

Technology of Measurement...
defined

Digital Energy Meters

- CT-2M & CT-2MHT - Counter Type Display
- CT-2E & CT-2EA - LCD Type Display



- Counter Type Display
- LCD Type Display

HPL brings you a wide range of AC Energy Meters
for both HT & LT application



POWER OF TECHNOLOGY

METERING



Three Phase kWh Panel Meters - Counter Display



CT-2M
For LT Application
Counter Display



CT-2MHT
For HT Application
Counter Display

Specifications

- Digital measurement.
- CT & PT Operated energy meter.
- 3 Ph 4 wire LT Application & 3 Ph 3 wire HT Application.
- Flush mounting compact design (96x96mm).
- Potential free pulse output for energy.

Accuracy

- Accuracy class 1.0.
- Accuracy maintained even under wide voltage fluctuation, from -40% to +20% of Reference Voltage.
- Accurate reading even under rapid current fluctuation.
- Accurate reading for balance as well as unbalance loads.

Anti Tamper Features

- Meter records correct energy with same accuracy under reverse current connection of one or all phases.
- Phase available indication provided.
- Meter Works on neutral removal.
- Meter works on removal of any one or two phases.

HPL





Technical Information of Panel Meters

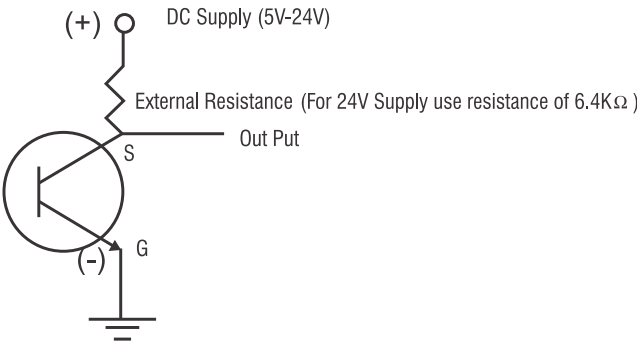
| | CT-2M Meter | CT-2MHT Meter |
|-------------------------|---|--|
| Functions | Measures Energy accurately even under adverse supply for 3 phase 4 wire network. | Measures Energy accurately even under adverse supply for 3 phase 3 wire network. |
| Range | (1) -/5A (2) For direct reading with external CTs 50/5A 60/5A 75/5A 100/5A 125/5A 150/5A 200/5A 250/5A 300/5A 400/5A 500/5A 600/5A 800/5A | CT : 1-6A (Suitable for CT secondary -/1A & -/5A on the same model) PT : 2 x 110 VLL |
| Conformity to Standards | IS 13779 | IS 13779 / IEC-61036 |
| Other Features | <ul style="list-style-type: none">Instantaneous start.No separate Auxiliary supply is required.Low power consumption less than 1 watt.Saving of more than 30% over conventional meters.Direct reading CT operated meterPotential free pulse output for energyNo frequent adjustments required.No mechanical wear & tear. | <ul style="list-style-type: none">Instantaneous start.No separate Auxiliary supply is required.Low power consumption less than 1 watt.Saving of more than 30% over conventional meters.Potential free pulse output for energyNo frequent adjustments required.No mechanical wear & tear. |

Pulse Output

1 Pulse = 10 Wh x External CT Ratio x External PT Ratio*
eg.: If External CT Ratio is 100/5 = 20
IF External PT Ratio is 11kV / 110V = 100
1 Pulse = 10 Wh x 20 x 100
= 20000 Wh
= 20 kWh

*Applicable for HT application

Pulse Output Wiring Diagram



- Note:
- 1) Our Pulse Output is Open Collector Type.
 - 2) External Resistance is to be used between DC Supply point & 'S' of our pulse output.
 - 3) For 24V DC use an external resistance of 6.4KΩ .
 - 4) This external resistance value will vary depending upon the external voltage (5-24V) being given by the user.

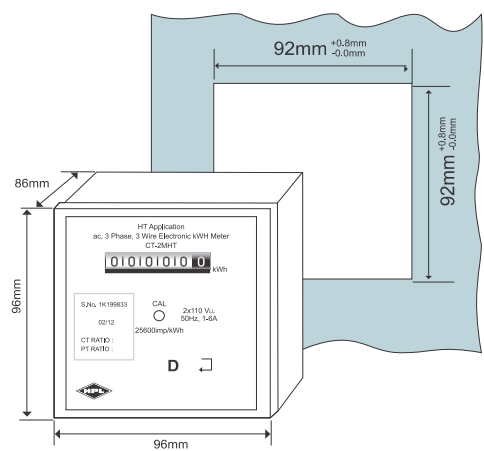
Technical Specification of CT-2M & CT-2MHT

| | CT-2M Meter | CT-2MHT Meter |
|-------------------|---|--|
| Operating Voltage | 240V, -40% to +20% Phase to Neutral | 2 x 110 VLL |
| Frequency Range | 50Hz ± 5% | 50Hz ± 5% |
| Display | 5 + 1 digits for -/5A meter 6 digit for direct reading meter | 5 + 1 digits counter type |
| Current Rating | -/5A | 1 - 6A |
| Operating Temp | -10°C. to 60°C. | -10°C. to 60°C. |
| Dimensions | 96 x 96 x 86mm (L x W x H) (with connectors) | 96 x 96 x 86mm (L x W x H) |
| Accuracy | Class 1.0 | Class 1.0 |
| LEDs | Four LEDs provided on front window for following indications. - Meter Calibration - Phase indication available for each phase. (3 Nos.) | 1 LED provided on front window for following indications. - Meter Calibration |

