

BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

(Not to be reproduced without the permission of BIS or used as a standard)

Draft Indian Standard

Adjustable speed electrical power drive systems – Part 2: General requirements – Rating specifications for adjustable speed AC power drive systems

(First Revision)

(ICS 29.160.30; 29.200)

Power Electronics Sectional
Committee, ETD 31

Last date for comments-07/09/2024

NATIONAL FOREWORD

This Draft Indian Standard (First Revision) which is identical with IEC 61800-2:2021 ‘Adjustable speed electrical power drive systems – Part 2: General requirements – Rating specifications for adjustable speed AC power drive systems’ Issued By The International Electrotechnical Commission (IEC) is proposed to be adopted by the Bureau of Indian Standards on the recommendation of the Power Electronics Sectional Committee and approval of the Electrotechnical Division Council.

This standard was originally published in 2015. The first revision of this standard has been undertaken to align it with the latest version of IEC 61800-2:2021.

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:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
IEC 60034-1:2017, Rotating electrical machines – Part 1: Rating and performance	IS 15999 (Part 1) : 2021/ IEC 60034-1: 2017 Rotating electrical machines - Part 1 : Rating and performance	Identical

IEC 60034-9, Rotating electrical machines – Part 9: Noise limits	IS 12065 : 1987/ IEC 60034-9 : 1972 Permissible limits of noise levels for rotating electrical machines	Technically Equivalent
IEC 60038, IEC standard voltages	IS 12360 : 1988/ IEC 60038 : 1988 Voltage bands for electrical installations including preferred voltages and frequency	Technically Equivalent
IEC 60050-151, International Electrotechnical Vocabulary (IEV) – Part 151: Electrical and magnetic devices	IS 1885 (Part 74) : 2012/ IEC 60050-151 : 2001 Electrotechnical vocabulary: Part 74 electrical and magnetic devices (First Revision)	Identical
IEC 60050-161, International Electrotechnical Vocabulary (IEV) – Part 161: Electromagnetic compatibility	IS 1885 (Part 85) : 2003/ IEC 60050-161 : 1990 Electrotechnical vocabulary: Part 85 electromagnetic compatibility	Identical
IEC 60050-441, International Electrotechnical Vocabulary (IEV) – Part 441: Switchgear, controlgear and fuses	IS 1885 (Part 17) : 2024/ IEC 60050-441: 1984 Electrotechnical Vocabulary Part 17 Switchgear and Control Gear (Second Revision)	Identical
IEC 60050-551, International Electrotechnical Vocabulary (IEV) – Part 551: Power electronics	IS 1885 (Part 27) : 2008/ IEC 60050-551:1998 Electrotechnical vocabulary: Part 27 power electronics (Third Revision)	Identical
IEC 60050-601, International Electrotechnical Vocabulary (IEV) – Part 601: Generation, transmission and distribution of electricity – General	IS 1885 (Part 30) : 2023/ IEC 60050-601: 1985 Electrotechnical Vocabulary: Part 30 Overhead transmission and distribution of electrical energy	Identical
IEC 60068 (all parts), Environmental testing	IS/ IEC 60068 Series Environmental testing	Identical
IEC 60068-2-27:2008, Environmental testing – Part 2-27: Tests – Test Ea and guidance: Shock	IS 9000 (Part 7/Sec 1) : 2018/ IEC 60068-2-27 : 2008 Basic environmental testing procedures for electronic and electrical items: Part 7 impact test: Sec 1 shock (Test Ea) (Second Revision)	Identical
IEC 60076 (all parts), Power transformers	IS 2026/ IEC 60076 (Series) Power transformers	Identical
IEC 60079 (all parts), Explosive atmospheres	IS/ IEC 60079 (Series) Explosive atmospheres	Identical
IEC 60146-1-1:2009, Semiconductor converters – General requirement and line commutated converters – Part 1-1: Specification of basic requirements	IS 16539 (Part 1/Sec 1) : 2017 IEC 60146-1-1 : 2009/ Semiconductor Converters Part 1 General and Line Commutated Converters Section 1 Specification of basic requirements	Identical
IEC 60721-3-0, Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Introduction	IS/IEC 60721-3-0) : 2020 Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 0 Introduction	Identical

