केन्द्रीय मुहर विभाग –III

संदर्भ- केन्द्रीय मुहर विभाग-III/16:आई एस – **16444 (Part 1)** 24 जनवरी **2018**

विषय: IS 16444(Part 1):2015 के प्रमाणन हेतु एस टी आइ

इसे उपरोक्त विषय का संदर्भ प्राप्त है।

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

सभी क्षेत्रीय और शाखा कार्यालयों से अनुरोध है की उपरोक्त **एस टी आई** का अनुपालन तत्काल प्रभाव से 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 इंट्रानेट पर डालने ह

CENTRAL MARKS DEPARTMENT III

Our Ref: CMD III/16: IS 16444(Part 1) 24 January 2018

Subject: STI for implementation of IS 16444 (Part 1):2015

This has reference to the subject mentioned above.

The STI for implementation of IS 16444(Part 1):2015 have been approved by the Competent Authority.

All ROs/BOs are requested to ensure the implementation of the above guidelines with immediate effect.

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 a.c. Static Direct Connected Watthour Smart Meter Class 1 and Class 2 ACCORDING TO IS 16444(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, verified and calibrated and records of such checks/verification/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.

2.2 Copies of any such records 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 applied on each smart meter, provided always that the smart meter to which the Standard Mark is applied conforms to every requirement of the specification.

5. MARKING

5.1 In addition to the Standard Mark, the information as per clause 6.8 of IS 16444 (Part 1):2015 shall be marked indelibly on the smart meter.

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.

6.2 Control Unit: For the purpose of this Scheme, the smart meters of the same design, manufactured in a day shall constitute a control unit.

6.3 On the basis of the test results, decision regarding conformity or otherwise of the production shall be made.

6.4 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.

6.5 Wherever the Raw Materials/Components used is under the Mandatory Certification of BIS, they shall necessarily be ISI marked and no further testing is required. Wherever the Raw Materials/Components used is not under the Mandatory Certification of BIS and is accompanied with Test Certificate or ISI marked, in such cases also no further testing is required.

7. REJECTIONS

7.1 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 disposal. Such material shall in no case be stored together with that conforming to the Specification. The Standard Mark (if already applied) on rejected material shall be defaced.

8. SAMPLES

8.1 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.

9. REPLACEMENT

9.1 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.

9.2 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 cases.

10 STOP MARKING

10.1 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.

10.2 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.

11 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 16444(Part 1):2015
TABLE 1 LEVELS OF CONTROL
a.c. Static Direct Connected Watthour Smart Meter Class 1 and Class 2
(Clause 6 of the Scheme of Testing and Inspection)

TEST DETAILS				LEVELS OF CONTROL		
Clause	**Requirements**	**Test Method**		**No. of Specimen**	**Frequency**	**Remarks**
		Clause	**Reference**			
6.1,6.2	Metering requirement/ General Constructional requirement	4, 5.1 to 5.4, 6.1 to 6.4	IS 13779	Each smart meter		In case of failure of any smart meter, cause of failure shall be identified and corrective action shall be taken to remove the non-conformity. (Also please see Page 6 for testing on material of terminal block and terminal cover)
6.10.6	Insulation Properties (ac High Voltage test)	9.5	IS 13779			
	Insulation Properties (Insulation resistance)	12.7.6.4	IS 13779			
6.12	Accuracy requirement (Limit of Error due to variation of current)	11.1	IS 13779			
	Accuracy requirement (Starting Condition)	11.5	IS 13779			
	Accuracy requirement (No Load condition)	11.4	IS 13779			
6.10.1	Electrical requirement (Power consumption)	6.10.1	IS 16444 (Part 1)	Three	Once in a week for each type and rating	In the case of failure of any sample, double the number of samples shall be taken for testing and no failure in those samples shall be permitted. Otherwise the control unit shall be rejected. After corrective actions two consecutive control units shall be tested as per the samples indicated in the table and then original frequency shall be restored if both the samples pass. For Cl. 6.6 non volatile memory supplier's test certificate may also be accepted.
6.10.2	Electrical requirement (Influence of supply voltage)	4.4.2	IS 15884	Three	Once in six months for each type and rating	
6.10.3	Electrical requirement (Short time over current)	4.4.3	IS 15884	Three		
6.10.4	Electrical requirement (Influence of self-heating)	4.4.4	IS 15884	Three		
6.10.5	Electrical requirement (Influence of heating)	4.4.5	IS 15884	Three		
6.12	Accuracy requirements (Meter Constant)	11.6	IS 13779	Three		
	Accuracy requirements (Repeatability of Error)	11.7	IS 13779	Three		

