



उत्पाद मैनुअल
IS 996: 2025 के अनुसार
सामान्य प्रयोजन के लिए एक फेजी ए. सी. प्रेरण मोटरें
के लिए

Product Manual
For
Single Phase a.c. Induction Motors for General Purpose
according To
IS 996: 2025

विभिन्न उत्पादों के लिए 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।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure uniformity 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.

1.	Product	:	IS 996: 2025
	Title	:	SINGLE PHASE A.C. INDUCTION MOTORS FOR GENERAL PURPOSE
	No. of Amendments	:	Nil
2.	Sampling Guidelines:		
a)	Raw material	:	Insulating Material - IS 1271 Enclosure – IS/IEC 60034-5 Capacitors- IS 2993(part 1) or (part 2)
b)	Grouping guidelines	:	Please refer ANNEX – A
c)	Sample Size	:	1
3.	List of Test Equipment	:	Please refer ANNEX – B
4.	Scheme of Inspection and Testing	:	Please refer ANNEX – C
5.	Possible tests in a day :		
	All tests except Moisture Proofness (Cl. 13.2)		
6.	Scope of the Licence :	Please refer ANNEX – D	

ANNEX A

Grouping Guidelines

1. The parameters as given below shall be considered for grouping of ‘Single Phase a.c. Induction Motors for general purpose’ as per IS 996: 2025 for GOL/Inclusion:
 - i. Rated Output: 2.5 W to 2200 W (preferred ratings or others)
 - ii. Rated Voltage: 230 V preferred or others upto and including 250V.
 - iii. Number of Poles: 2, 4, 6
 - iv. Starting method: Capacitor- start Induction- run, Capacitor start- and- run, Capacitor- start and capacitor- run, Split-phase, Shaded pole
 - v. Insulation Class: B, F, H
 - vi. Duty: Continuously rated, Short time rated for preferred periods
 - vii. Type of enclosures: Based on different degrees of protection, as given in the Standard.
2. Motors with rated output from 2.5 W to 2200 W shall be considered as one group, provided the rated voltage and number of poles remain the same. Motors with the lowest and the highest rated output in a group shall be tested for covering the entire range of the motors in that group.
3. If motors with superior degree of protection is tested, motors with lower degree of protection shall also be covered.
4. To cover all varieties in the scope of the Licence with respect to Starting method, Insulation Class and Duty, at least one variety of a motor of each Starting method, Insulation Class and Duty shall be tested
5. Fan duty motors, if intended to be covered, shall be tested independently for all applicable requirements.
6. The Firm shall declare the varieties of various Single Phase a.c. Induction Motors they intend to cover in the Licence. The Scope of Licence shall be restricted based on the Manufacturing capability and Testing facilities of the Manufacturer.
7. During the operation of the Licence, BO shall ensure that all the Varieties covered in the Licence are tested in rotation to the extent possible.

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

Sl. No.	Tests used in with Clause Reference	Test Equipment
1.	Switching operation of centrifugal switch at no load as per Cl. 9.4.6.1	a) Test bench with Ammeter
2.	Winding resistance as per Cl 14, 21.3(a)	a) Volt-Amp Meter or b) Wheatstone or Kelvin double bridge
3.	No-load current, power input and speed at rated voltage and frequency as per Cl. 21.3(b)	a) Voltmeter b) Ammeter c) Wattmeter d) Tachometer e) Dynamometer/ Rope and Pulley arrangement f) Power factor meter
4.	Test for torques at rated voltage and frequency as per Cl. 21.3(c)	
5.	Test for Pull up torque at rated voltage and frequency as per Cl .21.3(d)	
6.	Test for breakaway starting current at rated voltage and frequency as per Cl. 21.3(e)	
7.	Test for breakaway starting torque at rated voltage and frequency as per Cl. 21.3(f)	
8.	Test for Full load performance at rated voltage and frequency as per Cl. 21.3(g)	
9.	Test for Pull out Torque at rated voltage and frequency as per Cl. 21.3(h)	
10.	Temperature rise test as per Cl. 21.3(j)	a) Milliohm meter b) Temperature indicator
11.	Momentary overload test as per Cl. 21.3(k)	a) Dynamometer/ Rope and Pulley arrangement
12.	Insulation resistance as per Cl. 21.3(m)	a) Megohm Meter

13.	High voltage Test as per Cl. 21.3(n)	a) High Voltage Tester b) Voltmeter c) Stopwatch
14.	Moisture Proofness test as per Cl. 21.3(p)	Humidity chamber with Temperature and Humidity controller
15.	Leakage current test as per Cl. 21.3(q)	a) Milli ammeter
16.	Vibration test as per Cl. 21.3 (r)	a) Vibration Tester
17.	Dimensions as per Cl. 21.3(s)	a) Vernier Callipers b) Micrometer c) Measuring tape
18.	Reduced Voltage running up test at No load as per Cl. 15	a) Voltmeter b) Ammeter c) Wattmeter d) Tachometer e) Dynamometer/ Rope and Pulley arrangement
19.	Noise Level as per Cl 16	Decibel meter
20.	Over speed test as per Cl 17	a) Voltmeter b) Ammeter c) Wattmeter d) Tachometer e) Dynamometer/Rope and Pulley arrangement

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

ANNEX C

Scheme of Inspection and Testing

1. QUALITY ASSURANCE PLAN

1.1 It is expected that manufacturers (licensees/applicants) will implement a Quality Assurance Plan that is 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: *Motors of the same rating and design manufactured in a day shall constitute a control unit.*

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

2.1 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.

