

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

Uninterruptible power systems (UPS)
Part 3 Method of specifying the performance and test requirements

(First Revision of IS 16242 Part 3)

(ICS 29.200)

Power Electronics Sectional
Committee, ETD 31

Last date for comments - 27/01/2025

NATIONAL FOREWORD

This Draft Indian Standard (Part 3) (First Revision) which is identical with IEC 62040-3: 2021 'Uninterruptible power systems (UPS) –Part 3: Method of specifying the performance and test requirements' 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 2014. The first revision of this standard has been undertaken to align it with the latest version of IEC 62040-3: 2021.

This standard has been issued in several parts. Other parts in this series are:

- Part 1 General and safety requirements for UPS
- Part 2 Electromagnetic compatibility (EMC) requirements

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 60038:2009, IEC standard voltages	IS 12360 : 1988/IEC 60038: 2009 Voltage bands for electrical installations including preferred voltages and frequency	Identical
IEC 60068-2-1:2007, Environmental testing – Part 2-1: Tests – Test A: Cold	IS/IEC 60068-2-1 : 2007 Environmental testing Part 2 Tests Section 1 Test A: Cold	Identical
IEC 60068-2-2:2007, Environmental testing – Part 2-2: Tests – Test B: Dry heat	IS/IEC 60068-2-2: 2007 Environmental Testing Part 2 Tests - Test B Section 2 Dry heat	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) (<i>second revision</i>)	Identical
IEC 60068-2-78:2012, Environmental testing – Part 2-78: Tests – Test Cab: Damp heat, steady state	IS 9000 (Part 4) : 2020/IEC 60068-2-78 : 2012 Environmental testing Part 4 Tests - Test cab: Damp heat, Steady state (<i>second revision</i>)	Identical
IEC 60146-1-1:2009, Semiconductor converters – General requirements 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 60664-1:2020, 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 61000-3-2:2018, Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)	IS 14700 (Part 3/Sec 2) : 2020/IEC 61000-3-2: 2018 Electromagnetic Compatibility (EMC) Part 3 Limits Section 2 Limits for harmonic current emissions (equipment input current ? 16 A per phase) (<i>third revision</i>)	Identical
IEC 62040-1:2017, Uninterruptible power systems (UPS) – Part 1: Safety requirements	IS 16242 (Part 1) : 2014/IEC 62040-1 : 2008 Uninterruptible power systems (UPS) Part 1 general and safety requirements for UPS	Identical
IEC 62040-2:2016, Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements	IS 16242 (Part 2) : 2020/IEC 62040-2 : 2020 Uninterruptible power systems UPS Part 2 Electromagnetic compatibility EMC requirements (<i>first revision</i>)	Identical
ISO 4180:2019, Packaging – Complete, filled transport packages – General rules for the compilation of performance test schedules	IS 9733 : 2015/ISO 4180 : 2009 Packaging - Complete, filled transport packages - General rules for the compilation of performance test schedules (<i>first revision</i>)	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 60146-2:1999	Semiconductor converters – Part 2: Self-commutated semiconductor converters including direct d.c. converters
IEC 60364-1	Low-voltage electrical installations – Part 1: Fundamental principles, assessment of general characteristics, definitions
IEC 60364-5-52	Low-voltage electrical installations – Part 5-52: Selection and erection of electrical equipment – Wiring systems
IEC TR 60721-4-3:2001	Classification of environmental conditions – Part 4-3: Guidance for the correlation and transformation of environmental condition classes of IEC 60721-3 to the environmental tests of IEC 60068 – Stationary use at weather protected locations
IEC 61000-2-2:2002	Electromagnetic compatibility (EMC) – Part 2-2: Environment – Compatibility levels for low-frequency conducted disturbances and signaling in public low voltage power supply systems
IEC TS 61000-3-4:1998	Electromagnetic compatibility (EMC) – Part 3-4: Limits – Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A
IEC 61000-3-12:2011	Electromagnetic compatibility (EMC) – Part 3-12: Limits – Limits for harmonic currents produced by equipment connected to public low-voltage systems with input current > 16 A and ≤ 75 A per phase
ISO 3744:2010	Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Engineering methods for an essentially free field over a reflecting plane
ISO 3746:2010	Acoustics – Determination of sound power levels and sound energy levels of noise sources using sound pressure – Survey method using an enveloping measurement surface over a reflecting plane

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 62040-3: 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