BANGALORE ELECTRICITY SUPPLY COMPANY LIMITED

TECHNICAL SPECIFICATION FOR 3PHASE 4WIRE LT METERING CUBICLE OF CABLE ENTRY TYPE ON BOTH INCOMER AND OUT GOING SIDES SUITABLE FOR LOADS FROM 50KW TO 150KW

1.0 Scope:

This specification covers the design, fabrication, painting and supply of LT Metering cubicles (Metal cabinet), supply of components consisting of instrument transformers, meters, etc., housed in suitable cubicle for indoor / outdoor use including the wiring, testing at works, packing and forDepartmental supply and Self-Execution Works as per requirement and the approved drawings enclosed.

2.0 Service Conditions:

The metering equipment shall be suitable for the following site conditions.

a)	Min. Ambient Temperature	: 5°C
b)	Max. Ambient Temperature	: 50°C
c)	Max. Humidity	: 10 to 100%
d)	Altitude	: Not exceeding 1000 Mtrs.
e)	Rainfall	: 1450mm
f)	Max. wind pressure (kg/sqmm)	: 150
g)	Seismic level (Horz. acceleration)	: 0.3g
h)	Protected from limited dust ingress	: IP55

3.0 Standards:

Unless otherwise specified elsewhere in this specification, the rating, performance and testing of the metering cubicle and accessories shall conform to the latest amendments to the relevant standards and specific requirement of BESCOM.

4.0 General Arrangements:

The LT Metering Cubicle shall be installed electrically after the step down transformer and incoming supply point of consumer's installation. The general arrangement of the cabinet shall be as per the enclosed drawing and final drawing approval has to be obtained after approval of prototype sample, as mentioned and shown in the general arrangement drawing, the metering cubicle shall be provided with the following components duly wired up ready for installation and complete in all respects:

a) 3 Nos. single phase LT Potential Transformers (Burden-5VA, 0.2Class)
b) 3 Nos. single phase LT Current Transformers of appropriate ratio as the case may be (Burden-2.5VA, 0.2S Class).
c) 8 Nos of LT (40mm Hgt) Bus-bar support Insulators with necessary hardware and connector pads.

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d) Electronic Tri-vector meter 3 phase, 4 wires (Electronic Meter) – 0.2S class conforming to IS 14697, and as per New GOK HT Meter Specification &BESCOM approved makewith appropriate category and No.s/Quantities as the case may be (Uni-direction or Bi-direction).

e) Aluminium bus bar of 30X8mm size with standard colour coding as the case may be and Transparent cover Test Terminal Block (TTB).

f) The secondary wires from the terminals of CTs and PT's(having with standard colour coding as per annexure) in the CT/PT. compartments shall be covered by suitable PVC conduits and the secondary wires shall be brought in the metering compartment through rubber bush and shall be left open duly crimped with suitable flat pin type copper lugs.

g) Incoming and outgoing bus-bar arrangements to receive cable terminations for incoming and outgoing supply points with marking/lable on the CT/PT chamber.

5.0 Metering CubicleConstruction features:

a) The LT Metering Cubicle shall have only Metering Systemas said in 4.0.Metering cubicle is independent from any kind of switching apparatus.

b) The cubicle shall be fabricated out of mild steel sheets of thickness not less than 1.6mm. Cubicles shall be protected from limited dust ingressas per IP55of IS 12063, with air vents closed. Adequate clearance between bus bars and ground shall be provided.

c) The Overall dimension of the LT Metering Cubicle be width350mm x height 1775mmx breadth785mm as per diagram enclosed.The cubicle is to be supported on MS Angle iron frame, made out of 40X40X6mm angle, as shown in the drawing. The mounting dimension of the box/cubicle is 885X300mm.

d) All live points should be at a minimum clearance of 75mm from the earth and 150mm between phases to phase.

e) Meter visibility should be made such that it is clear for the meter reader to read the meter standing in front of the meter chamber. The cubicle shall be mounted on concrete plinth of suitable height. A bottom frame of MS angle as shown in the diagram shall be provided, duly bolted for mounting the LT metering cubicle on the plinth. The meter window of size 150X200mm shall be provided such that it is at the normal eye level.

f) The design of LT Metering Cubicle shall be such that the water should not enter inside the cubicle. Extended canopy shall be provided to avoid rainwater entry and Protected from limited dust ingressas per IP55 as per IS 12063, with air vents closed.

g) Necessary lifting hooks shall be provided for easy lifting and transportation.

6.0 Compartments of LT Metering Cubicle:

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The LT Metering cubicle shall consist of two metal enclosed compartments as follows:

a. CT, PT & Bus Bar Compartment : 01 No
b. Meter Compartment : 01 No

Note: The two chambers has to be in welded form and the mounting frame to be bolted to the LT cubicle.

a. CT, PT & Bus bar Compartment:

- The CTs to be mounted on the opposite side wall of the CTPT Compartment only. The CT's Secondary terminals should face the downward direction. Suitable clearance shall be maintained for future maintenance work.
- The PTs should be mounted on the opposite side wall of the CTPT Compartment only. The PT's Secondary terminals should face the downward direction. Suitable clearance shall be maintained for future maintenance work.
- For fixing the CT PT, necessary arrangement shall be made with the bolt and nuts firmly to the Cubicle vertical surfaces.
- Incoming (Main) side and Outgoing (Load) side shall be marked to identify for Incoming and outgoing.
- Detachable gland-plates shall be provided at the bottom side of this compartment to accommodate 3.5 core LT cables (95sqmm to 240sqmm).
- At the time of work execution, Incoming and outgoing LT cable shall be suitable marked to identify incomer and load side cable.

