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# AEROSPACE RECOMMENDED PRACTICE

**SAE** ARP1892

REV.  
A

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Submitted for recognition as an American National Standard

## ELECTRICAL CONNECTORS FOR USE IN BATTERY POWERED GROUND SUPPORT EQUIPMENT

### 1. SCOPE:

- 1.1 This recommended practice describes a two-pole electric connector for use in battery powered ground support equipment, i.e., traction batteries. Alternatively, the connector can have two or more auxiliary contacts for auxiliary circuits. A handle may be added as an option to assist in connecting and disconnecting.

### 2. GENERAL DESCRIPTION:

- 2.1 The connector shall have two power contacts.
- 2.2 The amperage rating of the contacts shall be compatible with the size of the electrical conductors. The electrical conductors and contacts must provide sufficient cross-section of copper and carry both the operating currents and charging currents of the electrical vehicle.
- 2.3 The connector color shall designate the operating voltage and a key shall be provided to prevent mismatching connectors of different colors. The key must be an integral part of the connector housing and may not be removed.
- 2.4 The connector shall be clearly marked for polarity (+ and -). It shall be designed such that the positive contact of one connector cannot be mated with the negative contact of the mating connector. Further, it shall not allow even momentary contact between the positive and negative, so as to draw an arc.
- 2.5 Live parts shall be recessed from the face of the connector to reduce the possibility of shorting.
- 2.6 The removable portion of the connector pair shall be provided with means of being grasped during removal.

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## SAE ARP1892 Revision A

2.7 The connector shall be a recognized component by U.L.\* and C.S.A.\*

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### 3. PHYSICAL REQUIREMENTS:

#### 3.1 Housing:

3.1.1 The housing shall be insulated to operate at 600 volts. It shall be designed to pass a dielectric strength test of 2200 volts without leakage. The voltage should be applied for 60 s between each contact and between each contact and ground.

3.1.2 The housing insulation material shall be impact resistant and shall withstand the impact of normal service conditions. The supplier shall supply impact test data on request.

3.1.3 The connector housing shall be color coded to designate voltage per the list below:

- a. Yellow - 12 volts
- b. Red - 24 volts
- c. Gray - 36 volts
- d. Blue - 48 volts
- e. Green - 72 volts
- f. Black - 96 volts
- g. Orange - 128 volts

In addition, the connector housing may be permanently marked to indicate voltage or an adhesive label may be attached to specify the designated voltage.

3.1.4 The housing shall provide a means to secure mounting to the vehicle or battery.

#### 3.2 Contacts:

3.2.1 All contacts shall be silverplated copper to provide minimum voltage drop and heating. The contact design shall be such that the contacts shall wipe when engaged and disengaged.

3.2.2 The main contacts shall be marked or stamped to indicate the proper wire sizes.

3.2.3 The connector shall be designed to plug and unplug 10 000 times minimum without electric load. These connectors are not load-breaking devices except in an emergency.