

**भारतीय मानक ब्यूरो
(केंद्रीय मुहर विभाग III)**

हमारा संदर्भ : सी एम डी - III/16 : 12640(Pt.2)

31 जुलाई 2018

विषय : आई एस 12640 (Part 2):2016/IEC 61009-1:2012 के संशोधन संख्या 2 एवं 3 का अनुपालन

इसे उपरोक्त विषय का संदर्भ प्राप्त है।

सक्षम प्राधिकारी ने अनुपालन हेतु दिशानिर्देश/ एस आई टी को अनुमोदित कर दिया है।

सभी क्षेत्रीय और शाखा कार्यालयों से अनुरोध है की उपरोक्त पुनरीक्षित दिशानिर्देश /एस आई टी का अनुपालन सुनिश्चित करें।

**(अलिस्मिता खाग)
वैज्ञानिक बी (सी एम डी-III)**

प्रमुख (सी एम डी-III)

सभी क्षेत्रीय /शाखा कार्यालय

प्रतिलिपि : आई टी एस विभाग - बी आई एस इंटरनेट पर डालने हेतू

CENTRAL MARKS DEPARTMENT-III

Our Ref: CMD III/16:12640(Pt. 2)

31 July 2018

Subject : Implementation of Amendment No. 2 and 3 to IS 12640 (Part 2) : 2016 / IEC 61009-1:2012 'Residual Current Operated Circuit-Breakers with Integral Overcurrent Protection for Household and Similar Uses (RCBOs)'

1. Amendment No. 2 and 3 to IS 12640(Part 2):2016/IEC 61009-1:2012 has been published. The last date of implementation of Amendment No.2 is 30.10.2018.

2. Amendment No.3 rectifies the discrepancies brought about by Amendment No.2, hence it has been decided to implement it with immediate effect.

3. Consequent upon the issuance of the amendments, existing STI has been revised as Doc: SIT 12640(Pt.2)/1, July 2018.

4. All BOs shall inform the Licensees/Applicants under their jurisdiction about implementation of the above amendments.

5. In case of non-implementation of the amendments necessary actions may be initiated.

Alismita Khag
Sc.B(CMD-III)

Head (CMD-III)

DDG(Certification)

**SCHEME OF INSPECTION AND TESTING FOR CERTIFICATION OF
RESIDUAL CURRENT OPERATED CIRCUIT BREAKERS WITH INTEGRAL
OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR USES (RCBOs)
ACCORDING TO IS 12640 (PART 2):2016/IEC 61009-1:2012**

1. LABORATORY - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.

1.1 The manufacturer shall prepare a calibration plan for the test equipment.

2. TEST RECORDS - The manufacturer shall maintain test records for the tests carried out to establish conformity.

3. LABELLING AND MARKING - As per the requirements of IS 12640 (Part 2):2016/ IEC 61009-1:2012. In addition, each RCBO or the carton in which the RCBOs are packed shall carry the identification mark in code or otherwise for traceability.