IEC 60721-3-1:1997, Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 1: Storage	IS/IEC 60721-3-1) : 2018 Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 1 Storage	Identical
IEC 60721-3-2:1997, Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 2: Transportation	IS/IEC 60721-3-2) : 2018 Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 1 Transportation and Handling	Identical
IEC 60721-3-3:1994, Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 3: Stationary use at weather protected locations	IS/IEC 60721-3-3) : 2019 Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 3 Stationary use at weatherprotected locations	Identical
IEC 60721-3-4:1995, Classification of environmental conditions – Part 3: Classification of groups of environmental parameters and their severities – Section 4: Stationary use at nonweather protected locations	IS/IEC 60721-3-4) : 2019 Classification of Environmental Conditions Part 3 Classification of groups of environmental parameters and their severities Section 4 Stationary use at non- weatherprotected locations	Identical
IEC 61800-3, Adjustable speed electrical power drive systems – Part 3: EMC requirements and specific test methods	IS/IEC 61800-3 : 2017 Adjustable Speed Electrical Power Drive Systems Part 3 EMC Requirements and Specific Test Methods	Identical
IEC 61800-5-1, Adjustable speed electrical power drive systems – Part 5-1: Safety requirements – Electrical, thermal and energy	IS/IEC 61800-5-1) : 2016 Adjustable Speed Electrical Power Drive Systems Part 5 Safety Requirements Section 1 Electrical, thermal and energy	Identical
IEC 61800-5-2, Adjustable speed electrical power drive systems – Part 5-2: Safety requirements – Functional	IS/IEC 61800-5-2) : 2020 Adjustable Speed Electrical Power Drive Systems Part 5 Safety Requirements Section 2 Functional	Identical
IEC TR 61800-6, Adjustable speed electrical power drive systems – Part 6: Guide for determination of types of load duty and corresponding current ratings	IS 17123 (Part 6) : 2019/ IEC TR 61800-6 : 2003 Adjustable speed electrical power drive systems: Part 6 guide for determination of types of load duty and corresponding current ratings	Identical

The technical committee has reviewed the provision of the following International Standard referred in this adopted standard and has decided that it is acceptable for use in conjunction with this standard:

<i>International Standard</i>	<i>Title</i>
IEC 60050-112	International Electrotechnical Vocabulary (IEV) – Part 112: Quantities and units

IEC 60050-113:2011	International Electrotechnical Vocabulary (IEV) – Part 113: Physics for electrotechnology
IEC 60050-114,	International Electrotechnical Vocabulary (IEV) – Part 114: Electrochemistry
IEC 60050-442	International Electrotechnical Vocabulary (IEV) – Part 442: Electrical accessories
IEC TR 60146-1-2	Semiconductor convertors – General requirement and line commutated convertors – Part 1-2: Application guidelines
IEC 61800-7 (all parts)	Adjustable speed electrical power drive systems – Part 7: Generic interface and use of profiles for power drive systems
IEC TS 61800-8	Adjustable speed electrical power drive systems – Part 8: Specification of voltage on the power interface
IEC 61800-9-1	Adjustable speed electrical power drive systems – Part 9-1: Ecodesign for power drive systems, motor starters, power electronics and their driven applications – General requirements for setting energy efficiency standards for power driven equipment using the extended product approach (EPA) and semi analytic model (SAM)
IEC 61800-9-2	Adjustable speed electrical power drive systems – Part 9-2: Ecodesign for power drive systems, motor starters, power electronics and their driven applications – Energy efficiency indicators for power drive systems and motor starters
IEC TS 62578	Power electronics systems and equipment – Operation conditions and characteristics of active infeed converter (AIC) applications including design recommendations for their emission values below 150 kHz

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 61800-2:2021 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