

EXPERT COMMENTARY

Commentary on Indian Standard, 'IS 16711-2017 48 V LVDC Distribution System - Guidelines'

The Power Sector in India is undergoing a transformation with ambitious goals being set by the Government of India to provide affordable power to every resident year-round through its 'Power for All' scheme. An environment is being created through policies, regulations and agencies to facilitate working towards this goal.

Low Voltage Direct Current (LVDC) is seen increasingly as a green and efficient method of delivering energy, as well as a way of reaching the millions of people without any access to electricity. It's fully in line with the UN's Sustainable Development Goal 7, of providing universal access to affordable, reliable and modern energy services by 2030.

Bureau of Indian Standards (BIS) is driving the work relating to the formulation of Indian Standards on Low Voltage Direct Current (LVDC) Power Distribution Systems and its promotion. Work related to the formulation of Indian Standards on Low Voltage Direct Current (LVDC) Power Distribution Systems comes under the purview of Sectional Committee, ETD-50, under the Electrotechnical Department of BIS. Considering BIS role as the National Standards Body of India, BIS has published the standard for 'Guidelines for 48V LVDC (Extra-low voltage) distribution system IS 16711: 2017'. This standard covers the essential requirement for distribution of power from an extra-low voltage 48 V d.c. power source. This standard is also applicable to locations where electricity utility services are not available, and power is derived from single or multiple renewable energy sources. It also provides precautions to be taken during wiring installations.

The important Salient features of the standard are as follows:

- 48V Bus Voltage Nominal
- 5A max. per circuit
- No limit to the number of circuits
- Distribution topology similar to AC distribution
- AC wiring conductors of 1.5sq.mm, 2.5sq.mm or 4 sq.mm can be used depending on the length.
- AC over-current devices can be used
- Co-existence with AC

LVDC touches everything that uses electricity and standardization in the field of LVDC will help ensure that LVDC infrastructure is safe and reliable. They will allow regulators and systems administrators to benchmark systems from different vendors. They will also provide assurance to funding bodies, investors and insurers.

The work of the LVDC standardization community would be considered done, only when there will be electricity in every hut, home, village, town, district, state and country, and it should be clean, affordable, abundant and available 24 hours a day, every day of the week. These guidelines are the starting point for the standardization of the enabling technology - LVDC. It is anticipated that this will lead to the rapid development of other relevant standards.

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