IS 16444(Part 1):2015
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a.c. Static Direct Connected Watthour Smart Meter Class 1 and Class 2
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TEST DETAILS				LEVELS OF CONTROL		
Clause	**Requirements**	**Test Method**		**No. of Specimen**	**Frequency**	**Remarks**
		Clause	**Reference**			
6.3	Clearance & Creepage distances	6.6	IS 13779	Three	Once in six months for each type and rating	In case of failure of any smart meter, cause of failure shall be identified and corrective action shall be taken to remove the non-conformity
6.6	Display of values	6.6	IS 16444(Part 1)	Three		
		6.10	IS 13779			
6.7	Output Device	6.11	IS 13779	Three		
10.3	Display	10.3	IS 16444 (Part 1)	Three		
9.2	R F Technology Requirements	9.2	IS 16444 (Part 1)		Whenever there is a change in Model/Supplier of RF Module	In case of unavailability of in house test facility, the same shall be got tested from BIS recognized OSL for ascertaining the conformity. Alternatively, Test Certificate of supplier may also be accepted.
7,10.4	Test of Load Switch	4.6.6.2	IS 15884	Three	Once in six months for each type and rating	In the case of failure of any sample, double the number of samples shall be taken for testing and no failure in those samples shall be permitted. Otherwise the control unit shall be rejected. After corrective actions two consecutive control units shall be tested as per the samples indicated in the table and then original frequency shall be restored if both the samples pass.
8,10.5	Data Exchange Protocol	_	IS 15959 (Part 1) IS 15959 (Part 2)	One		
9,10.6	Test of smart meter communicability	9,10.6	IS 16444 (Part 1)	One		
11	Functional Requirement	11	IS 16444 (Part 1)	One		

IS 16444(Part 1):2015
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TEST DETAILS				LEVELS OF CONTROL		
Clause	**Requirements**	**Test Method**		**No. of Specimen**	**Frequency**	**Remarks**
		Clause	**Reference**			
6.10.7	Electrical requirement (Immunity to earth fault)	9.6	IS 13779	Three	Once in a year for each type and rating	In the case of failure of any sample, double the number of samples shall be taken for testing and no failure in those samples shall be permitted. Otherwise the control unit shall be rejected. After corrective actions two consecutive control units shall be tested as per the samples indicated in the table and then original frequency shall be restored if both the samples pass.
6.11	Electromagnetic Compatibility	4.5, 5.5	IS 15884	Three		
6.12	Accuracy requirements (Limits of error due to influence quantities)	11.2	IS 13779	Three		
6.12	Accuracy requirement (Ambient temperature influence)	11.3	IS 13779	Three		
6.5	Mechanical Requirements (Shock Test)	12.3.1	IS 13779	Three		
	Mechanical Requirements (Vibration Test)	12.3.2	IS 13779	Three		
	Mechanical Requirements (Spring Hammer Test)	12.3.3	IS 13779	Three		
	Mechanical Requirements (Protection against penetration of dust & water)	6.9,12.5	IS 13779	Three		
6.9	Test for Climatic Influence	8, 12.6	IS 13779	Three		
6.10.6	Insulation Properties (Impulse Voltage Test)	9.5	IS 13779	Three		
6.2.1, 6.2.2	Terminal Blocks and Terminal Cover	6.4, 6.5, 6.5.1, 6.5.2 & 6.7	IS 13779	Three	Every consignment of insulating material received	Test certificate from manufacturer may be accepted In case of failure, such lot of consignment shall be rejected. .
6.4	Mechanical Requirements (Resistance to heat and fire)	6.8	IS 13779	Three		

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	