2.2 For the guidance of manufacturers, Table 1 of this Manual provides the recommended levels of control. 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/empanelled laboratory or any other laboratory having valid NABL accreditation as per IS/ISO/IEC 17025.

2.3 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.

2.3.1 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.

2.4 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.

2.4.1 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.

2.5 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. PACKING AND MARKING

3.1 The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on each Motor and also on its packaging (wherever applicable) provided always that the material so marked conforms to each requirement of the specification.

3.2 Packing and Marking shall be done as per Cl. 20 of IS 996: 2025.

3.3 Additional Marking requirements: The following additional marking requirement shall be marked on each of the packaging of the Motors.

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

4. HYGIENIC CONDITIONS (if applicable) – NA.

5. 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	General Construction	9	IS 996	R	Firm to have adequate in-process controls to check compliance of this parameter as per the tolerances given in the Indian Standard. However, appropriate records shall be maintained by the manufacturer for evidence of conformity.		
21.3(w)	Direction of rotation	21.3(w)	IS 996	R	Each Motor		
21.3 (y)	Visual Check	21.3(y)	IS 996	R	Each Motor		
21.3(z)	Switching operation of centrifugal switch at no load	9.4.6	IS 996	R	Each Motor		
21.3(a)	Winding resistance	14	IS 996	R	One	Each Control Unit	
21.3(b)	No-load current, power input and speed at rated voltage and frequency	21.3(b)	IS 996	R	Each Motor		
21.3(c)	Torque at rated voltage and frequency	12.1	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(d)	Pull up torque at rated voltage and frequency	12.1.1	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(e)	Breakaway starting current at rated voltage and frequency	21.3(e)	IS 996	R	Each Motor		
21.3(f)	Breakaway starting torque at rated voltage and frequency	12.1.1	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(g)	Full load performance at rated voltage and frequency	12.5.1	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered

21.3(h)	Pull out Torque at rated voltage and frequency	12.1.1	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(j)	Temperature rise	12.2	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(k)	Momentary overload	12.1.2	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(m)	Insulation resistance	12.7	IS 996	R	Each Motor		
21.3(n)	High voltage	13.1	IS 996	R	Each Motor		
21.3(p)	Moisture proofness	13.2	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(q)	Leakage current	13.3	IS 996	S	One	Once in a month	
21.3(r)	Vibration	12.6	IS 996	S	One	Once in three months from identical type and design	
21.3(s)	Dimensions	7	IS 996	R	One	Each Control Unit	
21.3 (t)	Reduced Voltage running up test at No load	15	IS 996	S	One	Once in a month	Each motor of identical type and design produced in a month shall be covered
21.3(u)	Noise Level	16	IS 996	S	One	Once in a month	
21.3(v)	Over speed	17	IS 996	S	One	Once in a month	
21.3(aa)	Degree of protection	10.1	IS 996	S	1 motor	Once in three years for each type of enclosure	Enclosures shall meet the requirements of IS/IEC 60034-5 as applicable

ANNEX D

“Licence is granted to use Standard Mark as per IS 996: 2025 with the following scope:	
Name of the product	Single Phase A.C. Induction Motors For General Purpose
Ratings	Rated VoltageV, 50Hz,..... W,
Type	2/4/6 pole, Capacitor-start Induction-run/ Capacitor start-and-run/ Capacitor-start capacitor-run /Split-phase /Shaded pole type, Continuously rated/ Short time rated for minutes,
Insulation Class	B/F/H
Degree of Protection against Moisture	IPXX (and lower)
Any other aspect required as per the Standard	Declared Values as given below to be obtained from the manufacturer

Declared Values of Single Phase A.C. Induction Motors for General Purpose as per IS: 996:2009.

Type of Motor :

Rated Output (Watts) :

Pull Out Torque (Min.) :

Pull Up Torque (Min.) :

Breakaway Torque (Min.) :

Full Load Current (Max.) :

Breakaway Starting Current (Min.) :

Speed on Load (Min.) :

PF or $PF \times \eta$ (Min.) :

Value of capacitor(s) and voltage rating of capacitor(s) :

Type of duty rating :

Type of Enclosure :