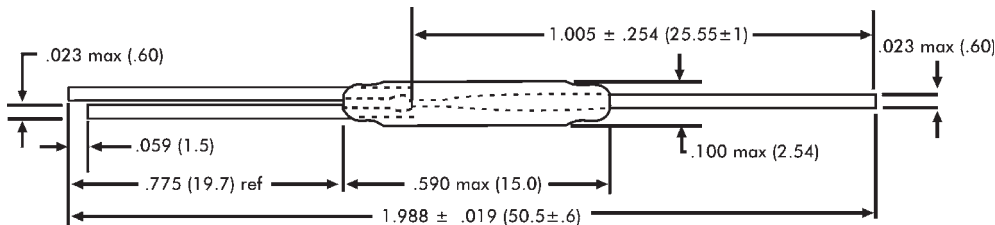
Micro changeover dry-reed switch hermetically sealed in a gas-filled envelope. Single-pole, double-throw (SPDT) type, having a normally open and a normally closed contact.

The switch 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.

## RI-90 Series Features

- ◆ Ideal for ATE switching & proximity sensors
- ◆ Contact layers: Ruthenium on gold
- ◆ Superior glass-to-metal seal and blade alignment
- ◆ Excellent life expectancy and reliability



Dimensions in inches (mm)

## General data for all models RI-90

### 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, see *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 1.25 times the published maximum operate value for each type in the RI-90 series.

### No load conditions (operating frequency: 100Hz)

Life expectancy : min.  $10^8$  operations with a failure rate of less than  $2 \times 10^{-9}$  with a confidence level of 90%.

End of life criteria:

Contact resistance  $> 1\Omega$  after 2 ms

Release time  $> 2$  ms (latching or contact sticking).

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

### Operating and Storage Temperature

Operating ambient temperature; min:  $-55^\circ\text{C}$ ; max:  $+125^\circ\text{C}$ . Storage temperature; min:  $-55^\circ\text{C}$ ; max:  $+125^\circ\text{C}$ . **Note:** Temperature excursions up to  $150^\circ\text{C}$  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  $350 \pm 10^\circ\text{C}$  for  $3.5 \pm 0.5$  s. Solderability is tested in accordance with "IEC 68-2-20", test Ta, method 3: solder globule temperature  $235^\circ\text{C}$ ; ageing 1b: 4 hours steam.

### Welding

The leads can be welded.

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Model Number		RI-90	
Parameters	Test Conditions	Units	
<b>Operating Characteristics</b>			
Operate Range		AT	10-30
Release Range		AT	Min 5
Operate Time - (max)	(energization)	ms	1.0
Bounce Time (max)	(energization)	ms	1.5
Release Time (max)	(energization)	ms	1.0
Resonant Frequency (typ.)		Hz	TBD
<b>Electrical Characteristics</b>			
Switched Power (max)		W	5
Switched Voltage DC (max)		V	175
Switched Voltage AC, RMS value (max)		V	125
Switched Current DC (max)		mA	400
Switched Current AC, RMS value (max)		mA	280
Carry Current DC (max)		A	0.5
Breakdown Voltage (min)		V	200
Contact Resistance (initial max)		m Ω	140
Contact Resistance (initial typ.)		m Ω	120
Contact Capacitance (max)	without test coil	pF	0.8
Insulation Resistance (min)	RH ≤ 45%	M Ω	10 <sup>3</sup>

## 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.