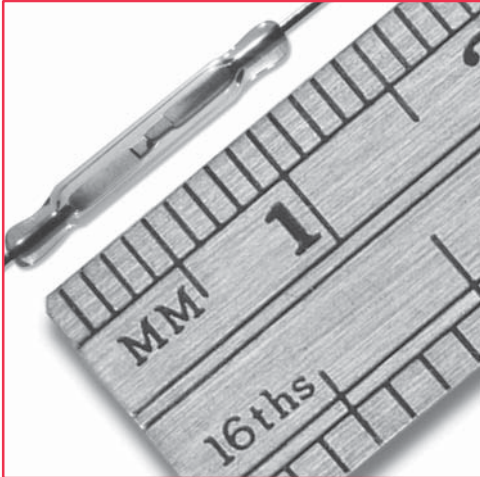


Sensor---RI-29 Series



RI-29 Series

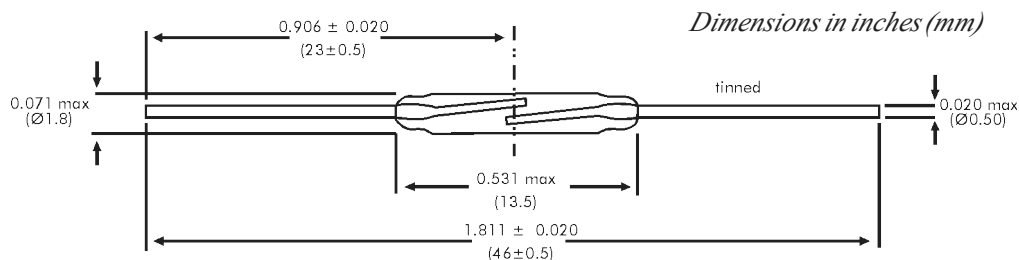
Pico dry-reed switch hermetically sealed in a gas-filled glass envelope. Single-pole, single-throw (SPST) type, having normally open contacts, and containing two magnetically actuated reeds.

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 relays or similar devices.

RI-29 Series Features

- Can handle up to 20 W load
- Contact layers: gold, copper, sputtered ruthenium
- Superior glass-to-metal seal and blade alignment
- Excellent life expectancy and reliability



General data for all models RI-29

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 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 1.25 times the published maximum operate value for each type in the RI-29 series.

No-load conditions (operating frequency: 100 Hz)

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

End of life criteria:

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

Loaded conditions (capacitive load: 80 V; 0.1 mA; (700 mA peak); operating frequency: 100 Hz)

RI-29AA

Life expectancy: min. 10^7 operations with a failure rate of less than 2×10^{-8} with a confidence level of 90%.

End of life criterion:

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

RI-29A

Life expectancy: min. 2×10^7 operations with a failure rate of less than 10^{-8} with a confidence level of 90%.

End of life criterion:

- Release time > 2 ms (latching or contact sticking). Switching different loads involves different life expectancy and reliability data. Further information is available on request.

Mechanical Data

Contact arrangement is normally open; lead finish is tinned; net mass is approximately 100 mg; and can be mounted in any position.

Sensor---RI-29 Series

| Model Number | | | RI-29AA | RI-29A |
|--------------------------------------|-------------------|-------|-----------------|-----------------|
| Parameters | Test Conditions | Units | | |
| Operating Characteristics | | | | |
| Operate Rangs | | AT | 16-25 | 20-34 |
| Release Range | | AT | 5-18 | 7-19.5 |
| Operate Time-including bounce (typ.) | (energization) | ms | 0.25(31AT) | 0.25(42.5AT) |
| Bounce Time (typ) | (energization) | ms | 0.05(31AT) | 0.05(42.5AT) |
| Release Time (mas) | (energization) | us | 30(31AT) | 30(42.5AT) |
| Resonant Frequency (typ.) | | Hz | 6500 | 6500 |
| Electrical Characteristics | | | | |
| Switch Power (max) | | W | 15 | 20 |
| Switch Voltage DC (max) | | V | 200 | 200 |
| Switch Voltage AC ,RMS value (max) | | V | 140 | 140 |
| Switch Current DC (max) | | mA | 1000 | 1000 |
| Switch Current AC ,RMS value (max) | | mA | 1000 | 1000 |
| Carry Current DC (max) | | A | 1.25 | 1.25 |
| Breakdown Voltage (min) | | V | 250 | 280 |
| Contact Resistance (initial max) | (energization) | mΩ | 115(25AT) | 115(25AT) |
| Contact Resistance (intial typ.) | (energization) | mΩ | 90(25AT) | 90(25AT) |
| Contact Capacitance (max) | without test coil | pF | 0.3 | 0.25 |
| Insulation Resistance (min) | RH≤45% | MΩ | 10 ⁶ | 10 ⁶ |

Shock

The switches are tested in accordance with “IEC 68-2-27”, test Ea (peak acceleration 150 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 10G; below cross-over frequency 57 to 62 Hz; amplitude 0.75 mm; frequency range 10 to 2000 Hz, duration 90 minutes in each direction). 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 68-2-2P”, test Ua (load 10N).

Operating and Storage Temperature

Operating ambient temperature; min: -55°C; max: +75°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.