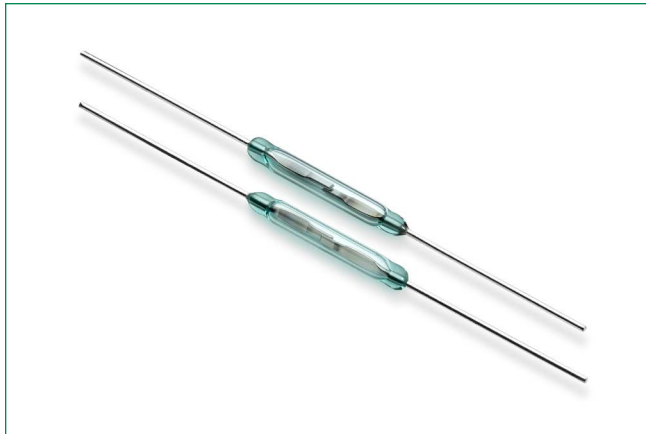


# MATE-12B Series

Long life > High Reliability > 12.7mm > Sub-miniature



## Description

The MATE-12B Reed Switch is a sub-miniature, normally open switch with a 12.70 mm long x 1.80 mm diameter (0.500" x 0.071") glass envelope, capable of switching 200 Vdc at 10 W. It has high insulation resistance of 10<sup>12</sup> Ohms minimum and low contact resistance of less than 100 milli-Ohms.

## Features & Benefits

- Prolong operating life cycles
- Hermitically sealed
- Miniature normally open switch
- cULus recognition
- RoHS compliant
- Extending end product operating life and reliability, ideal for Automatic Test Equipment (ATE)
- Suitable for various operating environment/application
- Saves PCB space and reduce overall weight for compact size and light weight end products
- Facilitates end product meeting/passing cULus test/request
- Environment friendly

## Additional Information



Resources



Accessories

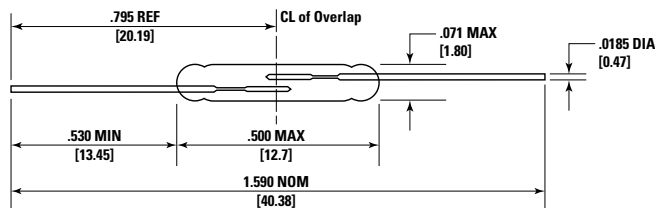


Samples

## Applications

- Reed Relay particularly for ATE application that requires long life
- Limit switching
- Appliance applications that require long life and high reliability switch

### Dimension in inch [mm]



## Agency Approvals

Agency	Agency File Number	Ampere-Turns Range
cULus	E47258 E471070	8-25 AT

Note: Contact Littelfuse for specific agency approval ratings.

## Switch Type

Contact Form	Materials
A (SPST-NO)	Body: Glass Leads: Tin-plated Nickel Iron

Note:

SPST-NO = Single pole, single-throw, normally open

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## Electrical Ratings

Contact Type			Normally Open
Contact Rating <sup>1</sup>		VA/Watt - max.	10
Voltage <sup>3</sup>	Switching <sup>2</sup>	Vdc - max.	200
	Breakdown <sup>4</sup>	Vac - max.	140
		Vdc - min.	250
Current <sup>3</sup>	Switching <sup>2</sup>	Adc - max.	0.5
	Carry	Aac - max.	0.35
		Adc - max.	1.0
Resistance	Contact, Initial Insulation	$\Omega$ - max.	0.100
		$\Omega$ - min.	10 <sup>12</sup>
Capacitance	Contact	pF - typ.	0.7
Temperature	Operating	°C	-40 to +125
	Storage <sup>5</sup>	°C	-65 to +125

**Notes:**

- Contact rating - Product of the switching voltage and current should never exceed the power rating. Contact Littelfuse for additional load/life information.
- When switching inductive and/or capacitive loads, the effects of transient voltages and/or currents should be considered. Refer to Application Notes AN108A and AN107 for details.
- Electrical Load Life Expectancy - Contact Littelfuse with voltage, current values along with type of load.
- Breakdown Voltage - per MIL-STD-202, Method 301.
- Storage Temperature - Long time exposure at elevated temperature may degrade solderability of the leads.

## Product Characteristics

Operating Characteristics		
Operate Time <sup>1</sup>		0.6 ms - max.
Release Time <sup>1</sup>		0.2 ms - max.
Shock <sup>2</sup>	11ms 1/2 sine wave	100 G - max.
Vibration <sup>2</sup>	50-2000 Hertz	30 G - max.
Resonant Frequency		6250 Hz - typ.
Magnetic Characteristics		
Pull-In Range <sup>3</sup>	Ampere Turns	8-25 AT
Rating Sensitivity <sup>4</sup>	Ampere Turns	20
Test Coil		L4989

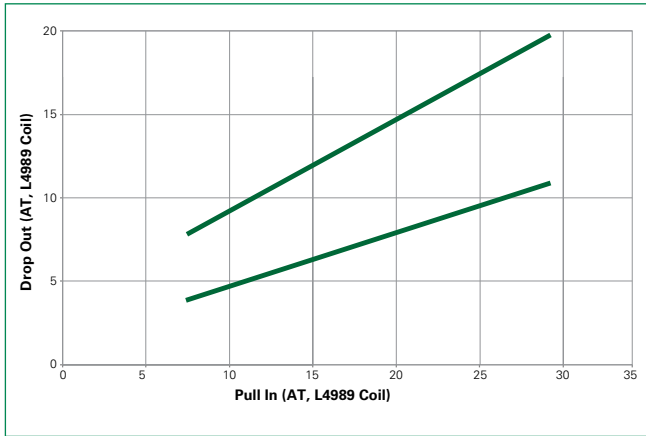
**Notes:**

- Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).
- Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.
- Pull-In Range - Contact Littelfuse for narrower AT ranges available.
- Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required below this value.
- Custom modifications of forming and/or cutting of reed switches are available. Please contact Littelfuse.

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**Drop-out vs. Pull-In Chart**



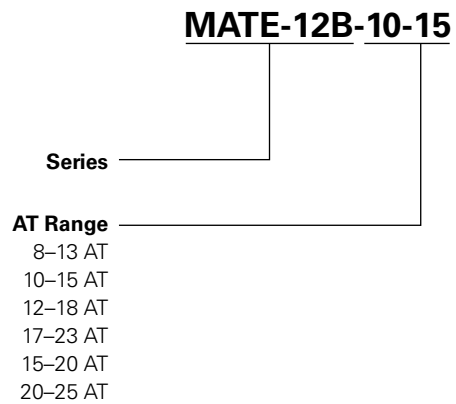
**Example:**

10–20 Ampere turns Pull-In

5–15 Ampere turns Drop-Out

**Note:** The chart represents the range of Drop-Out, minimum to maximum for a given Pull-In value.

**Part Numbering System**



**Example:**

10-15 AT product is MATE-12B-10-15

**Note:** These AT values are the before-modification values of the bare Reed Switch.

### Life Expectancy

- 5 Vdc, 20 mA, 100 Hz: Life = 100M cycles min
- 5 Vdc, 40 mA, 200 Hz: Life = 150M cycles B10
- 1 Vdc, 10 mA, 200 Hz Life = 1B cycles min

**Note:** Life test details available upon request.

### Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
Bulk	Bulk	1000	N/A	N/A

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