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Draft Indian Standard

Time Relays for Industrial and Residential Use Part 1 Requirements and Tests

(First Revision)

ICS 29.120.70

Power Systems Relays Sectional
Committee, ETD 35

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NATIONAL FOREWORD

This draft Indian Standard (First Revision) which is identical with IEC 61812-1: 2023 “Time Relays for Industrial and Residential Use Part 1 Requirements and Tests” issued by the International Electrotechnical Commission (IEC) will be adopted by the Bureau of Indian Standards on the recommendation of the Power Systems Relays Sectional Committee and approval of the Electrotechnical Division Council.

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

- a) Wherever the words ‘International Standard’ appear 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.

This edition includes the following significant technical changes with respect to the previous edition:

- a) update of references;
- b) addition of requirements for risk assessment;
- c) addition of requirements for routine test;
- d) renumbering of clauses to bring them into a more logical order;
- e) clarification of the requirement for shock;
- f) addition of cybersecurity requirements for industrial automation and control systems;
- g) addition of environmentally conscious design requirement;
- h) addition of common data dictionary reference;
- i) addition of terms and definitions of relay types;
- j) addition of coupling relays in title;
- k) addition of coupling relays in scope.

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 60050-444:2002, International Electrotechnical Vocabulary (IEV) – Part 444: Elementary relays (available at www.electropedia.org)	IS 1885 (Part 9/Sec 1): 2019, Electrotechnical Vocabulary Part 9 Relays Section 1 Elementary relays (Third Revision)	Identical
IEC 60050-445:2010, International Electrotechnical Vocabulary (IEV) – Part 445: Time relays	IS 1885 (Part 9/Sec 2): 2019 IEC 60050-445: 2010, Electrotechnical Vocabulary Part 9 Relays Section 2 Time relays (Third Revision)	Identical
IEC 60085:2007, Electrical insulation – Thermal evaluation and designation	IS 1271: 2012 IEC 60085, Electrical insulation - Thermal evaluation and designation (Second Revision)	Identical
IEC 60112:2003/2020, Method for the determination of the proof and the comparative tracking indices of solid insulating materials	IS 2824: 2007 IEC 60112: 2003, Method for the determination of the proof and the comparative tracking indices of solid insulating materials (Second Revision)	Identical
IEC 60529:1989, Degrees of protection provided by enclosures (IP Code) IEC 60529:1989/AMD1:1999 IEC 60529:1989/AMD2:2013	IS/IEC 60529: 2001, Degrees of protection provided by enclosures (IP Code)	Identical
IEC 60068-2-2:2007, Environmental testing — Part 2-2: Tests — Test B: Dry heat	IS/IEC 60068-2-2): 2007 IEC 60068-2-2:2007, Environmental Testing Part 2: Tests - Test B Section 2: Dry Heat	Identical
IEC 60068-2-6:2007 Environmental testing — Part 2-6: Tests — Test Fc: Vibration (sinusoidal)	IS/IEC 60068-2-6): 2007, Environmental Testing Part 2 Tests Section 6 Test Fc: Vibration sinusoidal	Identical
IEC 60068-2-27:2008 Environmental testing — Part 2-27: Tests — Test Ea and guidance: Shock	IS 9000 (Part 7/Sec 1): 2018, Basic environmental testing procedures for electronic and electrical items: Part 7 impact test: Sec 1 shock (Test Ea) (Second Revision)	Identical
IEC 60664-1:2020, Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests	IS 15382 (Part 1): 2014 IEC 60664-1: 2007, Insulation coordination for equipment within low - Voltage systems: Part 1 principles, requirements and tests (First Revision) (Withdrawn)	Identical
IEC 60664-3:2016, Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, potting or moulding for protection against pollution	IS 15382 (Part 3): 2019 IEC 60664-3: 2006, Insulation coordination for equipment within low-voltage systems: Part 3 use of coating potting or moulding for protection against pollution	Identical
IEC 60664-4:2005, Insulation coordination for equipment within low-voltage systems – Part 4: Consideration of high-frequency voltage stress	IS 15382 (Part 4): 2017 IEC 60664-4: 2005, Insulation Coordination for Equipment Within Low-voltage Systems Part 4 Consideration of High-frequency Voltage Stress (First	Identical