b. Meter Compartment:

- The Meter compartment with front door shall be provided on front side of the Cubicle and top of the CT/PT Compartment.
- The Meter compartment should be mandatorily able to house 2 Nos of meters (namely Main Meter and Check Meter)along with transparent cover TTBs and Modem mounted on a Hylam sheet of minimum 5mm thickness. The Hylam sheet shall be mounted on the wall of the meter compartment leaving not more than 12mm width and depth to avoid easy access to the Secondary wires.
- The Secondary Wires from the CTPT Compartment shall enter the Meter Compartment in a PVC Conduit inside Cubicle beneath the Hylam sheet to the Test Terminal Block. The secondary wires will further run from TTB to the Meter beneath the Hylam sheet. The Secondary wires shall not be exposed.
- On the front door there shall be another door opening (meter window), with a glass front covered, which shall be used for access to the meter only for purpose of reading.
- This auxiliary door (meter window) shall be of sufficient size to have access for reading and for downloading the meter data to

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MRI purpose. The glass used on this auxiliary door shall be toughened glass or laminated salty glass 5mm thick. It shall be possible to replace the glass from inside only and after breaking the seal and opening the door.

- Separate and independent sealing arrangements shall be provided for the Front door of the metering compartment and the auxiliary (meter window) door needed for downloading the meter data to MRI purposes. The purposes of having a main door and an auxiliary door is to ensure that the staff meant for taking periodical readings have limited access to the meter and do not have access to the metering compartment as a whole.

c. General feature of the compartments:

i. Detachable 1 square inch 14SWG weld mesh using 40 x 3mm iron frame Cover shall be provided with 6mm dia sealing bolt to prevent inadvertent access to the Compartment.The guards for the CTs and PTs are to be provided with sealing arrangements for bolt and nuts at the top of the mesh by making holes for the bolts to pass through. This cover shall be provided for CTPT compartment.

ii. A Body Grounding shall be run through for connecting the CT PT secondary wire star connections for CTPT compartment

iii. A Separate Grounding **with insulation** and bushing (isolation) shall be provisioned for connecting the PT primary Neutral star connection.

iv. The compartments suitable door shall be provide using the same mild steel sheets to make it tamper proof. Heavy duty concealed type hinges (hinges shall not be accessible from outside) shall be used for the door.

v. All the doors and removable covers shall be fixed all around with suitable gaskets and the metering cubicle shall meet the requirements of IP55 protection as per IS12063, with air vents closed.

vi. Separate and independent sealing arrangements shall be provided for all the doors.

vii. Suitable metal handles shall be provided for opening and closing the doors with heavy duty metallic locks to hold the doors firmly.

viii. The CT/PT compartment should be provided with suitable louvers welded with perforated sheet from inside.

7.0 Metering cubicle finished with powder coating:

The metering cubicle will be powder coated with pure polyester based powder after 7 tank process. The **colour** of the powder coating shall be **"RAL Grey 632 of IS:5"**

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The thickness of the powder coating film shall be minimum50 microns.

8.0 Current Transformers:

8.1 The LT metering equipment shall be provided with current transformers of reputed makes approved by BESCOM. The CTs shall be of indoor, single core wound primary, dry resin cast type and shall be of ratio as per the schedule of requirement. They shall be suitable for 3 phase, 50 Hz system as required. The terminals of the CTs shall be clearly marked by distinctive signs or letter.

8.2 The characteristics of CTs shall conform to the IS:16227 / Part – II of 2016 with latest amendment. The CTs shall conform to the following technical particulars.

i) Accuracy Class : 0.2S

ii) Burden : 2.5VA for all ratios.

iii) Rated thermal short current rating :

Sl. No.	CT Ratio	STC Rating
1.	75/1A	2.25KA/1Sec
2.	100/1A	3KA/1Sec
3.	125/1A	3.75KA/1Sec
4.	150/1A	4.5KA/1Sec
5.	175/1A	5.25KA/1Sec
6.	200/1A	6KA/1Sec

iv) Dynamic short time current rating : 2.5 times the rated short time thermal current rating.

v) Insulation level for CTs : 0.66 kV / 3 KV

vi) Power frequency withstand voltage : 3 KV

8.3 **Marking:** Each Current Transformer shall be marked with all relevant detailing on the nameplate in accordance with IS:16227 (with latest amendments).

8.4 General features :

i. The Height between the CT from base to the bottom of primary terminal stud of CT should be 150mm as per diagram enclosed.

ii. The Primary and Secondary terminals should be of **STUD TYPE** only. The material used should be copper or bimetallic. The primary terminal should be of M10& the distance between the primary terminals should be 45mm apart. The primary terminal should be projected out from the surface 40mm length threaded and provided with suitable nut & washers. The Secondary terminal should be of M5 & the distance between the secondary terminals should be 30mm apart. The Secondary terminal should be projected out from the surface 20mm length, threaded and provided with suitable nut & washers.

