



उत्पाद मैनुअल
आई एस 12640 (भाग 1) : 2024/ आईईसी 61008-1 : 2013 के अनुसार
घरेलु और समान प्रयोजनों के ललए लभन्न ओवरकरेंट सुरक्षा सलित अवलिष्ट करेंट चाललत पररपथ
लवजोजक (आर सी सी बी एस) भाग 1 सामान्य लनयम (तीसरा पुनरीक्षण)
के ललए

दस्तावेज़ सोंख्या – पीएम/आईएस 12640 (भाग 1)/ IEC 61008-1/4/ Jan 2025
भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना- I के तहत प्रमाणन के संचालन में एकरूपता और पारदर्शिता के लिए इस उत्पाद मैनुअल का उपयोग सभी क्षेत्रीय / शाखा कार्यालयों और लाइसेंसधारियों द्वारा संदर्भ सामग्री के रूप में किया जाएगा। दस्तावेज़ का उपयोग बीआईएस प्रमाणन प्राप्त करने के इच्छुक संभावित आवेदकों द्वारा भी किया जा सकता है।

PRODUCT MANUAL FOR
Residual Current Operated Circuit- Breakers Without Integral Overcurrent
Protection for Household and Similar Uses (RCCBs) Part 1 General Rules
(Third Revision)

According To IS 12640 (Part 1) : 2024/ IEC 61008-1 : 2013

Document No - PM/ IS 12640 (Part 1)/ IEC 61008-1/4/Jan 2025

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

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**PRODUCT MANUAL FOR
RESIDUAL CURRENT OPERATED CIRCUIT BREAKERS
WITHOUT INTEGRAL OVERCURRENT PROTECTION FOR
HOUSEHOLD AND SIMILAR USES (RCCBs)
ACCORDING TO IS 12640(Part 1):2024/IEC 61008-1:2013**

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2018 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	Product	:	IS 12640(Part 1):2024/IEC 61008-1:2013
	Title	:	Residual Current Operated Circuit Breakers without Integral Overcurrent Protection for Household and Similar Uses (RCCBs)- Part 1 General Rules
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	-
b)	Grouping guidelines	:	As per Annex A of IS 12640 (Part 1) : 2024 / IEC 61008-1 : 2013
c)	Sample Size	:	As per Annex A of IS 12640 (Part 1) : 2024 / IEC 61008-1 : 2013
3.	List of Test Equipment	:	Please refer ANNEX – A .
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – B .
5.	Possible tests in a day :	:	Please refer ANNEX – C .
6.	Scope of the Licence :		
	“Licence is granted to use Standard Mark as per IS 12640(Part 1):2024/IEC 61008-1 with the following scope:”		

	Name of the product	Residual Current Operated Circuit Breakers Without Integral Overcurrent Protection for Household & Similar Uses(RCCB)
	Classification	As applicable according to Cl. 4 of IS 12640 (Part 1) : 2024/ IEC 61008-1 : 2013

ANNEX A**List Of Test Equipment***Major test equipment required to test as per the Indian Standard*

S. No.	Test Equipment	Tests used in with Clause Reference
1.	28 Day Test Panel	Cl. 9.8, Cl. 9.22.2
2.	Endurance Panel	Cl. 9.10
3.	HV Test Panel	Cl. 9.7.2, Cl. 9.7.3, Cl. 9.7.7.3
4.	Leakage Current Test	Cl. 9.7.7.3
5.	Glow Wire Test	Cl. 9.14
6.	Climatic Chamber	Cl. 9.7.1, Cl. 9.13, 9.22.1
7.	Data logger & thermometer for temperature measurement	Cl. 9.8, Cl. 9.22.2, Cl. 9.9.3, Cl. 9.9.4
8.	Digital Multi meter	Cl. 9.8, Cl. 9.16
9.	AC/DC Clamp Meter	Cl. 9.8, Cl. 9.9, Cl. 9.10
10.	Insulation Tester	Cl. 9.7.2
11.	RCCB Test Panel – D0 sequence	Cl. 8.5

The above list is indicative only and may not be treated as exhaustive.

