उत्पाद मैनुअल
घरेलु और समान कार्यो के लिए स्विच
आईएस 3854: 2023 के अनुसर

PRODUCT MANUAL
SWITCHES FOR DOMESTIC AND SIMILAR PURPOSES
according to IS 3854: 2023

यह उत्पाद नियमावली सभी क्षेत्रीय/शाखा कार्यालयों और लाइसेंसधारियों द्वारा विभिन्न उत्पादों के लिए भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-I के अंतर्गत प्रमाणन के संचालन में एकरूपता और पारदर्शिता सुनिश्चित करने के लिए संदर्भ सामग्री के रूप में उपयोग की जाएगी। बीआईएस प्रमाणन प्राप्त करने के इच्छुक भावी आवेदक भी इस दस्तावेज़ का उपयोग कर सकते हैं।

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.	**मानक संख्या / IS No.**	:	IS 3854: 2023
	शीर्षक / Title	:	SWITCHES FOR DOMESTIC AND SIMILAR PURPOSES
	संशोधनों की संख्या **No. of amendments**	:	1
2.	**नमूनाकरण दिशानिर्देश / Sampling Guidelines**		
a)	**कच्चा माल** **Raw material**	:	NA. *Note: This section indicates the requirements for raw material (if specified in the IS) for which compliance is to be established during Grant of Licence/Change in Scope of Licence/Factory Surveillance.*
b)	**समूहीकरण दिशानिर्देश** **Grouping Guidelines**	:	Please refer **ANNEX – A**
c)	**नमूने का परिमाण / Sample Quantity**	:	25 switches
d)	**परीक्षण अनुरोध में घोषित किए जाने वाले पैरामीटर** **Parameters to be Declared in Test Request**		Parameters as given in scope of licence *Note: Apart from the above, any other requirements/ parameters may also be declared as per the standard, as applicable.*
3.	**परीक्षण उपकरण की सूची** **List of Test Equipment**	:	Please refer **ANNEX – B**

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4.	**निरीक्षण एवं परीक्षण योजना Scheme of Inspection and Testing**	:	Please refer **ANNEX – C**
5.	**एक दिन में संभावित परीक्षण Possible tests in a day**	:	1. Marking (Cl. 8) 2. Protection against electric shock (Cl. 10) 3. Electric Strength (Flash test) (Cl. 16.3) 4. Temperature rise (Cl. 17) 5. Making and breaking capacity – General (Cl.18.1) 6. Mechanical Strength (Cl. 20) 7. Resistance to heat (Cl. 21) 8. Screws, current-carrying parts and connections (Cl. 22) 9. Creepage distances, clearance and distances through sealing compound (Cl. 23) 10. Resistance to rusting (Cl. 25). *Note: This section is for the guidance of BIS Certification Officers/ Technical Auditors of BIS Authorized Outside Surveillance Agencies(OSAs) during factory inspection to provide ready reference regarding the tests which can be witnessed during the inspection in the factory by the officer/ auditor.*

6.	**लाइसेंस का दायरा / Scope of the Licence:**	
"License is granted to use Standard Mark as per **IS 3854: 2023** with the following scope:		
Name of the Product		Switches for domestic and similar purposes
Rated Current		
Rated Voltage		
Nature of supply		
Possible Connections (Pattern Number)		
Amperes rating (rated current for externally ballasted loads)		AX/A
Contact opening		Normal gap construction / mini-gap Construction/ micro-gap construction/ switches without contact gap (semiconductor switching devices)
Degree of protection against Electric Shock		Unenclosed / Enclosed
Degree of protection against harmful ingress of Water and against harmful ingress of solid foreign objects		IP….
Method of activating the switch		Rotary/ Tumbler/ Rocker/ Push-Button/ Cord-operated/ Dolly type
Method of Mounting		Surface-type/ Flush-type/ Semi flush type/ Panel type/ Architrave-type
Type of Terminals		Screw-type terminals/ Screwless terminals for rigid conductors only/ Screwless terminals for rigid and flexible conductors only