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iii. The serial nos. and Ratio of CTs should be super scribed on top surface.

iv. The terminal markings of CTs shall be made on both top and side surface clearly visible on opening of CTPT chamber/door. Sticker marking should be provided.

v. The overall dimensions of the CTs should be as per the diagram enclosed.

vi. The CT Ratios to be used for various Contract Demand shall be strictly as per the table enclosed, unless otherwise there is specific approval from BESCOM corporate office on case to case basis.

9.0 Potential Transformers:

9.1 The PTs shall be of reputed make approved by BESCOMand shall be for indoor use and without fuses and be of epoxy dry resin cast type single phase having voltage ratio 440V /√3: 110V/√3. They shall be suitable for operation on 3 phase, 50 cycles solidly grounded system.

9.2 The characteristics of PTs shall conform to the IS:16227 / part – III of 2016 with latest amendment. The PTs shall conform to the following technical particulars.

i)	Accuracy Class	: 0.2
ii)	Burden	: 5VA
iii)	Insulation level for PTs	: 0.66 kV/3 kV
iv)	One minute Power frequency withstand voltage	: 3 kV
vi)	Ratio	: 440V /√3: 110V/√3

9.3 Marking: Each Potential Transformer shall be marked with all relevant detailing on the nameplate in accordance with IS:16227 (with latest amendments).

9.4 General features:

i. The Total Height between the live terminal of the PT and the baseshould be 150mm.

ii. The Secondary terminals should be provided such that it is easily accessible from outside when mounted in the Metering Cubicle.

iii. The Primary and Secondary terminals should be of stud type only. The material used should be copper or bimetallic. The primary terminal should be of M8. The Secondary terminal should be of M5 type & the distance between the secondary terminals should be 30mm apart.

iv. The primary Neutral terminal should also be min 15mm apart from secondary terminal. All the three phases Neutral should be star connected and grounded using insulators and shouldn't be connected to Metering Cubicle body grounding.

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v. The serial nos. of PTs should be super scribed on top and sideways clearly visible on opening of CTPT chamber/door.

vi. The terminal markings of PTs shall be made on two sides. sticker marking should be provided.

vii. The overall dimensions should be as per the diagram enclosed.

10.0 Bus Bar:

The Bus bar size shall be as follows depending on the CT ratio used:

Sl. No	For Load	Bus Bar size	Material
1	50KW to 150KW	30 x 8 mm	Aluminium

The bus bars should be covered with PVCcolour sleeves with R,Y,B& N Markings.

11.0 Meters:

Electronic Tri-vector Meter 3 phase, 4 wire, 1A/63.5V (Electronic Meter) – 0.2S class conforming to IS 14697, as per New GOK specification and BESCOM approved makewith following type of meter specific to nature of customer.

Sl. No	Type of Consumer	Category of Meter	No of Meters required
1	Open access consumer without generating facility at the premises	Category C: DLMS, Unidirectional meter having ABT & TOD features	2 Nos (Main and Check)
2	Open access consumer having generating facility at the premises with net meter	Category B: DLMS, Bidirectional meter having ABT & TOD features	2 Nos (Main and Check)
3	Consumer having generating facility at the premises with net meter	Category B: DLMS, Bidirectional meter having ABT & TOD features	2 Nos (Main and Check)
4	Consumer without generating facility at the premises	Category C: DLMS, Unidirectional meter having ABT & TOD features	1 No.

12.0 Secondary Wiring:

Colour coded Wire shall be 4sqmm copper sheathed insulated copper wires for CT & 2.5sqmm for PT connections besides providing a sealable cover for the terminals shall be also painted in Red, Yellow, Blue & Black to indicate phase and neutral wiring. The Wire Ferrule and nomenclatureto be used are as shown in the wiring diagram for single meter wiring and dual meter (Main & Check Meter) wiring

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13.0 Test Terminal Block (TTB):

A reputed make Test Terminal Block (TTB) shall be used for each meter connected. The TTB shall be of Bakelite of reputed make with transparent cover. The TTB shall be positioned at the front so that the wiring work during the testing can be easily carried out. The terminals connecting material shall be bimetallic. The size of the terminal shall be of minimum 5.5sqmm and the terminal connection screws size shall be of 3.5sqmm.

14.0 Other General features:

a) The secondaries of the instrument transformers shall be laid in a PVC conduit from the ct/pt chamber into the Tri-vector / TTB through the rear side through hole of requisite diameter made on the partition sheet metal between meter and ct/pt chamber. The load side wiring connections from the TTB shall again be run in a conduit up to meter terminal and the wire connections shall enter the meter terminal blocks from the rear side of the meter mounted on sheet metal, through holes at the ends of the conduits. The TTB shall be ofBakelite of reputed make with transparent cover. The TTB shall be positioned at the front so that the wiring work during the testing can be easily carried out.

b) The cable terminations on the load side / main side are not covered in the scope of supply. Arrangement is shown in the drawings for purpose of providing the necessary facilities in the cubicle. Care shall be taken to maintain the required clearances for use in system.