	Revision)	
IEC 60695-2-11: 2000, Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)	IS/IEC 60695-2-11: 2014 IEC 60695-2-11: 2014, Fire Hazard Testing Part 2-11 Glowing / Hot-Wire Based Test Methods Glow-Wire Flammability Test Method for End-Products (GWEPT) (Withdrawn)	Identical
IEC 60695-10-2: 2003, Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test method	IS/IEC 60695-10-2: 2014 IEC 60695-10-2: 2014, Fire hazard testing: Part 10 Abnormal heat: Sec 2 ball pressure test method	Identical
IEC 61000-4-2:2008, Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test	IS 14700 (Part 4/Sec 4): 2018 IEC 61000-4-4: 2012, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 4 electrical fast transient / burst immunity test (Second Revision)	Identical
IEC 61000-4-3:2020, Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test	IS 14700 (Part 4/Sec 3): 2018 IEC 61000-4-24, Electromagnetic Compatibility (EMC) Part 4 Testing and Measurement Techniques Section 24 Test methods for protective devices for HEMP conducted disturbance (First Revision)	Identical
IEC 61000-4-4:2012, Electromagnetic compatibility (EMC) – Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test	IS 14700 (Part 4/Sec 4): 2018 IEC 61000-4-4: 2012, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 4 electrical fast transient / burst immunity test (Second Revision)	Identical
IEC 61000-4-5:2014, Electromagnetic compatibility (EMC) – Part 4-5: Testing and measurement techniques – Surge immunity test IEC 61000-4-5:2014/AMD1:2017	IS 14700 (Part 4/Sec 5): 2019 IEC 61000-4-5: 2017, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 5 surge immunity test (First Revision)	Identical
IEC 61000-4-6:2013, Electromagnetic compatibility (EMC) – Part 4-6: Testing and Measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields	IS 14700 (Part 4/Sec 6): 2016 IEC 61000-4-6: 2013, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 6 immunity to conducted disturbances, induced by radio - Frequency fields	Identical
IEC 61000-4-8:2009, Electromagnetic compatibility (EMC) – Part 4-8: Testing and measurement techniques – Power frequency magnetic field immunity test	IS 14700 (Part 4/Sec 8): 2018 IEC 61000-4-8: 2009, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 8 power frequency magnetic field immunity test (Second Revision)	Identical
IEC 61000-4-11:2020, Electromagnetic compatibility (EMC) – Part 4-11: Testing and measurement techniques – Voltage dips, short interruptions and voltage variations immunity	IS 14700 (Part 4/Sec 11): 2008 IEC 61000-4-11, Electromagnetic compatibility (EMC): Part 4 testing and measurement techniques: Sec 11 voltage dips, short interruptions and voltage variations immunity tests (Withdrawn)	Identical

tests for equipment with input current up to 16 A per phase		
IEC 61810-1:2015, Electromechanical elementary relays – Part 1: General and safety requirements IEC 61810-1:2015/AMD1:2019	IS 17064 (Part 1): 2018 IEC 61810-1: 2015, Electromechanical elementary relays: Part 1 general and safety requirements	Identical
CISPR 11:2015, Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement CISPR 11:2015/AMD1:2016 CISPR 11:2015/AMD2:2019	IS 6873 (Part 4): 1999, Limits and Methods of Measurement of Radio Disturbance Characteristics - Part 4: Industrial, Scientific and Medical (ISM) Radio-frequency Equipment (Withdrawn)	Identical
IEC 60947-5-1:2016, Low-voltage switchgear and controlgear – Part 5-1: Control circuit devices and switching elements – Electromechanical control circuit devices	IS/IEC 60947-5-1: 2009, Low - Voltage switchgear and controlgear: Part 5 control circuit devices and switching elements: Sec 1 electromechanical control circuit devices (First Revision)	Identical
ISO 9223:2012, Corrosion of metals and alloys – Corrosivity of atmospheres – Classification, determination and estimation	IS 14191: 1996, Corrosion of metals and alloys - Classification of corrosivity of atmospheres (Withdrawn)	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.

<i>International Standard</i>	<i>Title</i>
IEC 60947-5-4:2002	Low-voltage switchgear and controlgear — Part 5-4: Control circuit devices and switching elements — Method of assessing the performance of low-energy contacts — Special tests
IEC 61210:2010	Connecting devices — Flat quick-connect terminations for electrical copper conductors — Safety requirements
IEC 61984:2008	Connectors – Safety requirements and tests
IEC 60999-1:1999	Connecting devices — Electrical copper conductors — Safety requirements for screw-type and screwless -type clamping units — Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm ² up to 35 mm ² (included)

Only the 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 IEC Publication.

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 or analysis shall be rounded off in accordance with IS 2: 2022 ‘Rules for rounding of 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 61812-1:2023 or kindly contact:

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