

Submitted for recognition as an American National Standard

(R) VOLTAGE DROP FOR STARTING MOTOR CIRCUITS

- Scope**—The scope of this SAE Recommended Practice is to describe the maximum recommended voltage drop for starting motor circuits for 6 V through 32 V starters.
- References**—There are no referenced publications specified herein.
- Description**—The starting motor circuits in motor vehicles, excluding motors, relays, and solenoids, shall be designed so that the difference between the voltage at the storage battery terminals and the starting motor terminals including connections shall not exceed those shown in Table 1. The voltage drop per hundred amps ($V_d/100_a$) is defined with a normal circuit temperature of 20 °C (68 °F). Since there is no finite division between "light- and medium-duty" and "heavy-duty" applications, it is important that the engineer exercise judgment to make sure that the voltage drop selected does not have an adverse effect on the overall performance.

The negative side of the storage battery shall be securely and adequately grounded so that the voltage drop to the starting motor is held within the limits specified.

4. Maximum Voltage Drop

TABLE 1—MAXIMUM VOLTAGE DROP

System Voltage	($V_d/100_a$)	Use
6 V	0.12 V	Light- and Medium-Duty
12 V	0.200 V	Light- and Medium-Duty
24 V	0.400 V	Light- and Medium-Duty
12 V	0.10 V	Heavy-Duty
24 V to 32 V	0.17 V	Heavy-Duty

5. Notes

- Marginal Indicia**—The change bar (l) located in the left margin is for the convenience of the user in locating areas where technical revisions have been made to the previous issue of the report. An (R) symbol to the left of the document title indicates a complete revision of the report.

PREPARED BY THE SAE CRANKING MOTOR STANDARDS COMMITTEE

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