7.	**अन्य दिशानिर्देश / Any other guidelines**	Please refer **ANNEX-D** for guidelines for outsourcing of moulded bodies

ANNEX -A
Grouping Guidelines

1. The following aspects of a switch shall be taken into consideration for grouping of different varieties of switches for the purpose of GoL/ CSoL:
    a. Current rating
    b. Voltage rating
    c. Possible connections or pattern
    d. Amperes rating (rated current for externally ballasted loads)
    e. Contact opening
    f. Degree of protection against harmful ingress of solid foreign objects
    g. Degree of protection against harmful ingress of water
    h. Method of activating the switch
    i. Method of mounting the switch
    j. Type of terminals
    k. Degree of protection against electric shock

2. To cover a range of current ratings, switches from the minimum and maximum rating of that range shall be tested.

3. The following relaxation may be given when a variety is tested for all the requirements:
    a. If a particular voltage rating is tested, lower ratings may also be covered.
    b. If a pattern is tested, additions pattern may be covered as given below:

Pattern tested	Additional Pattern
6	1
4	6,1
6/2	6,2
7	6/2, 2
03	3

    c. If switch with Amperes rating (AX) (rated current for externally ballasted loads) is tested, then separate testing may not be carried out for normal current rating (A).
    d. If switch with a particular degree of protection is tested, switches with lower degree of protection may be covered.

4. For all other aspects mentioned at 1.1(h) to 1.1(j) above, each aspect shall be tested to cover the entire range.

5. The Firm shall declare the varieties of Switches intended to be covered in the Licence. Scope of licence shall be restricted based on the manufacturing and testing facilities available.

6. During operation of licence, samples of each variety covered in the scope of licence, shall be tested in rotation, to the extent possible

ANNEX- B

List of Test Equipments

(Indicative List, For Guidance Only)

Sl. No.	Test Equipment	Clause Reference of tests used for
1.	Marking - 8.9	Petroleum Spirit
2.	Dimensions - 9	Vernier Caliper
3.	Protection against electric shock - 10	Un-jointed test finger, Standard test finger, Voltmeter , Voltage Source with indicator
4.	Earthing Resistance - 11.4	Low voltage source with Voltmeter and ammeter
5.	Resistance to Humidity - 15.3	Humidity Controlled Cabinet, Thermometer Hygrometer
6.	Insulation resistance - 16.1	Megger (500 V dc)
7.	Electric strength (flash test) - 16.2, 16.3	High voltage Tester (ac), Voltmeter, Ammeter
8.	Resistance to Ageing, Heat, Rusting - 15, 21, 25	Electrical Oven
9.	Temperature Rise Test, Making-Breaking and Normal Operation Test - 17,18, 19	Temperature Rise Test Equipment, Thermometer(Digital), Ammeter, Pine wood block
10.	Terminals - 12, 13, 22	Torque Screw Driver
11.	Making-Breaking Capacity and Normal operation test – 18, 19	Test Apparatus, cycle counter, ON Timer OFF Timer, Inductive Load of required power factor, Voltmeter, Auto Transformer, PF Meter, Tungsten Filament Lamp load, Fluorescent Lamp Load
12.	Mechanical Strength – 20	Mechanical Strength (Impact test apparatus) with plywood base for mounting (Pendulum Type)
13.	Pendulum Hammer Test - 20.2	Cylinder of steel sheet and flat steel sheet (for surface type switches)

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 during operation of BIS licence manufacturers will implement a Quality Assurance Plan (QAP) i.e. 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 (QAP) defining the control unit (i.e. lot/batch etc.), the levels of control (i.e. the frequency and number of samples for conducting the different tests as per the Indian Standard) and declare the arrangement for testing i.e. whether in-house or sub-contracting/ sharing for each applicable test and submit the same to BIS Branch Office for information. The manufacturer shall comply with the QAP and maintain test records in accordance with para 2.1.

1.3 Recommended Levels of Control/ Control Unit:

1.3.1 For the guidance of manufacturers, the recommended definition of control unit is: *Switches of same type and rating 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. Manufacturer has the discretion of declaring their own levels of control or accept the levels of control given in this document.

