October 1968

Brief 68-10362

NASA TECH BRIEF

Rating of Electrical Wires in Vacuum Environments

An analytical and experimental investigation has shown that electrical conductors to be used in vacuum environments can be of smaller cross section (lighter weight) than previously prescribed following standard design guides.

Details of the investigation are available in a report which provides data on heat transfer and current-carrying capacity of wire and wire bundles. The data are arranged to facilitate design engineering selection of the correct wire size for a required current load in free-air, low-pressure oxygen, and vacuum environments. Curves relating the current for single wires and wire bundles to temperature permit the designer to determine the maximum allowable current for a given ambient temperature and maximum conductor temperature.

Note:

Copies of the report may be obtained from:
Technology Utilization Officer
Manned Spacecraft Center
Houston, Texas 77058
Reference: B68-10362

Patent status:

No patent action is contemplated by NASA.

Source: J. L. Schaefer and F. C. Svenson
of North American Rockwell Corporation
under contract to
Manned Spacecraft Center
(MSC-15108)

Category 01