

**SCHEDULE - X****TECHNICAL SPECIFICATION FOR SERVICE CONNECTION BOX
MADE FROM THERMOSETTING PLASTIC FOR
SERVICE CONNECTIONS.****1.0 SCOPE:**

1.1 This specification covers the design, manufacturing and testing of anti-corrosive, dust proof, rust proof, shock proof, self extinguishing property, resistant to heat, vermin & water proof, Ultra Violet Stabilized and pilfer resistant Service Connection Dist. Box made from Thermosetting Plastic i.e. Glass Reinforced Polyester Sheet Moulding Compound (SMC) Confirming to IS:13410 (1992) and attached technical specification, drawing and IS 14772:2000.

2.0 CONSTRUCTION:

2.1 Service Connection Box shall be moulded in a single piece forming the body of the Service Connection Box with a cover fitted with base by minimum two nos. concealed Anticorrosive hinges. The lid/cover shall rest on the collar of the Service Connection Box base in such a way that any access from outside of the box is not possible. The hinges shall be fitted with the Service Connection Box body base and cover rigidly, thereby making the Service Connection Box pilfer resistant. All corners of the Service Connection box should be round & not pointed ones.

2.2 The door in closed position should be overlapped in such a manner that no direct entry or access is possible. The Service Connection Box shall be closed by MS 'U' Clamp of minimum 1.2 mm. thickness for holding and locking of the door with body base. The "U" Clamp shall sealing arrangement for sealing purpose.

2.3 The top surface of box shall have little tapering shape towards both sides of the Service Connection Box for easy flow of rainwater.

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Required arrangements per box should be as follows:

Sr. No	Details	Box for 4 nos. of 3 ph. connection	Box for 8 nos. of 1 ph. connection
01	Size of the box	250 x 250 x 160 mm	250 x 250 x 160 mm
02	Thickness	1.5mm	1.5 mm
03	Opening of the box	90°	90°
04	No of holes on backside box wall having 6 mm dia for fixing of box.	04 No	04 No
05	Earth bolt of 6 mm dia x 20 mm length with 2 nuts and 2 washers	01 No	01 No
06	Cable Entry Hole with good quality rubber grommets as shown in drawing.	35 mm – 01 No	25 mm – 01 No
07	Cable Exit Holes with good quality rubber grommets as shown in drawing.	25 mm – 04 No	14 mm – 08 No
08	Required no of Distribution Blocks (Phase)	03 No	01 No
09	Required no of connection per Distribution Blocks (per Phase)	04 No	08 No
10	Distribution Blocks (Phase) should have arrangement for cable connection purpose	I/C–35 sq mm O/G–10 sq mm	I/C–35 sq mm O/G–10 sq mm
11	Current Carrying capacity of each Distribution Blocks (Phase)	I/C–114 AMP O/G–57 AMP	I/C–114 AMP O/G–57 AMP
12	Required no of Distribution Blocks (Neutral)	01 No	01 No
13	Required no of connection per Distribution Blocks (Neutral)	12 No	08 No
14	Distribution Blocks (Neutral) should have arrangement for cable connection purpose	I/C–04 sq mm O/G–04 sq mm	I/C–35 sq mm O/G–10 sq mm
15	Current Carrying capacity of each Distribution Blocks (Neutral)	I/C–32 AMP O/G–32 AMP	I/C–114 AMP O/G–57 AMP
16	Fixing arrangement of each Distribution Blocks (Phase & Neutral)	A fixed Alkaline Zinc Plated with Yellow Passivation DIN Channel	A fixed Alkaline Zinc Plated with Yellow Passivation DIN Channel

3 **GUARANTEED TECHNICAL PARTICULARS:**

3.1 Guaranteed Technical particulars are given in enclosed Annexure A and B. Bidder shall submit the data in given Performa.

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- 4 TYPE TEST CERTIFICATE:
- 4.1 The bidder shall submit type test report as per IS-14772-2000 & IS – 13410 : 1992 from CIPET, Ahmedabad / ERDA, Baroda along with the offer. Type Test Certificate should not be older than 5 years as on the date of tender opening.
- 5 ROUTINE TEST :
- 5.1 Manufacturer has to carryout routine test during production to check the essential requirements that are likely to vary during production. Manufacturer has to keep records of the same and to be produced for verification of inspector when asked at the time of inspection of lot.
- 6 ACCEPTANCE TEST
- 6.1 The acceptance tests shall be carried out on randomly selected samples as per Annexure-B
- 7 TYPE TEST
- From the offered lot, Sample shall be picked up at discretion of Company for type test at CIPET, Ahmedabad / ERDA, Vadodara pr any NABL accredited laboratory for every 10,000 nos. supply. The charges for the Type Test shall be borne by bidder. On passing the type test successfully, the lot shall be accepted. In case, the boxes are not confirmed to type test, another sample from the lot shall be selected and tested again. On receipt of unsatisfactory results, the lot shall be rejected and new lot shall be offered for inspection keeping aside old lot offered and rejected earlier by the Company. However Company reserves the right to accept the boxes by levying penalty at the discretion of the Company.
- 8 RAW MATERIALS
- 8.1 The manufacturer has to submit the test certificate for the material used in the lot offered and document for purchase of raw material.
- 9.0 FACILITY
- 9.1 The bidder shall have facility to test the box for routine tests and acceptance as per IS – 14772: 2000 and IS - 13410 at their works. The bidder has to submit list of Machinery & Equipment / Testing instruments etc.
- 10.0 INSPECTION AND TESTING
- 10.1 The bidder has to offer the boxes for inspection at his works before dispatch. The manufacturer will offer all facilities to inspector without any charge.
- 11 DESPATCH
- 11.1 The Service Connection Boxes shall be so dispatched as to ensure that no damage occurs during transport where they may be subject to rough handling.
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| 12 TENDER SAMPLE |
| 12.1 One tender sample as per specifications will have to be submitted before last date of submission of Tender to <u>Dy. Engineer, RSO , UGVCL, Visnagar Road, Mehsana,</u> |

