भारतीय मानक ब्यूरो
(केंद्रीय मुहर विभाग III)

हमारा संदर्भ : सी एम डी - III/16 : IS/IEC 60898-1 14 मई 2018

विषय : IS/IEC 60898 (Part 1):2015 के लिए पुनरीक्षित एस टी आई का अनुपालन

इसे उपरोक्त विषय का संदर्भ प्राप्त है।

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

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

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

<u>प्रमुख (सी एम डी-III)</u>

सभी क्षेत्रीय /शाखा कार्यालय
प्रतिलिपि : आई टी एस विभाग - बी आई एस इंट्रानेट पर डालने हेतू

CENTRAL MARKS DEPARTMENT III

Our Ref: CMD III/16: IS/IEC 60898-1 14 May 2018

Subject: Revised STI for implementation of IS/IEC 60898 (Part 1):2015

This has reference to the subject mentioned above.

The Competent Authority has approved the revised STI for implementation.

All ROs/BOs are requested to ensure the implementation of the above revised STI.

(Alismita Khag)
Sc B(CMD III)

Head (CMD III)

Circulated to: All ROs/BOs

Copy to: ITS for hosting on Intranet

SCHEME OF TESTING AND INSPECTION FOR CERTIFICATION OF ELECTRICAL ACCESSORIES-CIRCUIT-BREAKERS FOR OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS - CIRCUIT BREKAERS FOR a.c. OPERATION ACCORDING TO IS/IEC 60898 (PART 1):2015

1. LABORATORY

1.1 A laboratory shall be maintained which shall be suitably equipped and staffed, where different tests given in the Specification shall be carried out in accordance with the methods given in the Indian Standard.

1.2 All test equipments shall be periodically checked and calibrated and records of such checks/calibration shall be maintained.

2. TEST RECORDS

2.1 All records of tests as per this Scheme of Testing and Inspection shall be kept in suitable forms approved by the Bureau.

2.2 Copies of any records and other connected papers that may be required by BIS shall be made available at any time on request.

3. QUALITY CONTROL

3.1 It is recommended that, as far as possible, Statistical Quality Control (SQC) methods may be used for controlling the quality of the product during production as envisaged in this Scheme [see IS 397 (various parts)].

3.2 In addition, effort should be made to gradually introduce a Quality Management System in accordance with IS/ISO 9001.

4. STANDARD MARK

4.1 The Standard Mark, as given in Column (1) of the First Schedule of the licence shall be marked in a durable manner on each Circuit Breaker provided always that the Circuit Breaker to which the Standard Mark is applied conforms to every requirement of the specification.

5. MARKING

5.1 Circuit Breakers shall be marked as per Clause 6 of IS/IEC 60898-1:2015.

5.2 Further each Circuit Breaker shall carry the identification mark in code or otherwise to enable the date and control unit of manufacture to be traced back to factory records.

6. LEVELS OF CONTROL

6.1 The tests as indicated in Table 1, and at the levels of control specified therein, shall be carried out on the whole production of the factory covered by this scheme and appropriate records maintained in accordance with clause 2 above and charts may be maintained as per clause 3 above. All the production which conforms to the Indian Standard and covered by this licence shall be marked with Standard Mark.

7. CONTROL UNIT

7.1 For the purpose of this Scheme all the Circuit Breakers of the same fundamental design manufactured in a day shall constitute a control unit.

7.2 On the basis of the test and inspection results, decision regarding conformity or otherwise of a lot with the requirements of the Specification shall be taken.

7.3 Circuit Breakers which fail in any of the routine test (the tests which are required to be complied with by each Circuit Breaker as per Annex I of IS/IEC 60898-1) shall not be marked. A separate record of such failures shall be maintained with adequate traceability.

7.4 In case of a failure in any of the remaining tests, marking of the product shall be suspended by the firm and necessary improvements shall be made. Marking may be resumed when fresh samples tested from improved production meet the test(s) in which failure had occurred and records of such instances to be maintained.

