BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

Draft Indian Standard

Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)

(Second Revision)

(ICS 29.160.01)

Rotating Machinery Sectional Committee, ETD 15	Last date for comments-09/08/2024

NATIONAL FOREWORD

This Draft Indian Standard (Second Revision) which is identical with IEC 60034-2-1:2024 'Rotating electrical machines – Part 2-1: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)' Issued by the International Electrotechnical Commission (IEC) is proposed to be adopted by the Bureau of Indian Standards on the recommendation of the Rotating Machinery Sectional Committee and approval of the Electrotechnical Division Council.

This standard was originally published in 2011 and subsequently revised in 2023. The revision of this standard has been undertaken to align it with the latest version of IEC 60034-2-1:2024.

The text of the IEC Standard has been approved as suitable for publication as an Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

a) Wherever the words 'International Standard' appears referring to this standard, they should be read as 'Indian Standard'.

b) Comma (,) has been used as a decimal marker, while in Indian Standards the current practice is to use a point (.) as the decimal marker.

In this adopted standard, reference appears to International Standards for which Indian Standards also exists. The corresponding Indian Standards, which are to be substituted, are listed below along with their degree of equivalence for the editions indicated:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
IEC 60027-1, Letter symbols to be used in electrical technology – Part 1: General	IS 3722 (Part 1) : 2023 / IEC 60027-1: 1992 Letter symbols and signs used In electrical technology - Part 1: General (*Second Revision*)	Identical
IEC 60034-1: 2022, Rotating electrical machines – Part 1:	IS 15999 (Part 1) : 2021/ IEC 60034-1: 2017 Rotating electrical machines - Part 1 : Rating	Identical

Rating and performance	and performance (Under Revision with latest Identical IEC)	
IEC 60034-4-1:2018, Rotating electrical machines – Part 4-1: Methods for determining electrically excited synchronous machine quantities from tests	IS 15999 (Part 4/Sec 1) : 2023 60034-4-1: 2018 Rotating electrical machines Part 4 Electrically excited synchronous machine quantities Section 1 Test methods (*First Revision*)	Identical
IEC 60034-30-1, Rotating electrical machines – Part 30-1: Efficiency classes of line operated AC motors (IE code)	IS 12615 : 2018/ IEC 60034-30-1 : 2014 Line operated three phase AC motors (IE Code) "Efficiency classes and performance specification" (Third Revision)	Technically Equivalent
IEC 60051(all parts), Direct acting indicating analogue electrical measuring instruments and their accessories	IS 1248 (Part 1) : 2021/ IEC 60051-1: 2016 Direct acting indicating analogue electrical measuring instruments and their accessories Part 1: Definitions and general requirements common to all parts (*Fifth Revision*)	Identical
	IS 1248 (Part 2) : 2021 60051-2: 2018 Direct acting indicating analogue electrical measuring instruments and their accessories Part 2: Special requirements for ammeters and voltmeters	Identical
	IS 1248 (Part 3) : 2021/ IEC 60051-3: 2018 Direct acting indicating analogue electrical measuring instruments and their accessories Part 3: Special requirements for wattmeters and varmeters	Identical
	IS 1248 (Part 4) : 2021/ IEC 60051-4: 2018 Direct acting indicating analogue electrical measuring instruments and their accessories title Part 4: Special requirements for frequency meters	Identical
	IS 1248 (Part 5) : 2021/ IEC60051-5: 2018 Direct acting indicating analogue electrical measuring instruments and their accessories Part 5: Special requirements for phase meters power factor meters and synchroscopes	Identical
	IS 1248 (Part 6) : 2021/ IEC 60051-6:2017 Direct acting indicating analogue electrical measuring instruments and their accessories Part 6: Special requirements for ohmmeters impedance meters and conductance meters	Identical
	IS 1248 (Part 7) : 2021/ IEC 60051-7: 2017 Direct acting indicating analogue electrical measuring instruments and their accessories Part 7: Special requirements for multi-function instruments	Identical
	IS 1248 (Part 8) : 2021/ IEC 60051-8: 2017	Identical

	Direct acting indicating analogue electrical measuring instruments and their accessories Part 8: Special requirements for accessories	
	IS 1248 (Part 9) : 2021/ IEC 60051-9:2019 Direct acting indicating analogue electrical measuring instruments and their accessories Part 9: Recommended test methods	Identical
IEC 60051-1, Direct acting indicating analogue electrical measuring instruments and their accessories – Part 1: Definitions and general requirements common to all parts	IS 1248 (Part 1) : 2021/ IEC 60051-1: 2016 Direct acting indicating analogue electrical measuring instruments and their accessories Part 1: Definitions and general requirements common to all parts (*Fifth Revision)*	Identical

The technical committee has reviewed the provisions of the following international standards referred in this adopted standard and decided that they are acceptable for use in conjunction with this standard.

International Standard	*Title*
IEC 60034-19	Rotating electrical machines – Part 19:Specific test methods for DC machines on conventional and rectifier-fed supplies
IEC 60034-29	Rotating electrical machines – Part 29: Equivalent loading and superposition techniques – Indirect testing to determine temperature rise

Only English language text has been retained while adopting it in this Indian Standard, and as such the page numbers given here are not the same as in the International Standard.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test, shall be rounded off in accordance with IS 2: 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

NOTE - The technical content of their document has not been enclosed as there are identical with the corresponding IEC standards for details, please refer the corresponding IEC 60034-2-1:2024 or kindly contact:

Head
Electrotechnical Department
Bureau of Indian Standards
9, Bahadur Shah Zafar Marg,
New Delhi-110002
Email: eetd@bis.gov.in
Telephone: 011-23231192 / 8284