



SURFACE VEHICLE RECOMMENDED PRACTICE

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Battery Connections for 42 Volt Electrical Systems Tests and General Performance Requirements

RATIONALE

The technical report covers technology, products, or processes which are mature and not likely to change in the foreseeable future.

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1. **Scope**—This SAE Standard defines test methods and general requirements at all phases of development, production, and field analysis of electrical terminals, connectors, and components that constitute the direct connection to the storage battery of road vehicles having 42 volt (nominal) electrical systems.
2. **References**
 - 2.1 **Related Publications**—The following publications are for information purposes only and are not a required part of this document.
 - 2.1.1 SAE PUBLICATIONS—Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.
 - SAE J311—Fluid for Passenger Car Type Automatic Transmissions
 - SAE J1127—Battery Cable
 - SAE J1128—Low Tension Primary Cable
3. **Definitions**—Terms defined in the definitions or abbreviations sections are capitalized (i.e., Room Temperature, PLR, etc.)
 - 3.1 **Acceptance Criteria**—Generally, this is the final section in each test description. It specifies the requirements that all test samples must meet during or at the conclusion of that test.
 - 3.2 **Authorized Person**—One person will be responsible as the final authority for releasing a given part for production and/or for testing that part. Such person may delegate authority for testing that part, or may retain the authority. The Authorized Person, as used in the Specification, is the person with authority for making the final decision as to any question arising during testing to this Specification or for any deviations from any requirement of this Specification. Such Authorized Person is responsible for documenting any deviation he/she authorizes from this Specification. This documentation must be included in the final test report.
 - 3.3 **Blade Terminal**—This metal blade or pin inserts into the Receptacle Terminal. The Blade terminal is part of the Header Connector assembly
 - 3.4 **Engaging Force**—The force required to mate a separate pair of contacts (terminals) or a contact and mating test gage.
 - 3.5 **Extraction Force**—The force required to completely remove an individual contact (terminal) from its cavity in a connector.
 - 3.6 **Receptacle Connector**—This connector houses the Receptacle (Female) Terminal(s).
 - 3.7 **Header Connector**—A connector system that utilizes one or more fixed Blade Male Terminals inserted into a housing. The non-mating ends of the terminals are usually soldered to a printed circuit board or connect internally to the device.
 - 3.8 **Insertion Force**—The force required to insert an individual contact (terminal) into its cavity in a connector.
 - 3.9 **Leakage**—Refers to current passage between two or more conductors separated by a normally non-conductive medium when sufficient voltage potential exists between the conductors. By increasing the potential to 500 volts DC or more, the current flow, or Leakage, becomes measurable even though at a micro or nano-ampere scale. Leakage measured at a known voltage is useful in estimating contact air gap and detecting contaminants without specimen disassembly.
 - 3.10 **Mating Force**—The force required to mate Blade and Receptacle Connector halves or to completely seat a connector in a device Header or receptacle.