

**GUARANTEED TECHNICAL PARTICULARS FOR
FOR C.T. OPERATED THREE PHASE FOUR WIRE LT ELECTRONIC TRIVECTOR METERS**

| Sl. No. | Item | Requirement |
|---------|---|--|
| 1. | Make | - |
| 2. | Type | - |
| 3. | Country of origin | - |
| 4. | Application | 3 phase 4 wire, CT operated |
| 5. | Rated Voltage | 230V (Phase to Neutral) |
| 6. | Rated Current | 3 x 5A (Basic current) |
| 7. | Frequency | 50 Hz \pm 5 % |
| 8. | Overload capacity | 200% of Ib |
| 9. | Minimum starting current in % of base current | 0.1% of Ib |
| 10. | Loss in potential circuit | Specify |
| 11. | Loss in current circuit | Specify |
| 12. | Change in error due to : | |
| | a. Variation in frequency | 50 Hz \pm 5 % |
| | b. Variation in temperature | As per IEC 60687 |
| | c. Variation in voltage | As per IEC 60687 |
| 13. | Accuracy Class | 0.5 |
| 14. | Total Weight of meter | To be specified by the supplier |
| 15. | Details of case | Totally insulated Bakelite /Engineering plastic cover body or any other improved version of material. The advantage for using it may be specified. Earthing provision in case of wholly or partial metallic body. The meter should be ultrasonically welded. |
| 16. | H.V. withstand | As per As per CBIP Technical Report No-88 voltage in KV (RMS) (Mention the KV for conducting & Insulating portions, separately) |
| 17. | Insulation Resistance | As per IEC 60687 |
| 18. | Standard to which the meter confirm | |
| 19. | Type of Energy Registration Mechanism. | to be specified |
| 20. | MD Reset Mechanism | 1.Through sealable push button 2.Through MRI. |
| 21. | Insulation Test (Voltage 50Hz for 1Min) | As per IEC 60687 |
| 22. | Temperature co-efficient from 10% of rated load to 100 % rated load (5°C to 45°C) | As per IEC 60687 |
| 23. | Working range | |
| | Voltage | -30% to +20% of rated voltage |
| 24. | Type of load (linear, non linear, balanced /unbalanced at any P.F.) | All type of load. |
| 25. | Display details | |

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| | i. Display Cycle (descriptive In order of display) | Display on meter- LCD TEST REAL TIME DATE ACTIVE ENERGY REACTIVE ENERGY APPARENT ENERGY RISING DEMAND WITH ET(KVA) MAX. DEMAND (KVA) MD RESET COUNT INST POWER FACTOR INST FREQUENCY INST VOLTAGE(R ,Y, B PHASE) INST CURRENT (R,Y, B PHASE) INST ENERGY (KW,KVA,KVAR) TOD MAX. DEMAND TOD MD OF PREVIOUS BILLING PERIOD TOD ENERGY CUMULATIVE MAXIMUM DEMAND PRESENT STATUS OF TAMPER LAST OCCURANCE OF TAMPER WITH DATE & TIME LAST RESTORATION OF TAMPER WITH DATE & TIME TOTAL NO OF ABONORMAL EVENTS POWER ON-HOURS |
| | ii. Process of display (Automatic in cyclic manner / through push button. | Both options should be available. |
| | iii. Digits | Specify |
| | iv. Segments for display of one digit | 7 (Seven) |
| | v. Period of display of each parameter | Should be sufficient to read & note (around 10 sec.) |
| 26 | Memory | Non volatile memory without battery back-up at least 12 years. |
| 27 | Non volatile memory | Should be sufficient to store data of consecutive 12 billing periods with energy values- KWH, KVARH,KVAH; Maximum Demand Values – KVA, KW – with date and time of occurrences of MD. Date, time and type(push button, MRI, billing point) of MD Resets. |
| 28 | Meter can be powered up by external power source in absence of Supply voltage | To Specify |
| 29 | Abnormal event data preservation capacity | Should be able to store at least 150 (occurrences and restoration are separate events) Scrolling type, First In First Out |
| 30 | Multiplying factor (If meter is used for Different current ratio) | 200/5A & 100/5A. |
| 31 | Load Survey capability | |

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| a. | Parameter Logged | KW, KVAR, KVA, Voltage- Vr,Vy,Vb, Current-Ir,Iy,Ib, PF |
| b. | Logging interval | 30 Minutes |
| c. | No. of days of Load Survey | 40days |
| d. | MD logging | 15 minutes |
| 32 | Earthing Terminal | As per CBIP Technical Report.No.-88 |
| 33 | Time of the day Zone | 4 time zones per day will be available for demand. 07:00 – 10:00 10:00 – 18:00 18:00 – 22:00 22:00 – 07:00 2 time zones per day will be available for all energy 06:00 – 22:00 22:00 – 06:00 |
| 34 | Capability for fraud Prevention & detection | 1. Missing Potential and Potential imbalance, 2.Voltage- High/Low, 3. Current Imbalance, 4. CT Reversal, 5. CT short, 6. CT open, 7. Power On/Off, 8. High Neutral current, 10. External Magnetic Influence. |
| 35 | Sealing and Locking Arrangement | Adequate sealing & Locking arrangements will be provided, to avoid tampering (Specify) |
| 36 | Type of communication | Optical port- RS232. |
| 37 | Real Time Clock | Time Drift and adjustment facility with MRI to be specified. |
| 38 | Mandatory Spare parts | |
| | a. Interfacing cords | As per CBIP Technical Report –111 40 numbers interfacing cords should be supplied. |
| | b. CMRI (DCD Software) | As per CBIP Technical Report –111 Provision should be made to implement the s/w in approx. 40 CMRIs- (RADIX and ANALOGIC). |
| | c. Base Computer System Software | 2 sets of software should be supplied. |

**GUARANTEED TECHNICAL PARTICULARS FOR TAMPER PROOF BOX
THE TP BOX SHOULD BE AS PER DRAWING ATTACHED**

| Sr. No. | Characteristics | Requirement | Proposed |
|----------------|--|------------------------------|-----------------|
| 1. | Materials used for box body | CRCA sheet of 1.6 mm. | OK |
| 2. | Material withstanding temperature | As per relevant standard | OK |
| 3. | Dimension of the box | As per the drawing attached. | OK |
| 4. | Handle provision | To be Provided | OK |
| 5. | Earthing provision | To be Provided | OK |
| 6. | Sealing Arrangements | To be Provided | OK |
| 7. | Inlet & outlets for cable entry and exit. | To be Provided | OK |
| a. | Gasket | To be Provided | OK |
| b. | Whether gasket is provided for door and window | To be Provided | OK |
| 8. | TTB | To be provided | OK |