

(PREVIEW)
Indian Standard

**LOW-VOLTAGE SWITCHGEAR AND CONTROLGEAR —
SPECIFICATION**

**PART 5 CONTROL CIRCUIT DEVICES AND SWITCHING ELEMENTS
Section 2 Proximity Switches**

1.1 Scope and object

This part of IEC 60947 applies to inductive and capacitive proximity switches that sense the presence of metallic and/or non-metallic objects, ultrasonic proximity switches that sense the presence of sound reflecting objects, photoelectric proximity switches that sense the presence of objects and non-mechanical magnetic proximity switches that sense the presence of objects with a magnetic field.

These proximity switches are self-contained, have semiconductor switching element(s) and are intended to be connected to circuits, the rated voltage of which does not exceed 250 V 50 Hz/60 Hz a.c. or 300 V d.c. This Standard is not intended to cover proximity switches with analogue outputs.

The object of this standard is to state for proximity switches

- definitions;
- classification;
- characteristics;
- product information;
- normal service, mounting and transport conditions;
- constructional and performance requirements;
- tests to verify rated characteristics.

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 60947. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 60947 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(441):1984, International Electrotechnical Vocabulary (IEV) – Chapter 441: Switchgear, controlgear and fuses

IEC 60068-2-6:1995, Environmental testing – Part 2: Tests – Test Fc: Vibration (sinusoidal)

IEC 60068-2-14:1984, Environmental testing – Part 2: Tests – Test N: Change of temperature

IEC 60068-2-27:1987, Environmental testing – Part 2: Tests – Test Ea and guidance: Shock

IEC 60068-2-30:1980, Environmental testing – Part 2: Tests - Test Db and guidance: Damp heat, cyclic (12 + 12 hour cycle)

IEC 60364 (all parts), Electrical installations of buildings

IEC 60446:1989, Identification of conductors by colours or numerals

IEC 60536:1976, Classification of electrical and electronic equipment with regard to protection against electric shock

IEC 60947-1:1996, Low-voltage switchgear and controlgear – Part 1: General rules

IEC 60947-5-1:1997, Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and witching elements – Electromechanical control circuit devices

IEC 61000-4-2:1995, Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 2: Electrostatic discharge immunity test – Basic EMC publication

IEC 61000-4-3:1995, Electromagnetic compatibility (EMC) – Part 4: Testing and measurement techniques – Section 3: Radiated, radio-frequency, electromagnetic field immunity test

IEC 61000-4-4:1995, Electromagnetic compatibility (EMC) - Part 4: Testing and measurement techniques – Section 4: Electrical fast ‘transient\burst immunity test – Basic EMC publication

IEC 61020-5-1:1991, Electromechanical switches for use in electronic equipment – Part 5: Sectional specification for pushbutton switches – Section 1: Blank detail specification

ISO 630:1995, Structural steels – Plates, wide flats, bars, sections and profiles