15.0 Marking:

Each LT Metering Cubicle shall be marked as "Property of BESCOM" at the front side of the Metering Cubicle such that it is clearly visible. Also the nameplate shall carry all the details in accordance with relevant IS as follows:

i) Make:
ii) Sl.No.:
iii) CT Ratio:
iv) PT Ratio:
v) CT Sl. Nos.:
vi) PT Sl. Nos.:
vii) Meter Sl. No.
viii) Voltage Class:
ix) Year of Manufacturer:
x) P.O details., etc.,

16.0 Proto type and drawing:

The manufacturer will have to offer a prototype sample for inspection before bulk manufacturing. The prototype sample will be inspected by a team of purchasers representatives / agency. On approval of prototype the

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manufacturer will have to submit the drawings accordingly and get it approved from the purchaser before bulk manufacturing and supply.

17.0 TESTS:

The Cubicle manufacturer should use the instrument CT & PTs approved by BESCOM and should confirm to dimensions and features mentioned in this specification.

17.1 MT lab Testing of CTs, PTs and Meters:

All the CTs, PTs and Meters purchased from the original manufacturer (approved vendor), shall be sent to the BESCOM MT laboratory along with manufacturer test report for testing. The components will be tested as per relevant IS. The testing fee shall be borne by the manufacturer. The successfully tested CTs, PTs & Meters shall be sealed for having passed by MT lab.

Only the successfully tested & sealed CTs, PTs and Meters shall be assembled to the LT Metering cubicle and kept ready for complete Unit testing at manufacturer works.

17.2 Minimum Testing facilities:

The manufacturer must clearly indicate the details of testing facilities available at the works of manufacturer and that the facilities are adequate to carry out all routine and acceptance tests. These facilities should be available to purchaser Engineers, if deputed to carry out or witness the tests at the manufacturer's works.

For LT Metering Cubicle:

- Power frequency withstand test generator set with control panel.
- Current source for temperature rise test with digital ammeter, volt meter, temperature indicators and tong tester.

The tenderer shall furnish details of powder coating process employed.

17.3 Acceptance and Routine Test:

Following tests shall be carried out as acceptance and routine tests for Complete assembled LT Meter Cubicle:

a. Temperature rise test on complete unit at rated current of cubicle.
b. Power frequency withstand test at 3kV.
c. Overall dimension check.

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18.0 Inspection:

The inspection may be carried out by the purchaser at any stage of manufacture. The manufacturer shall grant free access to the purchaser/ representative at a reasonable time when the work is in progress. Inspection and acceptance of any equipment under this specification by the purchaser shall not relieve the manufacturer of his obligation of furnishing equipment in accordance with the specification and shall not prevent subsequent rejection if the equipment is found to be defective.

19.0 Documentation:

a. The manufacturer shall furnish two sets of following drawings and documents:
   i. Complete assembly drawings of the metering cubicle showing plan, elevation and typical sectional views and locations of cable boxes, bus-bars, metering compartments and meter.
   ii. Foundation plan showing location of foundation channels, anchor bolts of anchors, floor plan and openings for cables etc.,
   iii. Type test certificates for the type testing bought out items, if already carried out.
   iv. Descriptive pamphlets and literature of bought out items including CT characteristic curves, etc.,
b. All drawings and data shall be annotated in English.
c. The manufacturer shall be required to furnish four sets of final versions of all the above said drawings and documents within 15days after the proto type inspection for purchasers approval.
d. Approval of drawings / work by manufacturer shall not relieve manufacturer of his responsibilities and liability for ensuring correctness and correct interpretation of the drawings for meeting the requirement of the latest revision of applicable standards, rules and codes of practices. The equipment shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of ordering and purchaser shall have power to reject any work or materials which, in his judgment, is not in full accordance therewith.

20.0 Packing and forwarding:

The equipment shall be packed in crates suitable for vertical / horizontal transport, as the case may be, and suitable to withstand handling during transport and outdoor storage during transit. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable materials shall be carefully packed and market with appropriate caution symbols. Wherever necessary, proper arrangement for lifting, such as lifting hooks etc., shall be provided.

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Any material found short inside the packing cases shall be supplied by supplier without any extra cost.

21.0 Technical Compliance for Instrument Transformer & Meters:

The following Technical Compliance required with respect to the Instrument Transformer (CTs & PTs) and Meters to provide reliable Power Supply and avoid interruption to consumers.

21.1 Type test:

For the CTs, PTs and Meters the type tests shall be carried out as below.

a. For Current Transformers:
   All Tests (Except High Voltage power frequency wet withstand test) as per IS 16227 (Part – I) / 2016. Amended up to date, considering outdoor application of CTs
   - Short time current tests.
   - Temperature rise test.
   - Determination of errors or other characteristics accordingly to the requirements of the appropriate designation or accuracy class.

b. For Potential Transformers:
   All Tests (Except High Voltage power frequency wet withstand test) as per IS 16227 (Part – I) / 2016. Amended up to date, considering outdoor application of PTs
   - Temperature rise test.
   - High Voltage power frequency withstand test @ 3KV
   - Determination of errors or other characteristics accordingly to the requirements of the appropriate designation or accuracy class.

c. For Meters:
   All tests as per clauses of New GoK meter specification.

d. For Complete Unit:
   - Temperature rise test on complete unit at the rated current of cubicle of each voltage class with highest CT ratio (IS 3427 -1997)
   - Power frequency withstand test at 3kV.
   - Type test for IP55 protection as per category '2' as mentioned as per clause no 7.5 of IS 12063.