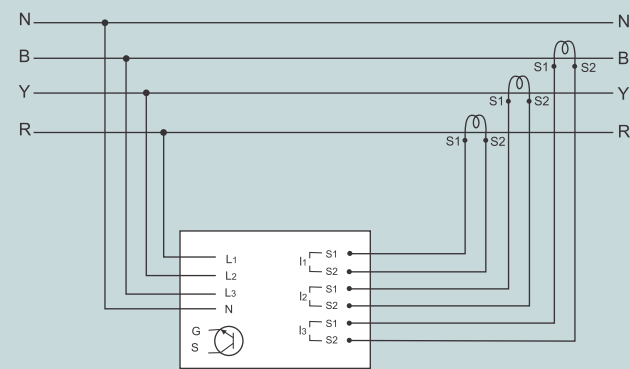
Panel Cutout Details

The panel Meter is installed on the cabinet's front panel and shall be secured firmly with cabinet using 4 transparent Clips

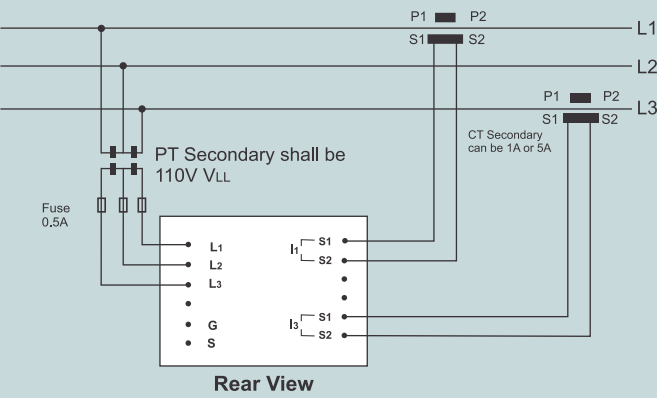
Use 0.5mm² to 2.5mm² Cable for Voltage terminal & 3mm² to 6mm² cable for Current terminals



CT-2M - Wiring Diagram



CT-2MHT - Wiring Diagram



- S, G = Pulse Output
- Sealing facility provided



Three Phase kWh Panel Meters - LCD Display



CT-2E
3 Phase Panel Meter
LCD Display



CT-2EA
3 Phase Panel Meter
LCD Display

Technical Features

Functions

Measures Energy accurately even under adverse supply conditions.

Range

- LT 3 Phase 4Wire suitable for:
- (1) -/5A CT Secondary
 - (2) For direct reading with external CTs of 5A Secondary. The primary is selectable from 5A to 6000A in steps of 5A

Conformity to Standards

IS 13779 / IEC - 61036

Specifications

- Digital measurement
- CT Operated energy meter
- 3 Ph 4 wire LT Application
- Flush mounting compact design (96x96mm)
- Potential free pulse output for energy
- Conforms to IS-13779 / IEC-61036



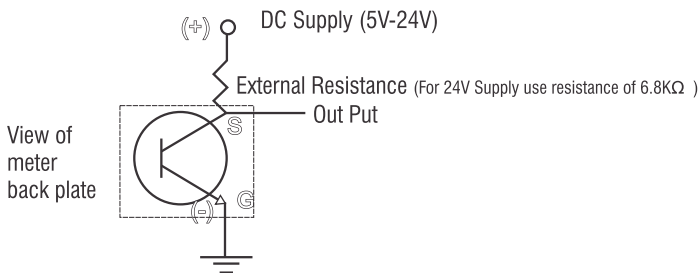
Other Features

- LCD type display.
- Low power consumption less than 1 watt. Saving of more than 30% over conventional meters.
- Direct reading CT operated meter.
- Potential free pulse output for energy.
- Finger touch-proof terminals for CT & Voltage connections.
- RS 485 MODBUS available to connect up to 32 Nos. CT-2EA on one communication port over a cable distance of 1000 meters on a network. Totally 255 devices can be connected on a MODBUS network.

Technical Specification of CT-2E & CT-2EA Meter

| | |
|-------------------|--|
| Operating Voltage | 240V, -40% to + 20% Phase to Neutral |
| Frequency Range | 50 Hz \pm 5% |
| Display | 6 digit for -/5A meter and 6+1 digit for direct measurement with a digit after decimal point |
| Operating Temp. | -10°C. to 55°C |
| Dimensions | 96mm x 96mm x 86mm (L x W x H) (with connectors) |
| Power Consumption | Less than 1 watt / phase |
| Programming Keys | Ⓢ For Selection Ⓢ For Confirmation |
| Pulse Output | Potential free contact |
| Pulse Duration | 100m sec (Minimum) |
| Pulse Weight | 1 Pulse = 1 kWh for direct reading = 100 wh for -/5A meter |

Connection Diagram for Pulse output



- Note:
- 1) Our Pulse Output is Open Collector Type.
 - 2) External Resistance is to be used between DC Supply point & point 'S' of our pulse output.
 - 3) For 24V DC use an external resistance of 6.8KΩ .
 - 4) This external resistance value will vary depending upon the external voltage (5-24V) being given by the user.