ANNEX B

Scheme Of Inspection And Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan i.e. a plan of regular testing and in-process controls, designed to ensure that the product bearing the Standard Mark conforms to all requirements of the Indian Standard.

1.2 The manufacturers shall define a Quality Assurance Plan defining the control unit (i.e. lot/batch etc.) and the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and submit the same to BIS Branch Office for information. The manufacturer shall comply with the same and maintain test records in accordance with para 2.4.

1.3 RECOMMENDED LEVELS OF CONTROL/CONTROL UNIT:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: **All the RCCBs of the same fundamental design, as indicated in Annex A of IS 12640 (Part 1) : 2024/ IEC 61008-1 : 2013, manufactured in a shift shall constitute a control unit..** The manufacturer has the choice to define their own control unit/batch/lot and submit the same to the BIS.

1.3.2 For the guidance of manufacturers in preparing the Quality Assurance Plan, recommended levels of control are given in Table 1.

1.3.3 The manufacturer shall ensure inspection and testing as per the Quality Assurance Plan submitted by them on the whole production of the factory which is covered by this plan. Alternatively, the manufacturer has the option of adherence to the quality plan as per levels of control recommended in column 3 of Table 1.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING- It is expected that manufacturers (licensees/applicants) will establish a suitably equipped and staffed in house laboratory (In house testing facility) for testing at least those parameters of the Indian Standard which require routine testing for ensuring quality of the product. This includes in-process controls as may be defined and put in place by the manufacturer and testing parameters/requirements which can only be performed in the factory.

2.1 For the guidance of manufacturers, Table 1 giving the recommended levels of control is given below. Column 2 of Table 1 indicates routine tests where test equipment is required in house as “R” or other tests which can be subcontracted as “S”. Subcontracting is permitted to BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.2 **For MSME manufacturers, the requirement of maintaining a laboratory/in-house testing facility for routine tests (indicated as “R” in Column 2 of Table 1) is also optional.**

2.2.1 MSME manufacturers may utilize common cluster-based facilities as per guidelines for the utilization of cluster-based test facilities by MSMEs or the provisions of Sharing of testing facilities or get testing done from BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 Large Scale manufacturers shall maintain an in-house laboratory equipped at least with test facilities for routine tests (indicated as “R” in Column 2 of Table 1), where different tests given in the specification shall be carried out in accordance with the method given in the specification. They shall also implement a calibration plan for the in-house test equipment.

2.3.1 Alternatively, in lieu of an in-house laboratory, large scale manufacturers can also utilize the provisions of Sharing of testing facilities as per the Guidelines for Grant of Licence available on BIS website www.bis.gov.in. (Under Conformity Assessment>Product Certification Process). Even for subcontracted tests, provisions for sharing of testing facilities can be utilized.

2.4 TEST RECORDS- The manufacturers maintaining an in-house laboratory or utilizing common cluster-based facilities or shared test facilities shall maintain test records for the tests carried out to establish conformity. For the tests being subcontracted to BIS recognized/empaneled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025, test reports issued by the laboratories shall be available for inspection by BIS.

3. MARKING –

- a) The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on **each RCCB and also on its packaging** provided always that the material so marked conforms to each requirement of the specification.
- b) Marking shall also be done as per Cl. 6 of IS 12640 (part 1): 2024/IEC 61008-1:2013.

3.1 Additional Marking requirements: The product shall also be marked with the following additional requirement on packaging:

- a) “For BIS certification details please visit www.bis.gov.in”

4. REJECTION - All the production which conforms to the Indian Standard and covered under the scope of this licence shall be marked with the Standard Mark. Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act, 2016.

