(PREVIEW)

Indian Standard

POWER TRANSFORMERS

PART 8 APPLICATION GUIDE

1.1 Scope and object

This Standard applies to power transformers complying with the series of publications IEC 60076.

It is intended to provide information to users about:

— certain fundamental service characteristics of- different transformer connections and magnetic circuit designs, with particular reference to zero-sequence phenomena;
— system fault currents in transformers with YNynd and similar connections;
— parallel operation of transformers, calculation of voltage drop or rise under load, and calculation of load loss for three-winding load combinations:
— selection of rated quantities and tapping quantities at the time of purchase, based on prospective loading cases;
— application of transformers of conventional design to convertor loading;
— measuring technique and accuracy in loss measurement

Part of the information is of a general nature and applicable to all sizes of power transformers. Several chapters, however, deal with aspects and problems which are of the interest only for the specification and utilization of large high-voltage units.

The recommendations are not mandatory and do not in themselves constitute specification requirements. Information concerning loadability of power transformers is given in IEC 60354, for oil-immersed transformers, and IEC 60905, for dry-type transformers.

Guidance for impulse testing of power transformers is given in IEC 60722.

1.2 Normative references

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

IEC 60050(421):1990, International Electrotechnical Vocabulary (IEV) - Chapter 421: Power transformers and reactors

IEC 60076: Power transformers

IEC 60076-1 :1993, Power transformers - Part 1: General

IEC 60076-3:1980, Power transformers - Part 3: Insulation levels and dielectric tests

IEC 60289:1988, Reactors

IEC 60354:1991 , Loading guide for oil-immersed power transformers

IEC 60722:1982, Guide to the lightning impulse and switching impulse testing of power transformers and reactors

IEC 60905:1987, Loading guide for dry-type power transformers

IEC 60909:1988, Short-circuit current calculation in three-phase a.c. systems

IEC 60909-1 :1991 , Short-circuit current calculation in three-phase a.c. systems - Part 1: Factors for the calculation of short-circuit currents in three-phase a.c. systems according to IEC 60909 (1988)

IEC 60909-2:1992, Electrical equipment - Data for short-circuit current calculations in accordance with IEC 60909 (1988)

IEC 61378-1 : 1997, Convertor transformers - Part 1: Transformers for industrial applications

ISO 9001: 1994, Quality systems - Model for quality assurance in design, development, production. installation and servicing