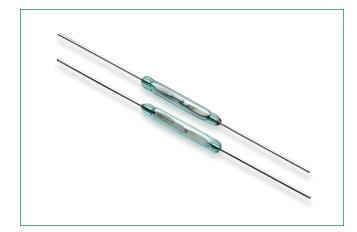
### Reed Switch Datasheet

# MATE-12B Series

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

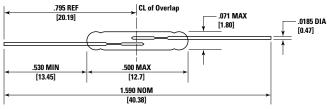




# **Additional Information**



## Dimension in inch [mm]



## Description

The MATE-12B Reed Switch is a sub-miniature, normally open switch with a 12.70 mm long x 1.80 mm diameter ( $0.500^{\circ} \times 0.071^{\circ}$ ) glass envelope, capable of switching 200 Vdc at 10 W. It has high insulation resistance of  $10^{12}$  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
- ROHS compliant
- Extending end product operating life and reliability, ideal for Automatic Test Equipment (ATE)

# Applications

- Reed Relay particularly for ATE application that requires long life
- Limit switching

- 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
- Appliance applications that require long life and high reliability switch

## **Agency Approvals**

Agency	Agency File Number	Ampere-Turns Range
c <b>RL</b> us	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> Breakdown <sup>4</sup>	Vdc - max. Vac - max. Vdc - min.	200 140 250
Current <sup>3</sup>	Switching <sup>2</sup> Carry	Adc - max. Aac - max. Adc - max.	0.5 0.35 1.0
Resistance	Contact, Initial Insulation	Ω - max. Ω - min.	0.100 10 <sup>12</sup>
Capacitance	Contact	pF - typ.	0.7
Temperature	Operating Storage ⁵	°C ℃	-40 to +125 -65 to +125

#### Notes:

1. Contact rating - Product of the switching voltage and current should never exceed the power rating. Contact Littelfuse for additional load/life information.
2. 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.
3. Electrical Load Life Expectance - Contact Littelfuse with voltage, current values along with type of load.

4. Breakdown Voltage - per MIL-STD-202, Method 301.

5. Storage Temperature - Long time exposure at elevated temperature may degrade soldarability 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:

1. Operate (including bounce)/Release Time - per EIA/NARM RS-421-A, diode suppressed coil (Coil II).

2. Shock and Vibration - per EIA/NARM RS-421-A and MIL-STD-202.

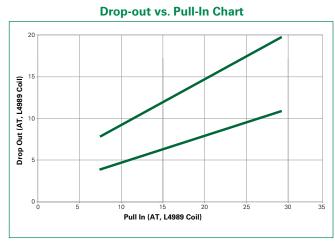
3. Pull-In Range - Contact Littelfuse for narrower AT ranges available.

A 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**

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#### Example:

10–20 Ampere turns Pull-In 5–15 Ampere turns Drop-Out

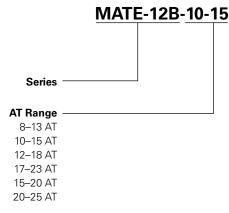
Note: The chart represents the range of Drop-Out, minimum to maximum for a given Pull-In value.

#### **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.

#### 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.

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

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