



<b>SURFACE VEHICLE STANDARD</b>	<b>J1167™</b>	<b>SEP2021</b>
	Issued 1977-12 Reaffirmed 2014-01 Revised 2021-09	
Superseding J1167 MAY2008		
Motorcycle Stop Lamp Switch		

## RATIONALE

SAE J1167 has been revised to reclassify it as a SAE Standard.

### 1. SCOPE

This SAE Standard defines the test conditions, procedures, and performance specifications for 6 V and 12 V stop lamp switches intended for use on motorcycles.

#### 1.1 Purpose

The functional lifespan of a motorcycle stop lamp switch may be affected by specific in-service conditions imposed on it. To the extent practicable, those conditions should be replicated during the testing described in this document to ensure the adequate functioning of the device.

### 2. REFERENCES

#### 2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise specified, the latest issue of SAE publications shall apply.

##### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

SAE J575 Test Methods and Equipment for Lighting Devices for Use on Vehicles Less than 2032 mm in Overall Width

### 3. DEFINITIONS

#### 3.1 MOTORCYCLE STOP LAMP SWITCH

A motorcycle stop lamp switch is an operator activated device intended primarily to control the functioning of the stop lamp circuits. Secondly, the device may control the functioning of various accessories, such as disengaging cruise control, with operator activation of the brake control.

SAE Executive Standards Committee Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2021 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

**TO PLACE A DOCUMENT ORDER:** Tel: 877-606-7323 (inside USA and Canada)  
Tel: +1 724-776-4970 (outside USA)  
Fax: 724-776-0790  
Email: [CustomerService@sae.org](mailto:CustomerService@sae.org)  
<http://www.sae.org>

SAE WEB ADDRESS:

**For more information on this standard, visit**  
[https://www.sae.org/standards/content/J1167\\_202109/](https://www.sae.org/standards/content/J1167_202109/)

### 3.2 DESIGN LOAD

As used in this document, design load shall be defined as the electrical load specified by the number and type of bulbs (or other electrical load devices) to be operated by each circuit of the switch.

## 4. TEST PARAMETERS

### 4.1 Test Conditions

4.1.1 The voltage drop from the input terminal(s) to the corresponding output terminal(s) shall be measured at the design load and specified test voltage. If wiring is an integral part of the switch, the voltage drop measurement shall be made including 75 mm ± 6 mm of wire on each side of the switch terminals.

4.1.2 The manufacturer's specified wiring and connections shall be used. Terminals shall be changed periodically to assure terminal wear does not affect test results.

4.1.3 The resistance at the switch terminals with the switch open shall be the circuit resistance specified by the motorcycle manufacturer for the model for which the switch is intended.

### 4.1.4 Test Temperature

Unless otherwise specified, tests shall be performed at an ambient temperature of 24 °C ± 6 °C (75 °F ± 10 °F).

### 4.1.5 Test Voltage

The voltage at the switch terminals with the switch open shall be as follows:

**Table 1 - Supply voltage**

Rated Voltage	Supply Voltage
6 V	6.4 V ± 0.2 V
12 V	12.8 V ± 0.2 V

These voltages shall be maintained during the endurance test specified in 5.2.

### 4.2 Test Equipment

#### 4.2.1 Power Supply

The power supply shall comply with the following specifications:

a. Output current: The power supply shall be capable of supplying a continuous output current of at least 200% of the nominal current for the quantity of units being tested simultaneously.

b. Regulation:

Dynamic: The output voltage at the supply shall not deviate more than 1.0 V from zero to maximum load (including in-rush current) and should recover 63% of its maximum excursion within 100 ms.

Static: The output voltage at the supply shall not deviate more than 2% with changes in static load from zero to maximum (not including in-rush current) and means shall be provided to compensate for static input line voltage variations.

c. Ripple voltage: Maximum 300 mV peak-to-peak.

#### 4.2.2 Voltmeter

0 to 30 V maximum full scale deflection, accuracy ±1/2%.

NOTE: A digital meter having at least 3-1/2 digit readout with an accuracy of  $\pm 1\%$  plus one digit is recommended for millivolt readings.

#### 4.2.3 Ammeter

Capable of carrying full system load current, accuracy  $\pm 3\%$ .

### 5. TEST PROCEDURES

#### 5.1 Temperature Test

5.1.1 The switch shall be exposed for 1 hour, with no electrical load, to each of the following temperatures:

24 °C;  $\pm 6$  °C (75 °F;  $\pm 10$  °F)

74 °C; +0 °C, -3 °C (165 °F; +0 °F, -5 °F)

-32 °C; +3 °C, -0 °C (-25 °F; +5 °F, -0 °F)

5.1.2 Following each exposure, the switch shall be manually cycled at each temperature for ten cycles at the specified test voltage and design load. The switch shall be operable and function normally during each of these cycles.

5.1.3 The same switch shall be used for the endurance test described in 5.2.

#### 5.2 Endurance Test

See 5.1.3.

5.2.1 The switch shall be electrically connected to operate at its specified test voltage and design load.

5.2.2 The switch shall be operated for 100000 cycles. One complete cycle shall consist of energizing and de-energizing the design load (with a dwell in each position).

The test equipment shall be arranged to provide the following switch operating time requirements:

Travel time: 0.1 to 0.5 second (time from one position to next)

Dwell time: 1.0 to 2.0 seconds (time in each position)

Make and break rate: 10 to 15 mm/s

5.2.3 The voltage drop at the terminals shall be measured before and after completion of this test.

The voltage drop from the input terminal(s) to the corresponding output terminal(s) shall be measured at design load before and after the completion of this test and shall be the average of three consecutive readings. If wiring is an integral part of the switch, the voltage drop measurement shall be made including 75 mm  $\pm$  6 mm of wire on each side of the switch terminals.

NOTE: 100000 cycles represents 55 cycles of switch operation every day for 5 years.

#### 5.3 Other Tests

The switch shall be subjected to the following tests in SAE J575 and shall meet the requirements therein. A separate switch from that used in Section 5 may be used in each of the following tests:

4.3: Moisture Test

4.6: Corrosion Test