Date:

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ANNEXURE – A
GUARANTEED TECHNICAL PARTICULARS

SR. NO.	PARTICULARS	DETAILED PARTICULARS	TO BE OFFERED BY BIDDER
1	Maker's name	To be intimated by the supplier	
2	Material	Glass reinforced polyester sheet moulding compound	
3	Grade of Material	SMC confirming to IS: 13410:1992 Grade S 1	
4	Properties of Material of Construction of Service Connection Box		
	Heat Deflection Temperature (Ref. Std. IS:13411)	150°C (Minimum)	
	Exposure to flame (Ref. Std. IS:4249)	Self-extinguishing	
	Melting Point (Ref. Std. IS:13360)	Does not melt	
	Glow wire test at 650 C	As per IS 11000 Part-2/sec-1	
	Degree of protection	IP-42 as per IS-12063 / 87	
	Heat distortion temp.	125 C (Min) as per IS:13411	
	Dielectric Strength at 90 C in oil	9 KV/mm (Min) as per IS : 6262-1971	
5	Inside dimension of Service Connection Box	To be mentioned by the supplier	
	a. Height	250 mm (min)	
	b. Width	250 mm (min)	
	c. Depth	160 mm (min)	
	d. Thickness of SMC sheet	01.50mm (min)	
6	Earthing Arrangement		
	Earthing bolt	One no. of Earthing bolt of MS with 2 nuts and 2 washers shall be provided on RH side of box. Earthing sign has to be provided near to earthing bolt.	
	Dia. & Length of earthing bolts	Dia. 6 mm Length 20 mm	
7	Locking arrangement	For Holding & Locking of door with base one no. of "U" shaped clamps to be provided	

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8	Manufacturer short name & Company logo shall be Printed on the front side of the box	To be provided on the front side of the box	
9	Sealing arrangement	Holes for wire seal.	
10	Wire entry	plugged holes	
11	Colour of Service Connection Box	Off White	
13	Distribution Blocks Mounting Arrangement	Fixed Alkaline Zinc Plated with Yellow Passivation DIN Channel	
14	Distribution Blocks (Phase)		
	Current Carrying Capacity (Phase)	Three Phase - 04 Consumers: Rating Incoming = 114 Amps Rating Outgoing = 57 Amps each	
		Single Phase - 08 Consumers: Rating Incoming = 114 Amps Rating Outgoing = 57 Amps each	
		Single Phase - 04 Consumers: Rating Incoming = 114 Amps Rating Outgoing = 57 Amps each	
	Cable Size (Phase)	Three Phase - 04 Consumers: Incoming = Upto 35 sq.mm Outgoing = Upto 10 sq.mm	
		Single Phase - 08 Consumers: Incoming = Upto 35 sq.mm Outgoing = Upto 10 sq.mm	
		Single Phase - 04 Consumers: Incoming = Upto 35 sq.mm Outgoing = Upto 10 sq.mm	
15	Distribution Blocks (Neutral)		

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Current Carrying Capacity (Neutral)	Three Phase - 04 Consumers: Rating Incoming = 32 Amps Rating Outgoing = 32 Amps each	
	Single Phase - 08 Consumers: Rating Incoming = 114 Amps Rating Outgoing = 57 Amps each	
	Single Phase - 04 Consumers: Rating Incoming = 114 Amps Rating Outgoing = 57 Amps each	
	Three Phase - 04 Consumers: Incoming = Upto 04 sq.mm Outgoing = Upto 04 sq.mm	
	Single Phase - 08 Consumers: Incoming = Upto 35 sq.mm Outgoing = Upto 10 sq.mm	
	Single Phase - 04 Consumers: Incoming = Upto 35 sq.mm Outgoing = Upto 10 sq.mm	
Cable Size (Phase)		

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ANNEXURE B

TEST REQUIREMENT FOR SERVICE CONNECTION BOX	Reference Standards
<i>ROUTINE TEST</i>	
Protection against electric shock	IS 14772
Provision for earthing	- Do -
<i>ACCEPTANCE TESTS (Random samples 10 nos. to be selected)</i>	
Marking (Name, Trade mark)	- Do -
Protection against electric shock	- Do -
Provision for earthing	- Do -
Construction and Dimension verification	- Do -
Heat distortion temperature (min.150 ⁰ C) (On any one sample)	IS 13411
Self Extinguishing (On any one sample)	IS: 4249
<i>TYPE TEST</i>	
Marking	IS: 14772
Dimensions	- Do -
Protection against electric shock	- Do -
Provision for earthing	- Do -
Construction	- Do -
Resistance to ageing, to humid conditions, ingress of Solid objects and to harmful ingress of water	- Do -
Mechanical strength	- Do -
Resistance to heat	- Do -
Resistance of insulating material to abnormal heat and fire	- Do -
Resistance to rusting	- Do -
Resistance of tracking	- Do -
Heat distortion temperature (min.150 ⁰ C)	IS 13360 (Part VI Sec III)
Self Extinguishing	IS: 4249
Material Identification	CIPET

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