The LT Metering cubicles, CTs, PTs and Meters shall be fully type tested as per relevant IS and this specification. The manufacturer shall furnish detailed type test reports of all the type tests for offered CTs, PTs, Meters and LT Metering cubicles. For these CTs & PTs, the

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type tests shall be for each rating of short time current. These tests should have been carried within 7 years prior to the date of submission of type test reports. If TTRs as above are not submitted on or before due date and time, the offer shall stand rejected. The purchaser reserves the right to demand repetition of some or all TTRs in presence of purchaser/ representative at purchasers cost. In case the unit fails in any one type test, the complete supply shall be rejected.

All the above type tests shall be carried out at NABL laboratories to prove that the complete LT Metering cubicle, CTs, PTs and Meters offered meet the requirements of specification. The successful tenderer shall take approval / waive of type tests from the purchaser prior to commencement of supply.

21.2 Minimum Facilities required:

The manufacturer must clearly indicate the details of testing facilities available at the works of manufacturer and that the facilities are adequate to carry out all routine and acceptance tests. These facilities should be available to purchaser Engineers, if deputed to carry out or witness the tests at the manufacturer's works.

a. For CT/PT at original manufacturers works:
   - Class of accuracy test panel for CTs with phase angle and ratio error measuring unit with Current source, burden box and standard CT
   - Class of accuracy test panel for PTs with phase angle and ratio error measuring unit with Voltage source, burden box and standard PT
   - High Voltage Power frequency generator set with control panel.
   - Milli ohms meter.
   - Over voltage inter turn test equipment.

b. Meter:

As per new GoK meter specification.

21.3 Acceptance and Routine Test:

Following tests shall be carried out as acceptance and routine tests.

i. For Current Transformers:
   All tests as per clause No 7.3 of IS-16227 (Part-II) 2016.

ii. For Potential Transformers:
   All tests as per clause No 7.3 of IS-16227 (Part-III) 2016.

iii. For Meter:
   All tests as per clause of New GoK meter specification.

For CTs, PTs and Meters required tests shall be carried out at the original manufacturer's works in the presence of purchaser's representative.

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22.0 Guarantee/ Warranty:

The manufacturer shall stand guarantee for the materials supplied, especially CT, PT, Meter, Modem, etc., for a period of 18 months from the date of Supply of Metering Cubicle or 12 months from the date commissioning of LT Metering Cubicle whichever is earlier, for manufacturing defects.

23.0 Annexures:

The following annexures are herewith enclosed for adhering to the above specification.

1. Table showing CT ratios to be used for various LT consumer sanctioned load
2. LT Metering Cubicle Dimension diagram
3. Current Transformer Dimension diagram
4. Potential Transformer Dimension diagram
5. Single Meter wiring diagram
6. Dual Meter (Main & Check Meter) wiring diagram

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Table showing LT CT Ratios for different loads

Sl. No.	Sanctioned Load in kW	Required CT ratio
1	51-60	75/1A
2	61-80	100/1A
3	81-100	125/1A
4	101-120	150/1A
5	121-135	175/1A
6	136-150	200/1A

Note: These are all general LT CT ratios for differentloads. Any deviations in the CT ratios shall be approved from BESCOM Corporate office on case to case basis.

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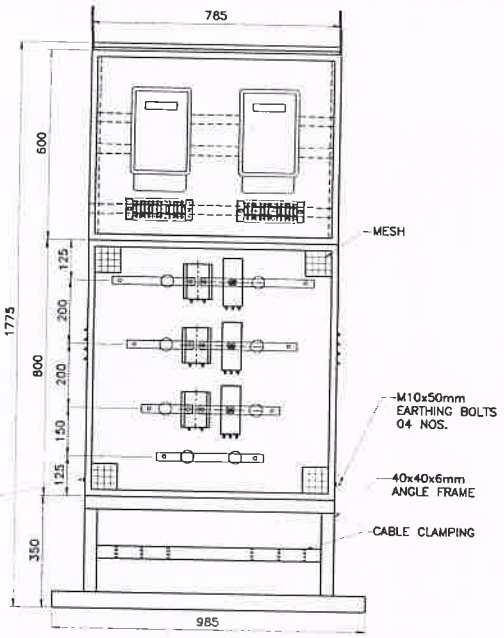
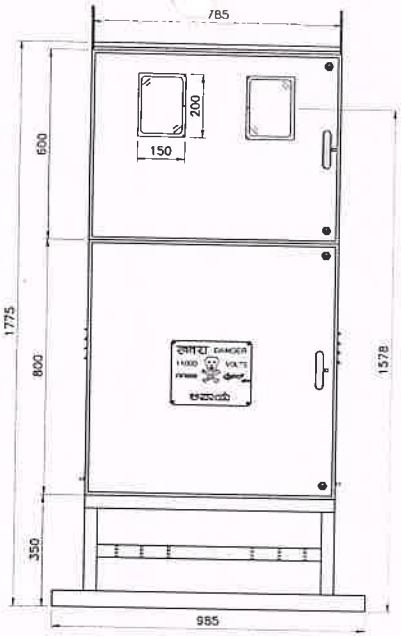
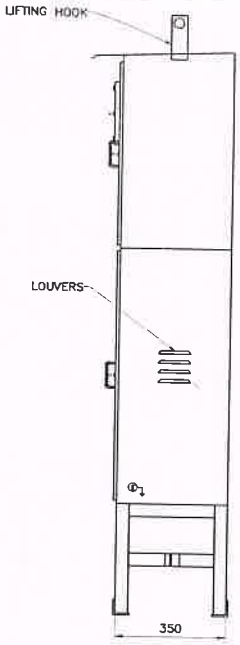