7.5 In respect of all other clauses of the Specification and at all stages of manufacture, the factory shall maintain appropriate control and checks to ensure that the product conforms to various requirements of the Specification.

7.6 In case testing facilities for short circuit capacity tests are not available at the works of the firm, those tests may be got done by the licensee in an independent laboratory at the stipulated levels of control and test certificates obtained and to be made available to BIS whenever required.

8. TYPE TESTING AND RANGE

8.1 The product shall be deemed to conform to the Standard if the tests as per test sequence given in Annex C of IS/IEC 60898-1:2015 are complied with. For considering ranges, details of sampling procedure given in Annex C of IS/IEC 60898-1:2015 shall be followed.

9. REJECTIONS

9.1 A separate record shall be maintained giving information on quantity, serial no. of the product etc. relating to the rejection of the production not conforming to the requirements of the Specification and the method of disposal. Such material shall in no case be stored together with that conforming to the Specification and shall be destroyed beyond use.

10. SAMPLES

10.1 The licensee shall supply, free of charge, the samples required in accordance with the Bureau of Indian Standards (Certification) Regulations, 1988, as amended from time to time, from the factory or godown. BIS may draw samples from the open market, if available.

11. REPLACEMENT

11.1 Whenever a complaint is received soon after the goods with Standard Mark have been purchased and used, and if there is adequate evidence that the goods have not been misused, defective goods shall be replaced free of cost by the licensee in case the complaint is found to be genuine and the warranty period (where applicable) has not expired. The final authority to judge the conformity of the product to the Indian Standard shall be with BIS.

11.2 In the event of any damage caused by the goods bearing the Standard Mark, or any claim being filed by the consumers against BIS Standard Mark and not "conforming to" the relevant Indian Standard, entire liability arising out of such non-conforming product shall be of the licensee and BIS shall not in any way be responsible in such case.

12. STOP MARKING

12.1 The marking of the product shall be stopped under intimation to BIS if, at any time, there is some difficulty in maintaining the conformity of their product to the Specification, or the testing equipment goes out of order or due to any other reason. The marking may be resumed as soon as the defects are removed under intimation to BIS.

12.2 The marking of the product shall be stopped immediately if directed to do so by BIS for any reason. The marking may then be resumed only after permission by BIS. The information regarding resumption of marking shall also be sent to BIS.

13 PRODUCTION DATA

The licensee shall send to BIS a statement of quantity produced, marked and exported by him and the value thereof at the end of each operative year of the licence as per the enclosed proforma which has to be authenticated by a Chartered Accountant.

IS/IEC 60898-1:2015
ELECTRICAL ACCESSORIES-CIRCUIT-BREAKERS FOR OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS CIRCUIT BREKAERS FOR a.c. OPERATION
TABLE 1 LEVELS OF CONTROL

TEST DETAILS				LEVELS OF CONTROL			
Clause	**Requirements**	**TEST MEHODS**		**No. of Samples**	**Lot Size**	**Frequency**	**Remarks**
		Clause	**Reference**				
Annex-I	**Routine Tests**						
I.2	Tripping Test	I.2	IS/IEC 60898-1	Each piece	—	—	—
I.3	Verification of clearances between open contacts	I.3	-do-				
Test Sequence A_1							
6	Marking (except indelibility of marking)	6	IS/IEC 60898-1	One	One Control Unit	Every Control Unit	—
8.1.1	Mechanical design (General)	8.1.1	-do-	-do-	-do-	-do-	
8.1.2	Mechanical design (Mechanism)	8.1.2	-do-	-do-	-do-	-do-	
6	Indelibility of marking	6, 9.3	-do-	-do-	-do-	Once in six months on CBs of the same fundamental design	
8.1.3	Clearance & creepage distances (external parts)	8.1.3, 9.7.2 to 9.7.4, 9.7.5.2, 9.7.5.4.1 9.7.5.4.2	-do-	-do-	-do-		
8.1.6	Non- interchangeability	8.1.6	-do-	-do-	-do-	-do-	
8.1.4	Reliability of Screws, current-carrying parts and connections	8.1.4, 9.4, 9.8, 9.9, 9.12 to 9.14	-do-	-do-	-do-	-do-	