4. CONTROL UNIT - All the RCBOs of the same fundamental design manufactured in a shift shall constitute a control unit.

5. LEVELS OF CONTROL - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.

6. REJECTIONS - 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 2)	R	Each Piece	—	RCBOs 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 2)	R	Each Piece	—	
D.4	Performance of the test device	D.4	IS 12640 (Part 2)	R	Each Piece	—	
Test Sequence A							
6	Marking (except indelibility of marking)	6	IS 12640 (Part 2)	R	One	Every Control Unit	—
8.1.1	Mechanical Design (General)	8.1.1	IS 12640 (Part 2)	R	One		
8.1.2	Mechanical Design (Mechanism)	8.1.2	IS 12640 (Part 2)	R/S (for Cl. 9.11)	One		
6	Indelibility of marking	6,9.3	IS 12640 (Part 2)	R	One	Once in six months on RCBOs 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 2)	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				
8.1.6	Non-interchangeability	8.1.6	IS 12640(Part 2)	R	One	Once in six months on RCBOs of the same fundamental design	—
8.1.2	Trip-free mechanism	8.1.2,9.11	IS 12640 (Part 2)	R	One		
8.1.4	Reliability of Screws, current-carrying parts and connections	8.1.4, 9.25, 9.4	IS 12640 (Part 2)	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 2)	R	One		
8.2	Protection against electric shock	8.2, 9.6	IS 12640 (Part 2)	R	One		
8.9	Resistance to heat	8.9, 9.14	IS 12640 (Part 2)	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 2)	R	One		
8.1.4.4	Resistance to rusting	8.1.4.4, 9.25	IS 12640 (Part 2)	S	One		
8.10	Resistance to abnormal heat and to fire	8.10, 9.15	IS 12640 (Part 2)	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 2)	R	Three	Once in six months on RCBOs of the same fundamental design	—
9.7.7.5	Verification of the behavior of components bridging the basic insulation	9.7.7.5	IS 12640 (Part 2)	R	Three		
8.1.3, 8.3	Resistance to humidity	8.3, 9.7.1	IS 12640 (Part 2)	R	Three		
8.1.3, 8.3	Insulation resistance of the main circuit	8.3, 9.7.2	IS 12640 (Part 2)	R	Three		
8.1.3, 8.3	Dielectric Strength of the main circuit	8.3, 9.7.3	IS 12640 (Part 2)	R	Three		
8.1.3, 8.3	Insulation resistance and dielectric strength of auxiliary circuits	8.3, 9.7.4	IS 12640 (Part 2)	R	Three		
8.1.3, 8.3	Verification of clearances with the impulse withstand voltage	8.3, 9.7.7.2	IS 12640 (Part 2)	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 2)	R	Three	Once in six months on RCBOs of the same fundamental design	—
8.1.3, 8.3	Capability of control circuits connected to the main circuits	8.3, 9.7.6	IS 12640 (Part 2)	R	Three		
8.4	Temperature rise	8.4, 9.8	IS 12640 (Part 2)	R	Three		
8.16	Reliability at 40°C	8.16, 9.22.2	IS 12640 (Part 2)	R	Three	Once in a year on RCBOs of the same fundamental design	
8.16	Ageing of electronic components	8.16, 9.23	IS 12640 (Part 2)	R	Three		
Test Sequence C							
8.6	Mechanical and electrical endurance	8.6, 9.10	IS 12640 (Part 2)	R	Three	Once in a year on RCBOs of the same fundamental design	—
8.7	Performance at reduced short-circuit currents (Verification of the RCBO after the short circuit test)	8.7, 9.12.11.2.1, 9.12.12	IS 12640 (Part 2)	S	Three	Once in five years on RCBOs 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	Short circuit test for verifying the suitability of RCBOs for use in IT systems (Verification of the RCBO after short circuit tests)	8.7, 9.12.11.2.2 9.12.12	IS 12640 (Part 2)	S	Three	Once in five years on RCBOs of the same fundamental design	—
Test Sequence D							
8.5, 8.15	Operating characteristics under Residual current conditions	8.5, 9.9.1	IS 12640 (Part 2)	R	Three	Once in six months on RCBOs of the same fundamental design	—
8.12	Behavior in the case of failure of line voltages	8.12, 9.17	IS 12640 (Part 2)	R	Three		
8.14	Behavior in case of surge currents	8.14, 9.19	IS 12640 (Part 2)	R	Three		
8.7	Performance at $I_{\Delta m}$	8.7, 9.12.13	IS 12640 (Part 2)	R	Three		
8.11	Test Device	8.11, 9.16	IS 12640 (Part 2)	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				
Test Sequence E							
8.5.2	Overcurrent operating characteristics	8.5.2, 9.9.2	IS 12640 (Part 2)	S	Three	Once in five years on RCBOs of the same fundamental design	—
8.8	Resistance to mechanical shock and impact	8.8, 9.13	IS 12640 (Part 2)	R	Three	Once in a year on RCBOs of the same fundamental design	
8.7	Short-circuit performance at 1500A	9.12.11.3, 9.12.12	IS 12640 (Part 2)	S	Three	Once in five years on RCBOs of the same fundamental design	
Test Sequence F							
8.7	Performance at service short-circuit capacity	8.7, 9.12.11.4(b), 9.12.12	IS 12640 (Part 2)	S	Three	Once in five years on RCBOs of the same fundamental design	—
8.7	Performance at rated short-circuit capacity	8.7, 9.12.11.4(c), 9.12.12.2	IS 12640 (Part 2)	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 G							
8.16	Reliability (climatic test)	8.16, 9.22.1	IS 12640 (Part 2)	S	Three	Once in a year on RCBOs of the same fundamental design	—
Test Sequence H,I,J							
9.24	Electromagnetic Compatibility	9.24	IS 12640 (Part 2)	S	Three	Once in five years on RCBOs of the same fundamental design	—

Note-1: Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empanelled by the Bureau.

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.