

SYNOPSIS

Doc ETD 44 (14958)

IS 16504 (Part 11) : 2020/ IEC 60204-11 : 2018

IS Title : Safety of machinery – Electrical equipment of machines – Part 11: Requirements for equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV

a) Scope

This part of IS 16504 applies to electrical and electronic equipment and systems to machines, including a group of machines working together in a co-ordinated manner, which operate at nominal voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV a.c. or d.c. with nominal frequencies not exceeding 60 Hz.

In this document, the term HV equipment also covers the LV equipment forming an integral part of the equipment operating at high voltage. The requirements in this document primarily cover the parts operating at high-voltage except where explicitly stated otherwise.

NOTE 1 LV equipment not forming part of the HV equipment is covered by IS 16504 (Part 1).

NOTE 2 In this document, the term "electrical" includes both electrical and electronic matters (i.e. electrical equipment means both the electrical and the electronic equipment).

NOTE 3 This document does not apply to independent high-voltage power supply installations for which separate IS/IEC standards exist.

The electrical equipment covered by this document commences at the point of connection of the supply to the electrical equipment of the machine.

NOTE 4 For the requirements for high-voltage power supply installations, see IEC 61936-1.

This document is a generic safety standard. It does not cover all the requirements (e.g. guarding, interlocking or control) which are needed or required by other standards or regulations in order to safeguard personnel from hazards other than electrical hazards. Each type of machine has unique requirements to be accommodated to provide adequate safety.

NOTE 5 In some machines the high-voltage power supply can be produced by a step-up transformer (autotransformer), supplied by a low-voltage system (e.g. by a LV generator).

NOTE 6 In the context of this document, the term "person" refers to any individual; "personnel" are those persons who are assigned and instructed by the user or his agent(s) in the use and care of the machine in question.

For protection against electric shock from high-voltage equipment, this document refers to IEC 61936-1. When it comes to low-voltage equipment, this document refers to IS 16504 (Part 1).

NOTE 7 High- and low-voltage standards use different terms regarding protection against electric shock. Whereas high-voltage standards use the terms "direct contact" and "indirect contact", low-voltage standards correspondingly use "basic protection" and "fault protection".

Additional and special requirements can apply to the electrical equipment of machines that

- are used in the open air (i.e. outside buildings or other protective structures);
- use, process or produce potentially explosive material (e.g. paint or sawdust);
- are used in potentially explosive and/or flammable atmospheres;
- have special risks when producing or using certain materials;
- are used in mines.

Hazards as a result of noise and vibration are excluded from the scope of this document.

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