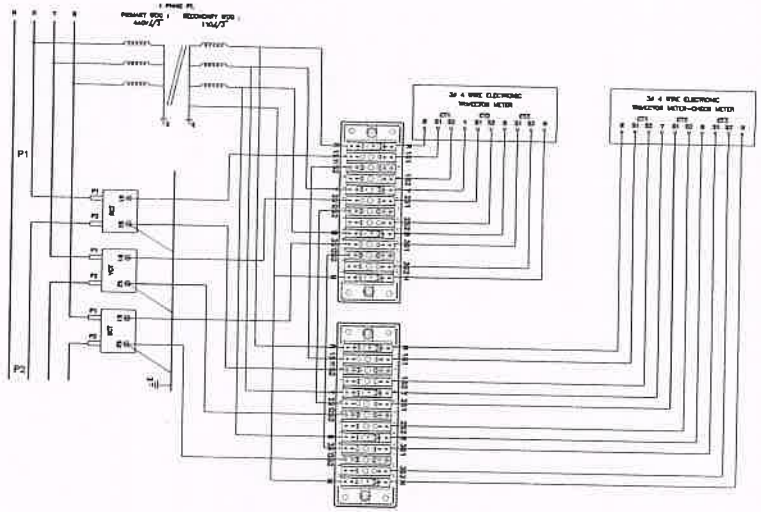
FRONT VIEW
DOOR OPEN



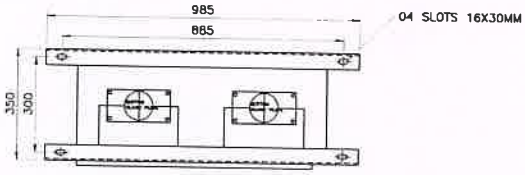
FRONT VIEW
DOOR CLOSED



SIDE VIEW



WIRING DIAGRAM ALONG WITH TTB



BOTTOM VIEW

NOTES:

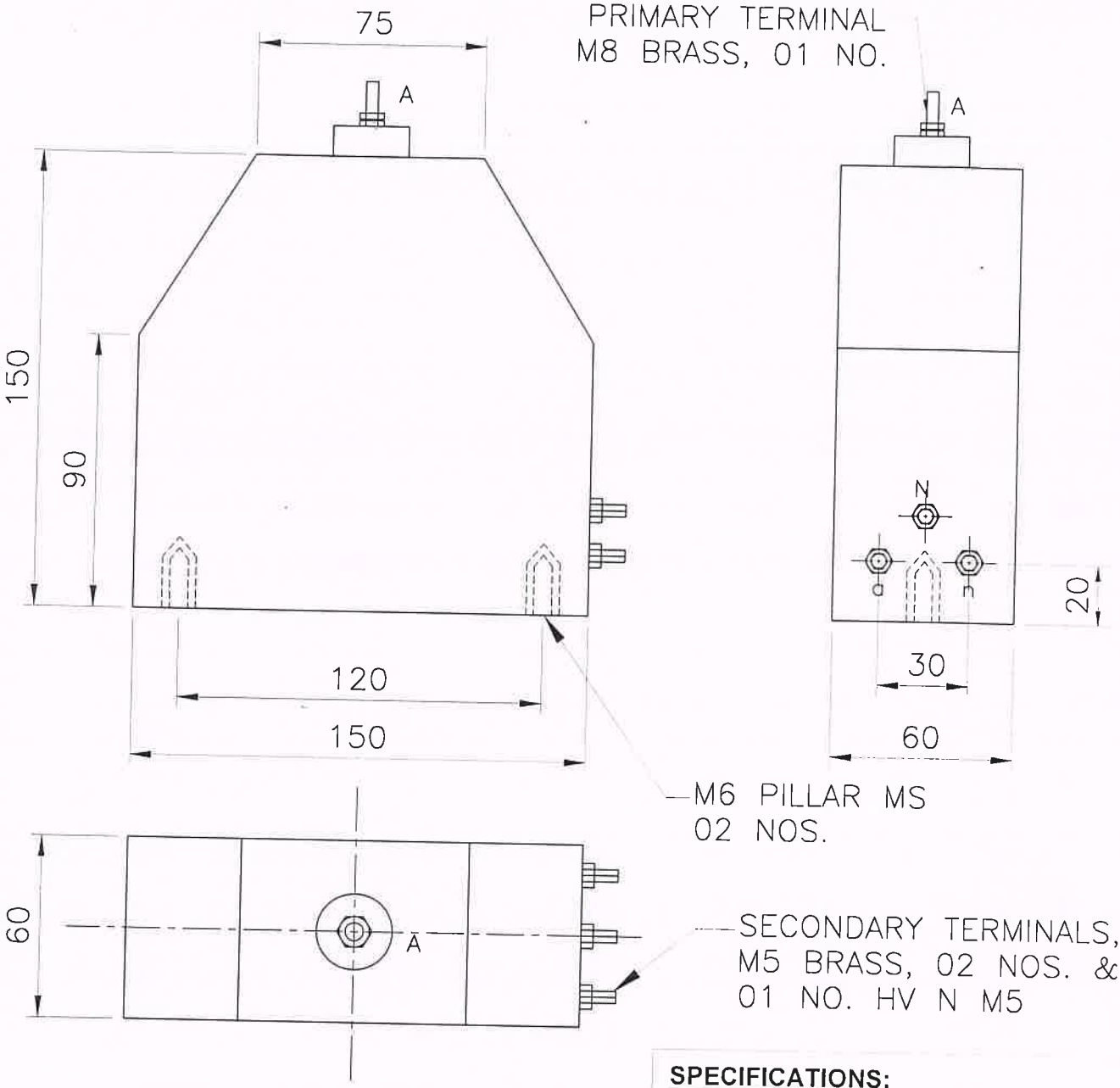
1. ALL DIMENSIONS ARE IN mm.
2. SHEET STEEL THICKNESS 1.6MM(Min).
3. CTs WILL BE OF SINGLE PHASE DRY TYPE & PTs WILL BE OF 1Φ, DRY TYPE.
4. FINISH : POWDER COATED WITH PURE POLYSTER BASED POWDER WITH THICKNESS 50 MICRONS OF DA GRAY.
5. ALL HARDWARE EXPOSED TO ATMOSPHERIC CONDITIONS ARE OF SS INCLUDING SEALING BOLTS
6. CABLE CLAMP SUITABLE FOR 300 Sq.mm
7. CT SECONDARY STAR POINT EARTHED IN CT/PT CHAMBER.
8. 01 No. SEALING BOLTS WILL BE PROVIDED ON THE DOOR OF THE METER CHAMBER
   01 No. WILL BE PROVIDED ON DOOR OF CT/PT CHAMBER
9. LT RESIN CAST CTS 3 Nos. AS PER IS16227 PART–II/2016, BURDEN 2.5VA, CLASS 0.2S, BIL–0.66/3 kV.
10. LT RESIN CAST PTS 3 Nos. AS PER IS16227 PART–III/2016, RATIO $\frac{440V}{\sqrt{3}}$ / $\frac{110V}{\sqrt{3}}$ BURDEN 5 VA, CLASS 0.2 VOLTAGE FACTOR 1.2 TIMES FOR CONTINOUS, BIL–0.66/3KV.
11. SECONDARY WIRING SHALL BE COLOUR CODED WITH 4Sqmm COPPER SHEATHED INSULATED WIRE FOR CT'S AND 2.5Sqmm WIRE FOR PT'S
12. THE DANGER BOARD SHALL BE MADE FROM MILD STEEL OF MIN 1.6MM THICK AND SHALL BE VITREOUS ENAMELLED WHITE LETTERS, FIGURES AND THE CONVENTIONAL SKULL AND BONES IN SIGNAL RED COLOUR.

APPROVED
General Manager (Ele)(QS&S)
BESCOM
Checked
AGM-MTD
Verified
DGM-MTD

BILL OF MATERIALS:

Sl. No	DESCRIPTION	QUANTITY	PARTICULARS	MAKE
1.	ELECTRONIC TRI VECTOR METER	01 No.	3Φ, 4WIRE, 63.5V/1A, 0.2S	APPROVED MAKE
2.	TEST TERMINAL BLOCKS	01 No.	3Φ, 4WIRE	APPROVED MAKE
3.	$\frac{440V}{\sqrt{3}}$ / $\frac{110V}{\sqrt{3}}$, POTENTIAL TRANSFORMERS	03 Nos.	5VA, 0.2 CLASS	APPROVED MAKE
4.	CURRENT TRANSFORMERS 50/1A, 75/1A, 100/1A, 125/1A, 150/1A, 200/1A, 225/1A & 250/1A	03 Nos.	2.5VA, 0.2S CLASS	APPROVED MAKE
5.	BUS BAR SUPPORT	08 Nos.	EPOXY RESIN CAST	
6.	BUS BARS	------	30x8mm ALLUMINIUM BUS BAR WITH R Y B MARKING	

	Signatures	All dimensions are in mm unless otherwise stated.	BESCOM
Chd	AGM (QS&S)	GA DRAWING FOR LT METERING CUBICLE FROM 50KW TO 150KW SHEET 1 OF 3	Approved: General Manager,(Elec.) QS&S
Sub	DGM (QS&S)		DRG.NO.BESCOM/GM/QS&S/81 REV–000 DATED:30–03–2022
	SCALE: N.T.S		