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.

1.4 However, all manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard.

2. ENSURING COMPLIANCE THROUGH TESTING

The manufacturers shall ensure compliance of their products to all the requirements of the Indian Standard for which they may have in-house test facilities. However, there is no obligation to maintain in-house laboratory. Licensee may use alternative arrangements for tests of the production as per the declared QAP. Various alternatives are available for operation of BIS certification as given below and the relevant guidelines for availing such relaxations by the manufacturers, as amended from time to time, are to be referred:

i) Shared testing resources like common facility,

ii) Cluster based testing facility,

iii) Sub-contracting to outside laboratories which may either be:

a) BIS recognised/ empanelled laboratories, or

b) Any accredited laboratory as per ISO/IEC 17025

2.1 Test Records- The manufacturers shall maintain test records for the tests carried out (either in-house or at a sub-contracted or at shared test facility) to establish conformity of the product to the Standard for operation of licence. For the tests being subcontracted or conducted at a shared test facility, test results issued by the laboratories or test facilities, shall be made available for inspection by BIS.

3. PACKING AND MARKING

The Standard Mark as given in the Schedule of the licence shall be incorporated legibly and indelibly on **each Switch** and also on its packaging provided always that the switch so marked conforms to each requirement of the specification.

3.1 Marking on the product shall be done as per Cl. 8 of IS 3854: 2023.

3.2 **Additional Marking requirements**: The switches shall also be marked with the following additional requirement on each packing:

a) "For BIS certification details please visit www.bis.gov.in"

4. REJECTION

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

(Recommended Levels of Control by BIS- for Guidance Only)

(1)				(2)		
Test Details				**Levels of Control**		
Cl.	**Requirement**	**Test Methods**		**No. of Sample**	**Frequency**	**Remarks**
		Clause	**Reference**			
8	Marking (except 8.9)	8	IS 3854: 2023	Each Switch		
16.3	Electric Strength (Flash test)	16.3	IS 3854: 2023	3	Every week for each type and rating	
8.9	Marking – Durability	8.9	IS 3854: 2023	3	Each Control Unit	
9	Checking of Dimensions	9	IS 3854: 2023	3	Each Control Unit	
10	Protection against electric shock	10	IS 3854: 2023	3	Every week for each type and rating	
11	Provision for earthing	11	IS 3854: 2023			
12	Terminals	12	IS 3854: 2023			
13	Constructional requirements	13	IS 3854: 2023			
14	Mechanism	14	IS 3854: 2023			
15	Resistance to ageing, harmful ingress of water and to humidity	15	IS 3854: 2023			
16	Insulation resistance and electric strength (except 16.3)	16	IS 3854: 2023			
17	Temperature rise	17	IS 3854: 2023		Once in three months for each type and rating	
19	Normal operation	19	IS 3854: 2023			
20	Mechanical Strength	20	IS 3854: 2023			
21	Resistance to heat	21	IS 3854: 2023			
22	Screws, current-carrying parts and connections	22	IS 3854: 2023			
23	Creepage distances, clearance and distances through sealing compound	23	IS 3854: 2023			
25	Resistance to rusting	25	IS 3854: 2023			
24	Resistance to insulating material to abnormal heat, to fire and to tracking	24	IS 3854: 2023		Once in a year or whenever there is change in raw material for each type and rating	Refer Note 2
18	Making and breaking capacity	18	IS 3854: 2023		Once in three years for each type and rating for each type and rating	Refer Note 2

Note-1: Firm should exercise adequate control so that whole production should meet the requirements. Records shall be maintained.

Note-2: The number of specimens for testing shall be as per selected as per clause 5.3 and Table 1 of IS 3854. In case of any failure, the provisions given in clause 5.3 of IS 3854 shall be followed.

