SCHEME OF TESTING AND INSPECITON FOR CERTIFICATION OF ELECTRICAL ACCESSORIES CIRCUIT BREAKERS FOR OVER CURRENT PROTECTION FOR HOUSEHOLD AND SIMILAR INSTALLATIONS ACCORDING TO IS 8828:1996

1. **LABORATORY**: 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 specification.

1.1 All testing apparatus shall be periodically checked and calibrated and records of such checks/calibration shall be maintained.

2. **TEST RECORDS**: All records of tests and inspection shall be kept in suitable forms approved by the Bureau.

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

3. **QUALITY CONTROL** – It is recommended that, as far as possible, Statistical Quality Control (SQC) methods may be used for controlling the quality during production as envisaged in the scheme [See IS : 397 (Part I) – 1972 IS : 397 (PartII) – 1985 and IS : 397 (Part III) – 1980].

4 **MARKING**: The Standard Mark as given in Column 1 of the first Schedule of the license shall be marked on each Miniature Air-Breake Circuit Breaker, provided always that the circuit breaker to which this Mark is thus applied conforms to every requirement of the specification.

4.1 In addition Circuit Breakers shall be marked as per Clause 6 of IS 8828: 1996.

5 **LEVELS OF CONTROL**: The tests and inspection indicated in Table 1 attached and at the levels of control specified therein, shall be carried out on the whole production which is covered by this scheme and appropriate records and charts maintained in accordance with paragraph 2 above. All the production which conforms to the India Standard and covered by this licence shall be marked with the Certification Mark of the Bureau.

6 On the basis of tests, and inspection results, decision regarding conformity or otherwise of a lot with the requirements of specification shall be made as under:

6.1 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 this STI) shall not be marked.

6.1.2 In case of a failure in any of the remaining tests, marking of the product shall be suspended 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.

6.1.3 For the purpose of this scheme, Circuit-Breakers of one type and rating manufactured in a day shall constitute a control unit.

7. In case testing facilities for short circuit capacity tests are not available atthe works of the firm, those tests may be got carried out by the licensee in an independent laboratory at the stipulated levels of control and test certificates obtained.

8. In respect of all other clauses of the specification an at all stages of manufacture, the factory shall maintain appropriate controls and checks to ensure that their product conforms to all the requirements of the specification.

9. A separate record shall be maintained giving information relating to rejection of circuit-breakers which do not conform to the relevant specification. Such material shall, in no case, be stored together with that conforming to the specification.

10. Type testing and Range:

10.1 The product shall be deemed to conform to the standard if the tests as per test sequence given in Annex C of IS 8828:1996 are complied with. For considering ranges details of sampling procedure given in Annex C of IS 8828:1996 would be followed.

11. For the purpose of operation of this scheme, National Annex attached with IS 8828:1996 shall be applicable.

12. For Indian Manufacturer holding a valid IECEE –CB certificate no testing on the product would be required for the purpose of certification of the product except for compliance of the National Annex. For foreign manufacturers the case is dealt by Central Marks Dept. BIS, New Delhi.

13. **REJECTIONS**: A separate record shall be maintained giving information relating to the rejection of the production not conforming to the requirements of the specification and the method of its disposal. Such material shall in no circumstances be stored together with that conforming to the specification.

14. **SAMPLES**: The licensee shall supply, free of charge, the samples required in accordance with the Bureau of Indian Standards (Certification) Regulations, 1988, as subsequently amended, from the factory or godowns. The Bureau shall pay for the samples taken by it from the open market.

15. **REPLACEMENT**: 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 are replaced free of cost by the licensee in case the complaint is proved 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 the Bureau. .

16. In the event of any damages caused by the goods bearing the Standard Mark or 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 cases.

17. **SUSPENSION OF MARKING**: The marking of the product shall be stopped under intimation to the Bureau if, at any time, there is any difficulty in maintaining the conformity of their product to the specification or the testing equipment goes out of order. The marking may be resumed as soon as the defects are removed under intimation to Bureau.

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

18. **PRODUCTION DATA**: The licensee shall send to BIS as per the enclosed proforma-1 to be authenticated by a Chartered Accountant a statement of quantity produced, marked and exported by him and the trade value thereof at the end of each operative year of the license.

IS 8828:1996
SCHEME OF TESTING AND INSPECTION
TABLE 1 LEVELS OF CONTROL
(Para 5 of the Scheme of Testing and Inspection)

TEST DETAILS				**LEVELS OF CONTROL**		
Clause	**Requirements**	**Test Method**		**No. of Specimen**	**Lot Size**	**Frequency**
		Clause	Reference			
Test Sequence A. Marking		6		Each Piece	-	-
Mechanism		8.1.2		-do-	-	-
Indelibility of marking		9.3		3 Pieces	One Control Unit	Once in Six months for each type & rating.
Clearance & creepage distances (external parts only)		8.1.3		-do-	One Control Unit	-do-
Non-Interchangeability		8.1.6		-do-	-do-	-do-
Reliability of screws, current-carrying parts and connections		9.4		-do-	-do-	-do-
Reliability of screw type, terminals for external conductors		9.5		-do-	-do-	-do-
Protection against electric shock.		9.6		-do-	-do-	-do-
Clearance & creepage distances (internal parts only).		8.1.3		-do-	-do-	-do-
Resistance to heat.		9.14		-do-	-do-	-do-
Resistance to abnormal heat and to fire.		9.15		-do-	-do-	
Resistance to rusting.		9.16		-do-	-do-	-do-

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TEST DETAILS				**LEVELS OF CONTROL**		
Clause	**Requirements**	**Test Method**		**No.of Specimen**	**Lot Size**	**Frequency**
		Clause	Reference			
Test Sequence B. Dielectric properties		9.7		-do-	-do-	-do-
Temperature-rise		9.8		-do-	-do-	-do-
28-day test		9.9		-do-	-do-	Once in 3 years for each type and rating
Test Sequence C. Mechanical & electrical endurance		9.11		-do-	-do-	Once in a year for each type and rating
Performance at reduced short-circuit currents.		9.12.11.2		*	-do-	Once in 3 years
Verification of circuit-breaker after short circuit test.		9.12.12		*	-do-	-do-
Test Sequence D0. Tripping characteristic		9.10.1.2		3 pieces	-do-	Daily for each type and rating
		9.10		3 pieces	-do-	Once in a month for each type & rating.
Test Sequence D1. Resistance in mechanical shock and impact.		9.13		3 pieces	-do-	Once in a year for each type & rating.
Short circuit performance at 1500A.		9.12.11.3		*		Once in 3 years
Verification of circuit breaker after short-circuit tests.		9.12.12		*	-do-	-do-

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TEST DETAILS				**LEVELS OF CONTROL**		
Clause	**Requirements**	**Test Method**		**No. of Specimen**	**Lot Size**	**Frequency**
		Clause	Reference			
Test Sequence E1. Service short-circuit capacity (Ics)		9.12.114.2		*	-do-	-do-
Verification of circuit breaker after short-circuit tests.		9.12.12		*	-do-	-do-
Test Sequence E2. Performance at rated short circuit capacity (Ics)		9.12.11.4.3		*	-do-	-do-
Verification of circuit breaker after short circuit test.		9.12.12		*	-do-	-do-

* The member of samples for these tests shall be as given in Table C.2 C3 & C4 of IS 0028.1996 as applicable.