BUREAU OF INDIAN STANDARDS
DRAFT FOR COMMENTS ONLY

Draft Indian Standard

Adjustable speed electrical power drive systems – Part 1: General requirements – Rating specifications for low voltage adjustable speed DC 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 61800-1:2021 'Adjustable speed electrical power drive systems – Part 1: General requirements – Rating specifications for low voltage adjustable speed DC 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 2019. The first revision of this standard has been undertaken to align it with the latest version of IEC 61800-1:2021.

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:

International Standard	*Corresponding Indian Standard*	*Degree of Equivalence*
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 60068 (all parts), Environmental testing	IS/ IEC 60068 Series Environmental testing	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 60364 (all parts), Low voltage electrical installations	IS 16996 : 2018/ IEC 60364-8-1 : 2014 Low-Voltage Electrical Installations â€" Energy Efficiency	Identical
	IS 16997 : 2018/ IEC 60364-7-712 Requirements for Low-Voltage Special Electrical Installations or Locations Solar Photovoltaic (PV) Power Supply Systems	Identical
	IS 3043 : 2018/ IEC 60364 (all parts), Code of practice for earthing (Second Revision)	Technically Equivalent
IEC 60664-1, Insulation coordination for equipment within low-voltage supply systems – Part 1: Principles, requirements and tests	IS 15382 (Part 1) : 2022/ IEC 60664-1:2020 Insulation Coordination for Equipment Within Low-Voltage Systems Part 1 Principles Requirements and Tests	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	IS/IEC 60721-3-3) : 2019 Classification of Environmental Conditions Part 3 Classification of groups	Identical

environmental parameters and their severities – Section 3: Stationary use at weatherprotected locations	of environmental parameters and their severities Section 3 Stationary use at weatherprotected locations	
IEC 60721-3-4:1995 Classification of environmental conditions – Part 3-4: Classification of groups of environmental parameters and their severities – Stationary use at nonweatherprotected 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 61800-2, Adjustable speed electrical power drive systems – Part 2: General requirements – Rating specifications for low voltage adjustable speed a.c. power drive systems	IS/IEC 61800-2 : 2015 Adjustable Speed Electrical Power Drive Systems Part 2 General Requirements â€" Rating Specifications for Low Voltage Adjustable Speed a.c. Power Drive Systems	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:

International Standard	*Title*
IEC 60050-811:1991	IEC TS 60034-25, Rotating electrical machines – Part 25: AC electrical machines used in power drive systems – Application guide
IEC 60721-2-6	Classification of environmental conditions – Part 2: Environmental conditions appearing in nature – Earthquake vibration and shock
IEC 61158 (all parts)	Industrial communication networks – Fieldbus specifications
IEC 61378 (all parts)	Converter transformers
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 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 61800-1:2021 or kindly contact:

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