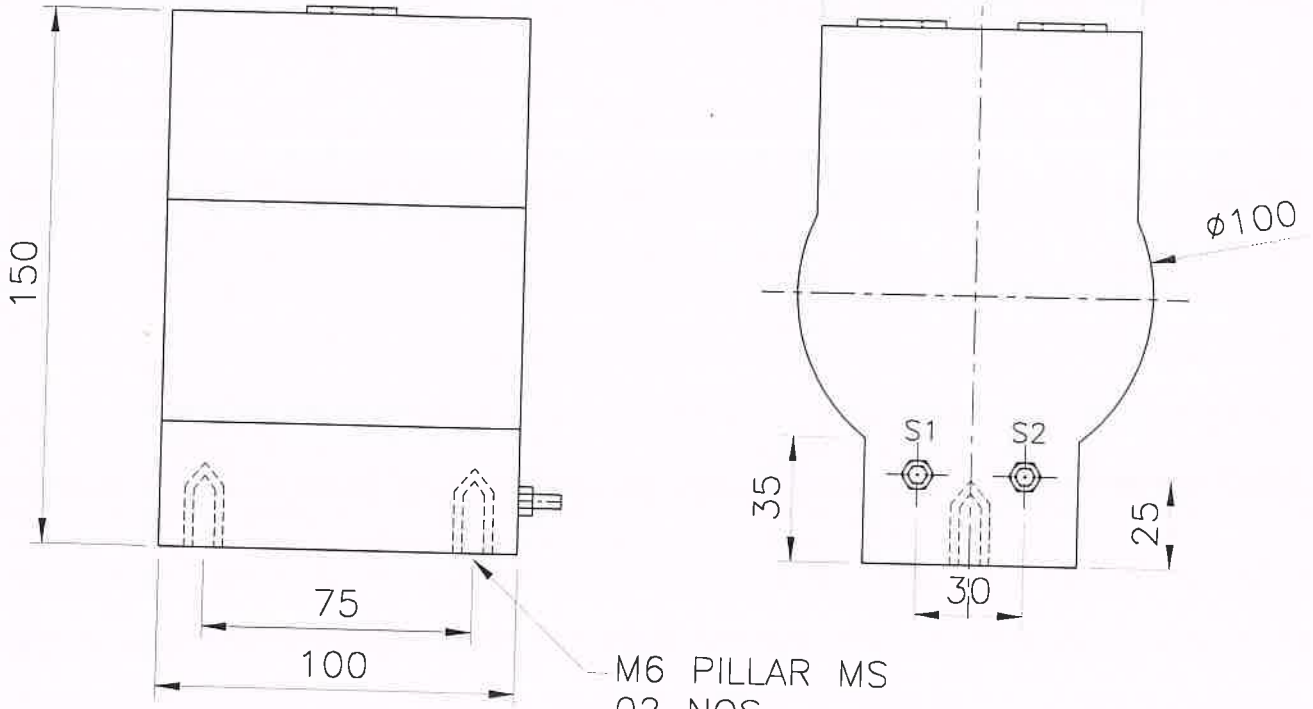
INDOOR RESIN CAST 1PHASE LT POTENTIAL TRANSFORMER

APPROVED
General Manager (Ele) (QS&S)
BESCOM
Checked AGM.-MTD
Verified DGM.-MTD

SPECIFICATIONS:

Ratio	: $\frac{440V}{\sqrt{3}} / \frac{110V}{\sqrt{3}}$
Burden	: 5 VA
Acc. Class	: 0.2
Ins. Level	: 0.66 / 3 KV
Vtg. Factor	: 1.2 Cont.,
Frequency	: 50 Hz
App. Std	: IS 16227 / 2016
Year of Mfg.	:
Sl. No	:

	Signatures	All dimensions are in mm unless otherwise stated.	ಬೆಸ್ಕಂ BESCOM
Chd	AGM (QS&S)	GA DRAWING FOR LT METERING CUBICLE FROM 50KW TO 150KW	Approved: General Manager,(Elec.) QS&S
Sub	DGM (QS&S)	SHEET 2 OF 3	DRG.NO.BESCOM/GM/QS&S/81 REV-000 DATED:30-03-2022
	SCALE: N.T.S		



INDOOR RESIN CAST WOUND TYPE CURRENT TRANSFORMER

SL. NO.	CT RATIO	STC RATING
1.	50/1A	1.5 kA/1SEC
2.	75/1A	2.25 kA/1SEC
3.	100/1A	3 kA/1SEC
4.	125/1A	3.75 kA/1SEC
5.	150/1A	4.5 kA/1SEC
6.	175/1A	5.25 kA/1SEC
7.	200/1A	6 kA/1SEC
8.	225/1A	6.75 kA/1SEC
9.	250/1A	7.5 kA/1SEC

APPROVED
General Manager (Ele)(QS&S)
BESCOM
Checked AGM-MTD
Verified DGM-MTD

Technical Specifications:

Ratio	: 50/1A to 250/1A
Burden	: 2.5 VA
Acc. Class	: 0.2S
I.S.F	: ≤ 5
Rated STC	: As per Table
Ins. Level	: 0.66 / 3KV
Frequency	: 50Hz
App.STD	: IS 16227/2016
Year of Mfg.	: 2022
Sl. No.	:

	Signatures
Chd	AGM (QS&S)
Sub	DGM (QS&S)
SCALE: N.T.S	

All dimensions are in mm unless otherwise stated.

GA DRAWING FOR LT METERING CUBICLE FROM 50KW TO 150KW

SHEET 3 OF 3

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BESCOM

Approved:

General Manager,(Elec.)
QS&S

DRG.NO.BESCOM/GM/QS&S/81
REV–000 DATED:30–03–2022