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
9.1.3	Routine Tests						
D.2	Tripping test	D.2	IS 12640 (Part 1)	R	Each Piece	—	RCCBs which fail in any of the routine test shall not be marked. A separate record of such failures shall be maintained with adequate traceability.
D.3	Electric Strength Test	D.3	IS 12640 (Part 1)	R	Each Piece		
D.4	Performance of the test device	D.4	IS 12640 (Part 1)	R	Each Piece		
Test Sequence A							
6	Marking (except indelibility of marking)	6	IS 12640 (Part 1)	R	One	Every Control Unit	—
8.1.1	Mechanical Design (General)	8.1.1	IS 12640 (Part 1)	R	One	Every Control Unit	
8.1.2	Mechanical Design (Mechanism)	8.1.2	IS 12640 (Part 1)	R/S (for Cl. 9.11)	One	Every Control Unit	For compliance to tests as per Cl. 9.11, the frequency of once in five years on RCCBs of the same fundamental design shall be applicable
6	Indelibility of marking	6, 9.3	IS 12640 (Part 1)	R	One	Once in six months on RCCBs of the same fundamental design	—
8.1.3	Clearance & creepage distances (external parts)	8.1.3, 9.7.7.4.1, 9.7.7.4.2	IS 12640 (Part 1)	R	One		

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub- contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
8.1.2	Trip-free mechanism	8.1.2, 9.15	IS 12640 (Part 1)	R	One	Once in six months on RCCBs of the same fundamental design	—
8.1.4	Reliability of Screws, current-carrying parts and connections	8.1.4, 9.4	IS 12640 (Part 1)	R	One		
8.1.5	Reliability of Terminals for external conductors	8.1.5, 9.4 & 9.5, Annex- J,K or L	IS 12640 (Part 1)	R	One		
8.2	Protection against electric shock	8.2, 9.6	IS 12640 (Part 1)	R	One		
8.9	Resistance to heat	8.9, 9.13	IS 12640 (Part 1)	S	One		
8.1.3	Clearance & Creepage distances (internal parts)	8.1.3, 9.7.7.4.1, 9.7.7.4.2	IS 12640 (Part 1)	R	One		
8.1.4.4	Resistance to rusting	8.1.4.4, 9.25	IS 12640 (Part 1)	S	One		
8.10	Resistance to abnormal heat and to fire	8.10, 9.14	IS 12640 (Part 1)	S	Three		

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
Test Sequence B							
8.1.3	Resistance of the insulation of open contacts and basic insulation against an impulse voltage in normal conditions	8.1.3, 9.7.7.4	IS 12640 (Part 1)	R	Three	Once in six months on RCCBs of the same fundamental design	Refer note 1
9.7.7.5	Verification of the behavior of components bridging the basic insulation	9.7.7.5	IS 12640 (Part 1)	R	Three		
8.1.3, 8.3	Resistance to humidity	8.3, 9.7.1	IS 12640 (Part 1)	R	Three		
8.1.3, 8.3	Insulation resistance of the main circuit	8.3, 9.7.2	IS 12640 (Part 1)	R	Three		
8.1.3, 8.3	Dielectric Strength of the main circuit	8.3, 9.7.3	IS 12640 (Part 1)	R	Three		
8.1.3, 8.3	Insulation resistance and dielectric strength of auxiliary circuits	8.3, 9.7.4	IS 12640 (Part 1)	R	Three		
8.1.3, 8.3	Verification of clearances with the impulse withstand voltage	8.3, 9.7.7.2	IS 12640 (Part 1)	R	Three		

