

# RI-91 Series Dry Reed Switch

**10W  
Form C**



## RI-91 Series

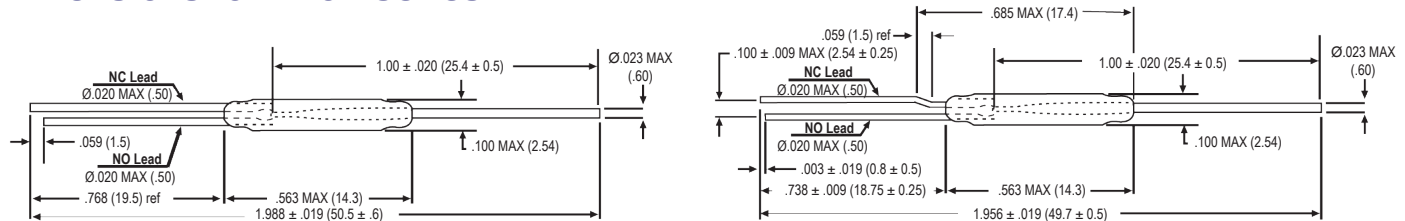
10W changeover dry-reed switch hermetically sealed in a gas-filled envelope. Single-pole, double-throw (SPDT) type, having a normally open and a normally closed contact.

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-91 Series Features

- Ideal for ATE relays and proximity sensors
- Contact layers: Ruthenium on gold
- 10 W, 170 VDC
- Excellent life expectancy and reliability
- UL#: E125629

## Dimensions for RI-91 Series



All Dimension in inches (mm) nominal

## General data for all models RI-91

### 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

### Test Coils

All characteristics are measured using the Philips Standard Coil with full length switches.

### 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-91 series.

RI-91 NO:

DC Load [W = V x mA]	B10 [Mcy]	MCTF [Mcy]
10 = 175 x 57	2.2	6.2
10 = 71 x 140	0.60	0.75
10 = 50 x 200	0.60	1.1
10 = 20 x 500	0.22	0.38

RI-91 NC:

DC Load [W = V x mA]	B10 [Mcy]	MCTF [Mcy]
10 = 175 x 57	0.06	1.2
10 = 71 x 140	0.33	0.73

B10 = 'minimal life expectancy' at 10% failures.  
Mcy = mega cycles or one million operations.  
MCTF = mean cycle to failure

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

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

End of life criteria:

Contact resistance >  $1\Omega$  after 2 ms

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

### 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.

### 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.

### 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.

### Ordering Information

Series	AT Range	Options
RI-91GP	15 to 30 AT *Minimum 5 AT Range	MOD1

Part Number Example: RI-91GP 1520

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## Technical Specifications

Parameters	Test Conditions	Units	RI-91
<b>Operating Characteristics</b>			
Operate Range		AT	15-30
Release Range		AT	5 (min)
Operate Time - including Bounce (typ.)		ms	1.5
Bounce Time (typ.)		ms	1.0
Release Time (max)		ms	1.0
<b>Electrical Characteristics</b>			
Switched Power (max)		W	10
Switched Voltage DC (max)		V	175
Switched Voltage AC, RMS value (max)		V	125
Switched Current DC (max)		mA	500 NO / 140 NC
Switched Current AC, RMS value (max)		mA	140 NO / 140 NC
Carry Current DC (max)		A	0.5
Breakdown Voltage (min)		V	200
Contact Resistance (initial max.)		mΩ	140
Contact Resistance (initial typ.)		mΩ	120
Contact Capacitance (max)	without test coil	pF	0.8
Insulation Resistance (min)	RH ≤ 45%	MΩ	10 <sup>3</sup>



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