IS/IEC 60898-1:2015
ELECTRICAL ACCESSORIES-CIRCUIT-BREAKERS FOR OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS CIRCUIT BREKAERS FOR a.c. OPERATION
TABLE 1 LEVELS OF CONTROL

TEST DETAILS				LEVELS OF CONTROL			
Clause	**Requirements**	**TEST MEHODS**		**No. of Samples**	**Lot Size**	**Frequency**	**Remarks**
		Clause	**Reference**				
8.1.5	Reliability of screw-type terminals for external conductors	8.1.5,9.4 & 9.5, Annex-J, K	IS/IEC 60898-1	One	One Control Unit	Once in six months on CBs of the same fundamental design	—
8.2	Protection against electric shock	8.2, 9.6	-do-	-do-	-do-		
8.1.3	Clearance & creepage distances (internal parts only)	8.1.3, 9.7.2 to 9.7.4, 9.7.5.2, 9.7.5.4.1 9.7.5.4.2	-do-	-do-	-do-		
8.10	Resistance to heat	9.14	-do-	-do-	-do-		
8.12	Resistance to rusting	8.12,9.16	-do-	-do-	-do-		
Test Sequence A_2							
8.11	Resistance to abnormal heat and to fire	8.11, 9.15	IS/IEC 60898-1	Three	One Control Unit	Once in six months on CBs of the same fundamental design	—
Test Sequence B							
8.1.3	Resistance of the insulation of open contacts and basic insulation against an impulse voltage in normal conditions	9.7.5.4	IS/IEC 60898-1	Three	One Control Unit	Once in six months on CBs of the same fundamental design	—
8.1.3, 8.3.2	Resistance to humidity	9.7.1	-do-	-do-	-do-		
8.1.3, 8.3.2	Insulation resistance of the main circuit	9.7.2	-do-	-do-	-do-		
8.1.3, 8.3.2	Dielectric Strength of the main circuit	9.7.3	-do-	-do-	-do-		
8.1.3	Insulation resistance & dielectric strength of auxillary circuit	9.7.4	-do-	-do-	-do-		

IS/IEC 60898-1:2015
ELECTRICAL ACCESSORIES-CIRCUIT-BREAKERS FOR OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS CIRCUIT BREAKERS FOR a.c. OPERATION
TABLE 1 LEVELS OF CONTROL

TEST DETAILS							
Clause	**Requirements**	**TEST MEHODS**		**No. of Samples**	**Lot Size**	**Frequency**	**Remarks**
		Clause	**Reference**				
8.1.3, 8.3.4	Clearances with the impulse withstand voltage	9.7.5.2	IS/IEC 60898-1	Three	One Control Unit	Once in six months on CBs of the same fundamental design	—
8.4	Temperature rise	8.4, 9.8	-do-	-do-	-do-		
8.5	28-day test	8.5,9.9	-do-	-do-	-do-	Once in three years on CBs of the same fundamental design	
Test Sequence C_1							
8.7	Mechanical and electrical endurance	8.7, 9.11	IS/IEC 60898-1	Three	One Control Unit	Once in a year on CBs of the same fundamental design	—
9.12.11.2.1	Performance at reduced short-circuit currents	9.12.11.2.1	-do-	-do-	-do-	Once in 5 years on CBs of the same fundamental design	
9.12.12	Verification of the circuit-breaker after short-circuit tests	9.12.12	-do-	-do-	-do-		
Test Sequence C_2							
8.8	Suitability of Circuit breakers for use in IT systems	9.12.11.2.2	IS/IEC 60898-1	Three	One Control Unit	Once in 5 years on CBs of the same fundamental design	—
8.8	Verification of circuit breaker after short-circuit tests	9.12.12	-do-	-do-	-do-		
Test Sequence D_0							
8.6.2	Tripping Characteristic	9.10.2.1, 9.10.2.2	IS/IEC 60898-1	Three	One Control Unit	Daily for each type & rating	—
8.6.3	Tripping Characteristic	9.10.3.2 to 9.10.3.4, 9.10.4 & 9.10.5	-do-	-do-	-do-	Once in a month on CBs of the same fundamental design	
8.6	Tripping Characteristic	9.10.3.1	-do-	-do-	-do-	Once in six months on CBs of the same fundamental design	