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
8.1.3, 8.3	Secondary circuit of detection transformers	8.3, 9.7.5	IS 12640 (Part 1)	R	Three	Once in six months on RCCBs of the same fundamental design	Refer Note 1
8.1.3, 8.3	Capability of control circuits connected to the main circuits	8.3, 9.7.6	IS 12640 (Part 1)	R	Three		
8.4	Temperature rise	8.4, 9.8	IS 12640 (Part 1)	R	Three		
8.16	Reliability at 40°C	8.16, 9.22.2	IS 12640 (Part 1)	R	Three	Once in a year on RCCBs of the same fundamental design	
8.16	Ageing of electronic components	8.16, 9.23	IS 12640 (Part 1)	R	Three		
Test Sequence C							
8.6	Mechanical and electrical endurance	8.6, 9.10	IS 12640 (Part 1)	R	Three	Once in a year on RCCBs of the same fundamental design	Refer Note 1
Test Sequence D							
8.5	Residual Operating characteristic	8.5, 9.9.1, 9.9.2, 9.9.3, 9.9.4	IS 12640 (Part 1)	R	Three	Once in six months on RCCBs of the same fundamental design	Refer Note 1
8.12	Behavior in the case of failure of line voltage	8.12, 9.17	IS 12640 (Part 1)	R	Three		

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub- contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
8.14	Unwanted tripping Behavior in the case of surge currents	8.14, 9.19	IS 12640 (Part 1)	S	Three	Once in six months on RCCBs of the same fundamental design	Refer Note 1
8.7	Performance at IΔm	8.7, 9.7.7.3, 9.11.2.3a)b)	IS 12640 (Part 1)	S	Three		
8.11	Test device	8.11, 9.16	IS 12640 (Part 1)	R	Three		
8.8	Resistance to mechanical shock and impact	8.8, 9.12	IS 12640 (Part 1)	R	Three	Once in a year on RCCBs of the same fundamental design	
8.13	Non-operating current under overcurrent conditions	8.13, 9.18	IS 12640 (Part 1)	R	Three	Once in six months on RCCBs of the same fundamental design	

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub- contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
8.7	Verification of the suitability of RCCBs for use in IT systems	8.7, 9.7.7.3, 9.11.2.3c)	IS 12640 (Part 1)	S	Three	Once in five years on RCCBs of the same fundamental design	Refer Note 1
Test Sequence E							
8.7	Coordination at I _{nc}	8.7, 9.7.7.3, 9.11.2.4a)	IS 12640 (Part 1)	S	Three	Once in five years on RCCBs of the same fundamental design	Refer Note 1
8.7	Performance at I _m	8.7, 9.7.7.3, 9.11.2.2	IS 12640 (Part 1)	S	Three		
Test Sequence F							
8.7	Coordination at I _m	8.7, 9.7.7.3, 9.11.2.4b)	IS 12640 (Part 1)	S	Three	Once in five years on RCCBs of the same fundamental design	Refer Note 1

TABLE 1

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Methods			No. of Sample	Frequency	Remarks
		Clause	Reference				
8.7	Coordination at I _{Δc}	8.7, 9.7.7.3, 9.11.2.4c)	IS 12640 (Part 1)	S	Three	Once in five years on RCCBs of the same fundamental design	Refer Note 1
Test Sequence G							
8.16	Reliability (climatic test)	8.16, 9.22.1	IS 12640 (Part 1)	S	Three	Once in a year on RCCBs of the same fundamental design	Refer Note 1
Test Sequence H, I, J							
8.17	Electromagnetic Compatibility	9.24	IS 12640 (Part 1)	S	Three	Once in five years on RCCBs of the same fundamental design	Refer Note 1

Note-1: In case of failure, repeat testing to be carried out as per Table A.2 of IS 12640 (Part 1): 2024/ IEC 61008-1: 2013.

ANNEX C

Possible Tests in a day

- Tripping Test
- Electric Strength Test
- Performance of the test device
- Indelibility of Marking
- Clearance & Creepage distance (only for item 1 & 3 of Table 5 of IS 12640 (Part 1))
- Trip free mechanism
- Reliability of screws, current carrying parts and connections
- Reliability of terminals for external conductors
- Protection against electric shock
- Verification of resistance of the insulation of open contacts and basic insulation against an impulse voltage in normal conditions
- Verification of the behavior of components bridging the basic insulation
- Capability of control circuits connected to the main circuits
- Residual Operating Characteristics
- Behavior in case of failure of line voltage