

# MASM-14 14mm Close-Differential Reed Switch



## Description

The MASM-14 surface mount reed switch is a close-differential, sub-miniature, normally open switch with a 14mm long x 2.28mm diameter (0.551" x 0.090") glass envelope, capable of switching 200Vdc at 10W.

This reed switch is a surface mount version of MACD-14. It has high insulation resistance of  $10^{10}$  ohms minimum and a contact resistance of less than 100 milliohms. Both reed switches are intended for use in applications that require low hysteresis between Pull-In and Drop-Out values.

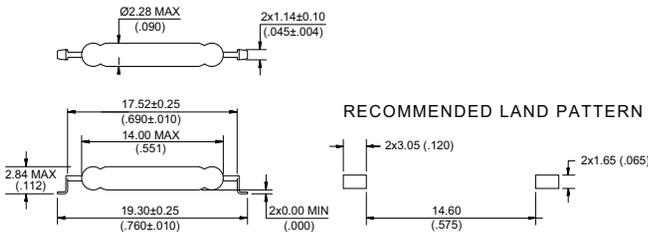
## Agency Approvals

Agency	Agency File Number	Ampere-Turns Range
	E47258 E471070	10-30 AT

**Note:** Contact Littelfuse for specific agency approval ratings.

## Dimensions

Dimensions in mm (inch)



**Note:** Land pattern is Littelfuse recommendation only. User is responsible for proper PCB design.

## Features

- Surface mount normally open switch
- Capable of switching 200Vdc or 0.5A at up to 10W
- Low close/open hysteresis (close differential)

## Benefits

- Hermetically sealed switch contacts are not affected by and have no effect on their external environment
- Zero operating power required for contact closure
- Excellent for switching micro-controller logic level loads

## Applications

- Position Sensing
- Level Sensing
- Security
- Industrial Controls
- Office Equipment
- Home Appliances

## Switch Type

Contact Form	A (SPST-NO)
Materials	Body: Glass Leads: Tin-plated Ni-Fe wire

**Note:** SPST-NO = Single-pole, single-throw, normally open

## Electrical Ratings

Contact Rating <sup>1</sup>		W/VA - max.	10
Voltage <sup>3</sup>	Switching <sup>2</sup>	Vdc - max.	200
	Breakdown <sup>4</sup>	Vac - max. Vdc - min.	140 200
Current <sup>3</sup>	Switching <sup>2</sup>	Adc - max.	0.50
	Carry	Aac - max.	0.35
		Adc - max.	1.00
Resistance	Contact, Initial Insulation	$\Omega$ - max.	0.100
		$\Omega$ - min.	$10^{10}$
Capacitance	Contact	pF - typ.	0.3
Temperature	Operating Storage <sup>5</sup>	$^{\circ}\text{C}$	-40 to +125
		$^{\circ}\text{C}$	-65 to +125

### Notes:

1. Contact rating - Product of the switching voltage and current should never exceed the wattage 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 Expectancy - 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 solderability of the leads.

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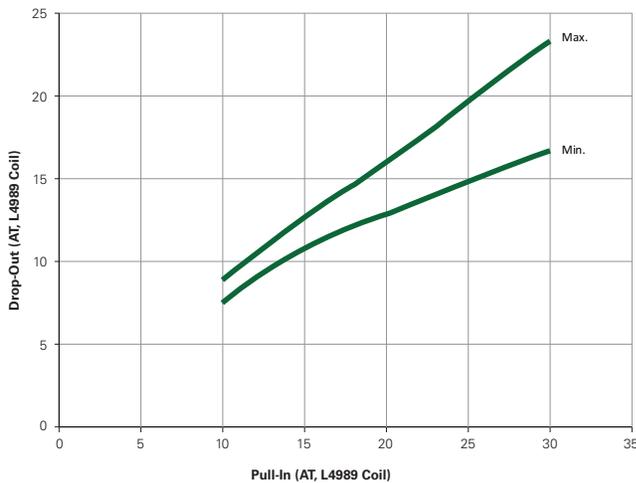
## Product Characteristics

Operating Characteristics		
Operate Time <sup>1</sup>		0.6ms - max.
Release Time <sup>1</sup>		0.2ms - max.
Shock <sup>2</sup>	11ms 1/2 sine wave	100G - max.
Vibration <sup>2</sup>	50-2000 Hertz	30G - max.
Resonant Frequency		5.3kHz typ
Magnetic Characteristics		
Pull-In Range <sup>3</sup>	Ampere Turns	10-15, 15-20, 20-25, 25-30
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. These AT ranges are the before modification AT of the MACD-14.
- Rating Sensitivity - The value at which contact ratings and operating characteristics are determined. Derating may be required below this value.

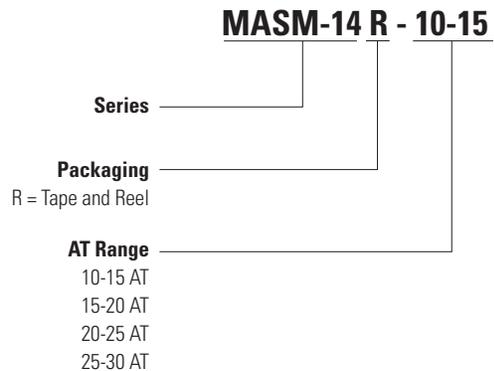
## Drop-Out vs. Pull-In Chart



**Note:**

Chart represents the range of Drop Out, min to max for a given Pull-In value of the MACD-14 prior to modification into the MASM-14.

## Part Numbering System



## Packaging

Packaging Option	Packaging Specification	Quantity	Quantity & Packaging Code	Taping Width
Tape and Reel	EIA-RS-481-1	3000	R	32mm

