SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

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(R) Motorcycle Stop Lamp Switch

RATIONALE

This document has been changed to comply with the SAE Technical Standards Board Format.

It has also been reorganized, and rewritten for clarification and updated to acknowledge newer brake switch technology and practices.

References have been deleted where no longer needed.

Definitions have been revised, expanded and/or eliminated as needed.

The differences between the required number of test cycles for various engine displacements have been eliminated, based on the knowledge that motorcycle manufacturers commonly use the same brake switch on a variety of models. Related references and definitions have been eliminated.

Power supply requirements have been added.

Test voltages have been revised.

Test requirements, test procedures, and performance requirements have been separated into three sections.

All other section numbers have changed.

Temperature specifications have been rounded to whole degrees.

1. SCOPE

This SAE Recommended Practice defines the test conditions, procedures, and performance specifications for 6- 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.

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2. REFERENCES

2.1 Applicable Publications

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 724-776-4970 (outside USA), www.sae.org.

SAE J575 Test Methods and Equipment for Lighting Devices and Components 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. Secondarily, the device may control the functioning of various accessories, such as disengaging cruise control, with operator activation of the brake control.

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 ±1% plus one digit is recommended for millivolt readings.

4.2.3 Ammeter

Capable of carrying full system load current, accuracy ±3%.

5. TEST PROCEDURES

5.1 Temperature Test

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

24 °C; ±6 °C (75 °F; ±10 °F)
74 °C; +0°, –3 °C (165 °F; +0°, –5 °F)
–32 °C; +3°, –0 °C (–25° F; +5°, –0 °F)