ANNEX – D
Guidelines for Outsourcing of Moulded Bodies

a. Outsourcing of moulding facilities may be permitted with the following organizations (Moulder):

   For Domestic Manufacturers

   i. Any dedicated moulding unit in the conforming/ authorized industrial area and located under the jurisdiction of the same Branch Office.

   ii. Any other unit of the Licensee/ Applicant or their sister concern, which is having a valid BIS licence for the same product under the jurisdiction of the same Branch Office.

   For Foreign Manufacturers

   i. Any dedicated moulding unit in the conforming/ authorized industrial area and located in the same city where the applicant/ licensee is located.

b. The dedicated moulder shall not carry out moulding for units other than the particular Applicant/ Licensee.

c. The Manufacturer shall take the following actions:

   i. Enter into an agreement with the moulder which shall comprise, inter alia, the terms and conditions for moulding including the condition of dedicated moulding, period of agreement etc.

   ii. Declare the Items and Brands for which he intends to outsource moulding.

   iii. Declare the name, ownership details, address, details of the responsible person, phone number, etc. of the moulder.

d. It shall be the responsibility of the licensee (the firm which is outsourcing the moulding activity) to ensure that no finished material is produced or assembled at any place other than the licensed premises and he shall be responsible for any misuse of ISI mark at the moulder's premises. An Undertaking to this effect shall be furnished to BIS.

e. Records of raw material issued date-wise, moulded material received back date-wise and item-wise shall be maintained by the licensee. Similar records shall also be maintained by the moulder.

f. The moulder shall ensure that there is a separate dedicated space for keeping moulded components as well as the raw materials received from the licensee. Colour coding of bins/ separate storage location etc. may be used to ensure easy and quick traceability. Appropriate records are to be maintained at both the units.

g. The licensee shall ensure that there are adequate means of ensuring the quality of incoming outsourced moulded bodies.

h. For applications received with request for outsourcing of moulding facilities, a special inspection of the moulder's premises shall be carried out to adjudge the capability of the moulder in addition to the preliminary inspection at the applicant's premises. Special Inspection Charges and any other charges, as applicable, for this visit shall be collected from the applicant in advance. The process flow chart submitted by the applicant shall clearly indicate the outsourcing of moulded bodies. The recommendations for Grant of Licence (GoL) shall include details on outsourcing of moulding operation by the firm. The details of outsourcing may also

be included in the GoL intimation letter.

i. For existing licensees who intend to outsource the moulding facility, the licensee shall submit a fresh process flow chart indicating the outsourcing of moulded bodies. The permission for outsourcing may be given to the licensee after complying with all the procedures including verification visit to the moulder's premises.

j. Whenever there is a change in the moulder, the licensee has to enter into a fresh agreement with the new moulding unit. The permission for outsourcing may be given to the licensee after complying with all the procedures including verification visit to the moulder's premises.

k. During the operation of the licence, records required to be maintained at the licensee end with respect to outsourced moulding shall be verified during surveillance visit at the licensee's premises by BIS Certification Officer.

l. BIS Officer(s) shall have access to the moulder's premises and if at any time the same is denied, permission for outsourcing shall be withdrawn. An undertaking in this respect shall be obtained.

m. For Domestic manufacturers, the visit to moulder's premises may be taken up as a special visit as and when needed. Special Inspection Charges for this visit shall be collected from the licensee after the visit. An undertaking from the licensee regarding payment of such charges shall be obtained.

n. For Foreign manufacturers, BIS shall maintain surveillance over the moulder's premises in addition to the manufacturer's premises. Special inspection charges and all other applicable charges for this visit shall be payable by the licensee.

Note:

- The Indian Standard does not impose any restriction on the manner/ method of Marking so long as the Durability clause is complied with. As such, the product may be marked with the Standard Mark, CM/L Number, Manufacturer's Brand and other markings during the process of moulding itself, in which case all the conditions stated above shall apply.
- However, if the Marking on the moulded bodies is done at the Licensee's own premises by other means such as pad printing/ laser marking etc., the moulded component may be treated as any other bought out component/ raw material as these are not marked with the ISI Mark or CM/L Number during the outsourced moulding process. Notwithstanding this, the Applicant/ Licensee shall ensure that there are adequate means of ensuring the quality of the incoming components