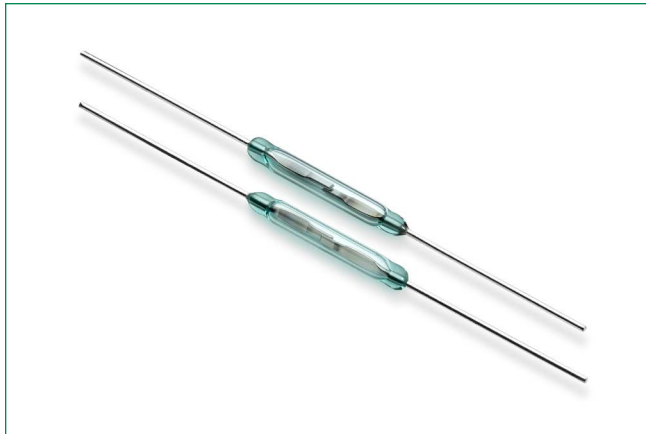


# MATE-12B Series

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

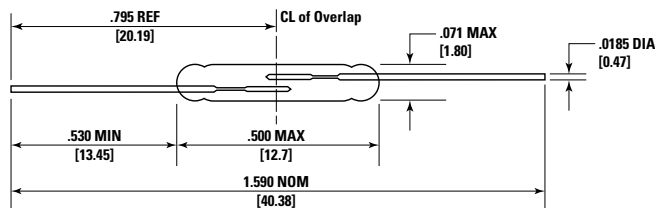


Samples

## 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.
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

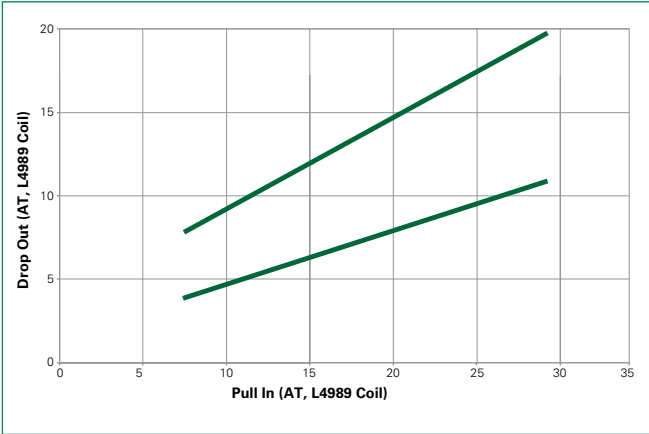
**Notes:**

- 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.

# MATE-12B Series

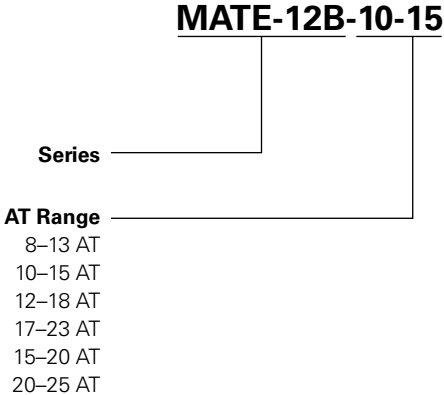
Long life > High Reliability > 12.7mm > Sub-miniature

**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

**Disclaimer Notice** - Information furnished is believed to be accurate and reliable. However, users should independently evaluate the suitability of and test each product selected for their own applications. Littelfuse products are not designed for, and may not be used in, all applications. Read complete Disclaimer Notice at <http://www.littelfuse.com/disclaimer-electronics>.