IS/IEC 60898-1:2015
ELECTRICAL ACCESSORIES-CIRCUIT-BREAKERS FOR OVERCURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS CIRCUIT BREAKERS FOR a.c. OPERATION
TABLE 1 LEVELS OF CONTROL

TEST DETAILS				LEVELS OF CONTROL			
Clause	**Requirements**	**TEST MEHODS**		**No. of Samples**	**Lot Size**	**Frequency**	**Remarks**
		Clause	**Reference**				
Test Sequence D_1							
8.9	Resistance to mechanical shock & impact	8.9,9.13	IS/IEC 60898-1	Three	One Control Unit	Once in a year on CBs of the same fundamental design	—
8.8	Short circuit performance at 1500 A	9.12.11.3	-do-	*	-do-	Once in five years on CBs of the same fundamental design	
8.8	Verification of circuit breaker after short circuit tests	9.12.12	-do-	*	-do-		
Test Sequence E_1							
8.8	Service short circuit capacity (I_{cs})	9.12.11.4.2	IS/IEC 60898-1	*	One Control Unit	Once in five years on CBs of the same fundamental design	—
8.8	Verification of circuit-breaker after short-circuit tests	9.12.12	-do-	*	-do-		
Test Sequence E_2							
8.8	Performance at rated short circuit capacity(I_{cn})	9.12.11.4.3	-do-	*	-do-	Once in five years on CBs of the same fundamental design	—
8.8	Verification of circuit-breaker after short-circuit tests	9.12.12	-do-	*	-do-		
Test Sequence E_3							
8.8	Performance at rated making & breaking capacity (I_{cn1}) on an individual pole of multipole circuit breakers	9.12.11.4.4, 9.12.12	-do-	*	-do-	Once in five years on CBs of the same fundamental design	—

*****The number of samples for these tests shall be as given in Table C.2, C.3 & C.4 of IS/IEC 60898-1 as applicable.

DOC: STI/60898-1/2,
May 2018

PROFORMA FOR OBTAINING PRODUCTION DETAILS

Period covered	
Name of Licensee CM/L No.	
Name of Articles (s)	IS No.
Grade/Type/Size/Variety/Class/Rating	
Brand/Trade/Name(s) of Product covered under BIS Certification Mark	
Total production of the articles(s) licensed for certification marking	
Total production of the article(s) conforming to Indian Standard	
Production covered with BIS Certification Mark and its Value : a) Quantity b) Value (Rs.)	
Brand Name used on production covered under BIS Certification Mark	
Calculation of marking fee on unit-rate basis; Marking Fee per unit a) Unit b) Quantity covered with BIS Certification Mark c) Marking fee rounded off in whole rupees as obtained by applying unit rates given in (a) on quantity given in (b) **NOTE:** In case a clause is not applicable, suitable remarks may be given against it	
Quantity not covered with BIS Certification Mark, if any.	
Reasons for such non-coverage	
Brand Name under which non-ISI goods were sold	
Quantity exported with BIS Standard Mark and its value	
Brand Name under which BIS Certified goods are exported	
Authentication by Chartered Accountant	