COMUS Group

COMUS formerly COTO Technology

RI-25 Series Dry Reed Switch

RI-25 Series

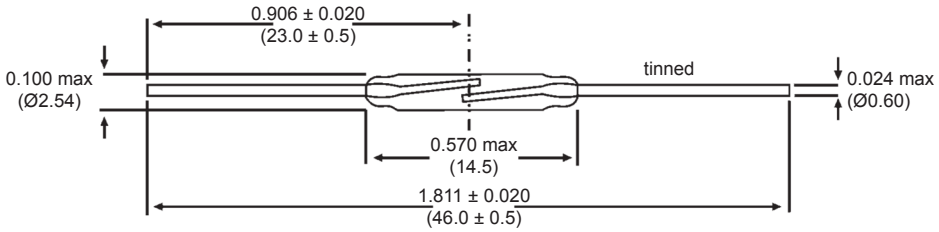
Micro dry-reed switch hermetically sealed in a gas-filled glass envelope. Single-pole, single-throw (SPST) type, having normally open contacts, and containing two magnetically actuated reeds.

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 high load applications in relays or switching devices.

RI-25 Series Features

- Can handle up to 25 W load
- Contact layers: gold, plated ruthenium
- Superior glass-to-metal seal and blade alignment
- Excellent life expectancy and reliability
- RoHS Compliant

Dimensions for RI-25 Series



All Dimension in inches (mm) nominal

General data for all models RI-25

AT-Customization / Performed 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 performed 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 1.25 times the published maximum operate value for each type in the RI-25 series.

No load conditions (operating frequency: 100Hz)

Life expectancy: min. 3×10^8 operations with a failure rate of less than 0.9×10^{-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-25AAA

Life expectancy: min. 10^6 operations with a failure rate of less than 2.5×10^{-7} 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-25AA; RI-25A; RI-25B; RI-25C

Life expectancy: min. 5×10^7 operations with a failure rate of less than 5×10^{-9} 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: 50 V; 100mA; operating frequency: 50 Hz)

Life expectancy: min. 10^6 operations with a failure rate of less than 2×10^{-7} with a confidence level of 90%.
End of life criteria:

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Technical Specifications

Parameters	Test Conditions	Units	RI-25AAA	RI-25AA	RI-25A	RI-25B	RI-25C
Operating Characteristics							
Operate Range		AT	8-16	14-23	18-32	28-52	46-70
Release Range		AT	4-14	7.5-17.5	8-22	12-29	16-32
Operate Time - including Bounce (typ.)		ms	0.25	0.25	0.25	0.25	0.25
Bounce Time (typ.)		ms	0.05	0.15	0.15	0.15	0.15
Release Time (max)		µs	70	30	30	30	30
Resonant Frequency (typ.)		Hz	5100	5100	5100	5100	5100
Electrical Characteristics							
Switched Power (max)		W	10	15	15	25	25
Switched Voltage DC (max)		V	200	200	200	200	200
Switched Voltage AC, RMS value (max)		V	140	140	140	140	140
Switched Current DC (max)		mA	750	1000	1000	1000	1000
Switched Current AC, RMS value (max)		mA	750	1000	1000	1000	1000
Carry Current DC (max)		A	1.5	1.75	2.5	2.75	3.0
Breakdown Voltage (min)		V	200	275	325	400	500
Contact Resistance (initial max.)		mΩ	100	100	100	100	100
Contact Resistance (initial typ.)		mΩ	70	70	70	70	70
Contact Capacitance (max)	without test coil	pF	0.3	0.3	0.25	0.25	0.25
Insulation Resistance (min)	RH ≤ 45%	MΩ	10^6	10^6	10^6	10^6	10^6

Contact resistance >1Ω after 5 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.

Mechanical Data
Contact arrangement is normally open; lead finish is tinned; net mass is approximately 190mg; and can be mounted in any position.

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 closedby 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.) 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 Ua1 (load 40 N).

Operating and Storage Temperature
Operating ambient temperature; min: -55°C; max: +125°C. Storage temperature; min: -55°; max: +125°C. Note: Temperature excursions up to 150°C may be permissible. For more information contact your nearest Comus Group 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.

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Comus International
454 Allwood Road
Clifton, New Jersey 07012
U.S.A

Tel: (1)973 - 777 - 6900
Fax: (1)973 - 777 - 8405
email: info@comus-intl.com
Website: http://www.comus-intl.com
ISO 9001:2008
CERTIFICATE NO: 03-12314

Comus Europe Ltd
Unit 7, Rice Bridge Industrial Estate
Thorpe - Le - Soken
Essex, England
CO160HL
Tel: +44 (0)1255 862236
Fax: +44 (0)1255 862014
email: sales@comuseurope.co.uk
Website: http://www.comuseurope.co.uk
ISO 9001:2008
CERTIFICATE NO: FM 21080

Comus Belgium BVBA
Overhaamlaan 40
B-3700 Tongeren
Belgium

Tel: +33 (0)12 390400
Fax: +33 (0)12 235754
email: info@comus.be
Website: http://www.comus.be

Comus Technology BV
Jan Campertstraat 11
6416 SG Heerlen
The Netherlands

Tel: +31(0)45 5439345
Fax: +31(0)45 5427216
email: info@comus-intl.com
Website: http://www.dry-reeds.com

Comus Electronics and Technologies
India Private Limited
2nd Floor, No.31/33, Anjugam Nagar
2nd Street, Ashok Nagar, Jaferkhanpet
Chennai 600083
Tamil Nadu, India
Tel:+(91)-(44)-42023510
Fax:+(91)-(44)-22628198
email: info@comus-intl.com
Website: http://www.comusindia.com

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