SAE International™

SURFACE VEHICLE RECOMMENDED PRACTICE

SAE J2247

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Truck Tractor Power Output for Trailer ABS

RATIONALE

The SAE document J2247 was updated to include additional relevant ISO and SAE documents. Clarity and definitions was also expanded in the test procedure section and a statement to omit or not include full trailer applications within this document was also added to the Additional Recommendation section.

1. SCOPE

This SAE Recommended Practice identifies the minimum truck tractor electrical power output of the stop lamp and ABS (antilock brake system) circuits measured at the primary SAE J560 tractor trailer interface connector(s).

2. REFERENCES

2.1 Applicable Publications

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

2.1.1 SAE Publications

Available from SAE, 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 J560 Primary and Auxiliary Seven Conductor Electrical Connector for Truck-Trailer Jumper Cable

SAE J2222 Coiled Electrical Cable—Truck and Bus

SAE J2394 Seven Conductor Cable for ABS Power—Truck and Bus

2.1.2 ISO Publication

Available from ANSI, 25 West 43rd Street, New York, NY 10036-8002, Tel: 212-642-4900, www.ansi.org.

ISO 3731:1997 Road vehicles—Electrical connections between towing and towed vehicles with 24 volt systems—7 pole connector type 24S (supplementary)

2.1.3 FMVSS Publications

Available from the Superintendent of Documents, U.S. Government Printing Office, Mail Stop: SSOP, Washington, DC 20402-9320.

FMVSS 108 Lamps, Reflective Devises, and Associated Equipment

FMVSS 121 Air Brake Systems

3. DEFINITIONS

3.1 Primary Connector

As used in this standard refers to the receptacle and cable plug that provides power to safety lighting and the ABS as required by FMVSS 108 and FMVSS 121. (Referenced from SAE J560)

3.2 Auxiliary Connector

As used in this standard refers to the receptacle and cable plug that provides power to the auxiliary devices on the trailer, but does not provide power to safety lighting and the Antilock Braking System (ABS) as required by FMVSS 108 and/or FMVSS 121. (Referenced from SAE J560)

4. TECHNICAL REQUIREMENTS

The minimum DC voltage measured on the stop lamp and ABS circuits of the SAE J560 Primary Connector when tested in accordance with Section 5 of this document shall be 12.5 V for new vehicles. Note that compliance with the minimum voltage requirements may not be adequate for some multiple trailer ABS applications.

5. TEST PROCEDURE

5.1 Check battery condition. Tractor batteries are to be fully charged. (13.5 V minimum battery terminal voltage required during test.)

5.2 Run engine at 1000 rpm ± 100 rpm.

5.3 Connect 10 A load devices to the stop lamp circuit and the ABS power circuit. The loads are attached to the SAE J560 primary tractor/trailer interface connector(s), the trailer interface end, and grounded through the ground circuit of the SAE J560 primary connector(s).

a. Stop Lamp Circuit—Terminal 4—SAE J560
10 GA/5 mm^2 Red—SAE J2394 and SAE J2222

b. Continuous ABS Power—Terminal 7—SAE J560
10 GA/5 mm^2 Blue—SAE J2394 and SAE J2222

c. Ground Return to Towing Vehicle—Terminal 1—SAE J560
8 GA/8 mm^2 White—SAE J2394 and SAE J2222

NOTE: The SAE J560 Auxiliary Connector is not to be included in this test procedure.

5.4 Turn on “normal” electrical loads—such as heaters, AC, lights, radios, etc.

5.5 Check load device output after 5 min and adjust if necessary to ensure 10 A per circuit draw and confirm that the battery terminal voltage is 13.5 VDC minimum.

CAUTION: The electrical load devices may be HOT and cause injury if touched or ignite flammable material.