

## **TECHNICAL SPECIFICATION FOR MOULDED METER MOUNTING BOX SUITABLE FOR THREE PHASE STATIC WHOLE CURRENT METERS**

### **1.0 SCOPE:**

Design, manufacturing & supply of meter mounting box is to house one number three-phase four-wire energy meter for consumer metering. The meter box shall comply with IS:14772 .The meter box shall be suitable for wall mounting.

### **2.0 TECHNICAL REQUIREMENT & STANDARDS:**

#### **2.1 MATERIAL AND STANDARDS:**

The meter box i.e. base and cover shall be made of injection moulded, unbreakable, high grade flame retardant polycarbonate with minimum thickness of 2.0 mm having good dielectric and mechanical strength.

The meter box's base & cover shall be injection moulded in U-V stabilized polycarbonate in natural colour. The top cover of the meter box shall be totally transparent without any provision of the separate window arrangement. The material shall be `UV' stabilized to ensure that the top cover does not get yellow over a period of time. The moulded meter box should not change in colour, shape, size, dimension when subjected to 200 hrs. on U-V ageing test.

The Meter Box should have tapered surface/corners to prevent stay of rain water at the top of the meter box.

The surface appearance of moulded part shall be smooth, non-porous and homogenous, free of ripples, defects and marks. No fillers or fibers should be visible at any place. The meter box shall comply in all respect with the requirement of latest amended IS:14772/2000 "General requirements for enclosures for accessories for household and similar fixed electrical installations". Applicable degree of protection shall be IP- 42 or better.

#### **2.2 PROPERTIES OF PLASTIC MATERIAL:**

The plastic material which is to be used for moulded meter box should be transparent Polycarbonate.

### **3.0 SERVICE CONDITIONS:**

The equipment to be supplied shall be suitable for satisfactory conditions specified under & following service conditions:

a)	Maximum ambient air temperature	:	50 deg.C.
b)	Maximum ambient air temperature in shade	:	45 deg.C.
c)	Maximum temperature attainable by the meter box exposed to sun.	:	60 deg.C.
d)	Minimum ambient temperature.	:	(-) 5 deg.C.
e)	Average daily ambient air temperature	:	40 deg.C.
f)	Maximum relative humidity	:	95%
g)	Number of months of tropical monsoon condition.	:	4 months
h)	Maximum altitude above mean sea level	:	1000 meters
i)	Average annual rain fall	:	10-100 cms.
j)	Maximum annual rain fall	:	1450 mm.
k)	Maximum wind pressure	:	200 kg per sq.m

l)	Isoceranic level (days per year)	:	40
m)	Seismic level (Horizontal accn.)	:	0.30 g
n)	Permitted noise level	:	45 db

#### **4.0 GENERAL & CONSTRUCTIONAL REQUIREMENTS:**

##### **4.1 DIMENSIONS:**

The internal dimensions of meter mounting box shall be such that there should be a minimum of 75 mm clearance on all sides and 25 mm clearance on front and 10mm clearance from back of the meter. Meter reading through meter reading instrument is required without opening the meter box cover.

##### **4.2 BASE & COVER DETAILS:**

The cover shall be made with collars on all four sides to fit inside base collar with rubber gasket / lining to make box weather proof. The door shall be in one part. The door of the box shall be provided with neoprene rubber gasket of sufficient size to completely fit in the cover grooves of the box. The door shall be fixed with the box with two concealed hinges. The hinges shall be screwed / rivited in such a manner that neither they are not accessible for tampering from outside nor the hinges are visible from outside.

It should be possible to download the meter data through the optical port of the meter and access the push button of the meter without opening the meter box cover. For the optical port provision of separate sealing shall be provided on the cover of meter box.

##### **4.3 SEALING ARRANGEMENT:**

The door of the meter box shall be provided with 2 nos. U-clamps / Latches for meter box sealing. Such clamps shall be made of zinc passivated MS of minimum 1.2 mm thickness and shall be riveted on the base of the meter box. The sealing holes on U clamps, door & base shall be provided with 2 mm dia. with proper aligned holes.

##### **4.4 METER MOUNTING INSIDE THE MOUNTING BOX :**

The meter base support inside the box is raised by about 10 mm in the box for ease of wiring, while fixing the meter screw should not protrude outside.

##### **4.5 INCOMING AND OUTGOING CABLE ARRANGEMENT:**

For cable entry, suitable circular holes fitted with glands shall be provided at the bottom of the box for cable inlet and outlet. The glands fastened inside the meter box shall not be operative from outside of meter box without breaking the seals of the meter box. The internal diameter of the gland shall be such as to accommodate the 25 - 27 mm outer diameter cable.

##### **4.6 FIXING ARRANGEMENT OF METER BOX:**

For fixing the Meter Box to wall or wooden board, 4 nos. key holes of minimum 6 mm dia shall be provided at the four corners of meter box. The meter is to be installed in the meter mounting box and the box in assembled condition shall have provision to fix it to a pole or on wall.

##### **4.7 MARKING**

The following information shall be clearly indelibly marked on the meter box cover by Printing / Embossing / Metallic name plate.

- i) Tender No..
- ii) Purchaser's name
- iii) Manufacturer's name
- iv) Sign of danger.

**5.0 DRAWING:**

Detailed dimensional drawing showing clearly the dimensions & material for meter mounting Box and its constructional features should be enclosed along with bid document.

**6.0 SAMPLE:**

Successful bidder (supplier) shall furnish a sample of meter box as per specification and drawing for approval to the purchaser. The manufacturer shall start production only after obtaining approval of sample from the purchaser. The sample approval shall be only for physical, dimensional & operational purpose. The meter box shall be suitable to comply with the requirement of all tests.

**7.0 PACKING:**

The meter box with meter fitted / packed inside meter box board shall be suitably packed in order to avoid damage during transit or handling. The packing cases shall be marked to indicate the fragile nature of the content.

**8.0 TESTS:**

**Type Tests:**

The design of meter box offered shall be fully type tested as per IS 14772 and this technical specification. The Type test report of similar product should be enclosed along with the bid, without type test report bid shall be liable for rejection.