Accuracy

- Accuracy class 1.0
- Accuracy maintained even under wide voltage fluctuation from -40% to +20% of Reference Voltage
- Accurate reading even under rapid current fluctuation.
- Accurate reading for balance as well as unbalance loads.

Anti Tamper Features

1. Records energy accurately under the following.
Tamper conditions:
a) One or Two phases are removed. OR
b) Neutral is Removed. OR
c) Reverse current condition.
2. Indication on LCD in case of CT reverse connections.





Front View of CT-2EA

- 1. kWh Display
- 2. CT Reverse Indication
- 3. Calibration LED : 15000 imp/kWh for -/5A
- 4. "D" key used for increment the value while setting password & CT Ratio
- 5. "↵" to confirm the entered value & to move the digit right to left



Front View of CT-2M

- 1. kWh Counter Display
- 2. Phase Indication LED's
- 3. Calibration LED : 15000 imp/kWh for -/5A



Applications of CT-2 Series Meters

- Air Conditioning and Refrigeration Panels.
- Industrial Application.
- Electrical Panels - Industrial HT & LT Panels.
- Motor Control Centers, Distribution Control & Relay Panels.
- Equipment Monitoring.
- Transmission and Distribution Panels.
- In control panel to control different electrical loads.
- Genset, Solar and UPS applications.
- Test Benches and laboratory equipment.
- Special OEM application.



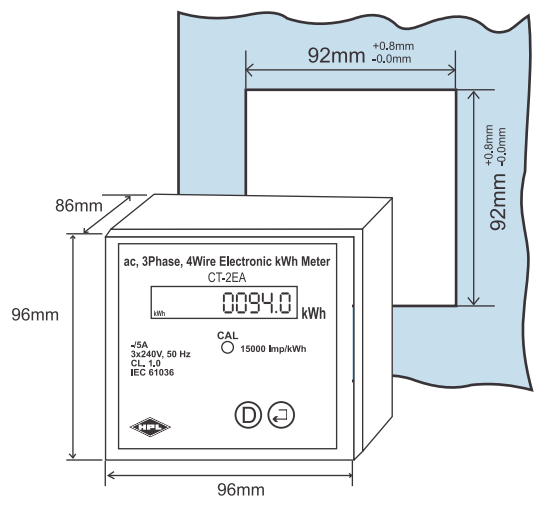
Ordering Information

| Model | Description | CAT. Code |
|---------|---|-------------|
| CT-2M | -/5A, LT-CT Operated or Direct Reading with Range 50/5A to 800/5A,Class 1.0 | PAMCT2MXXXX |
| CT-2MHT | For HT Application | PAMCT2MHT00 |
| CT-2E | -/5A, LT-CT Operated Programmable upto 6000A Primary Current,Class 1.0 | PAMCT2EXXXX |
| CT-2EA | -/5A, LT-CT Operated Programmable upto 6000A Primary Current with RS485,Class 1.0 | PAMCT2EA005 |

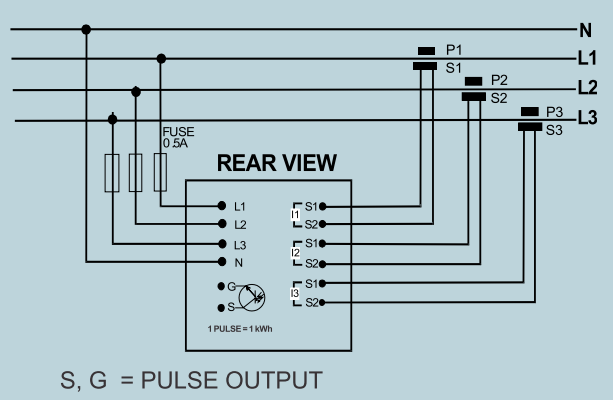
Panel Cutout Details

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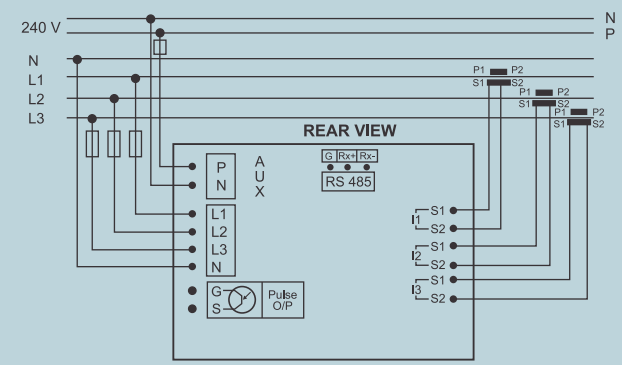
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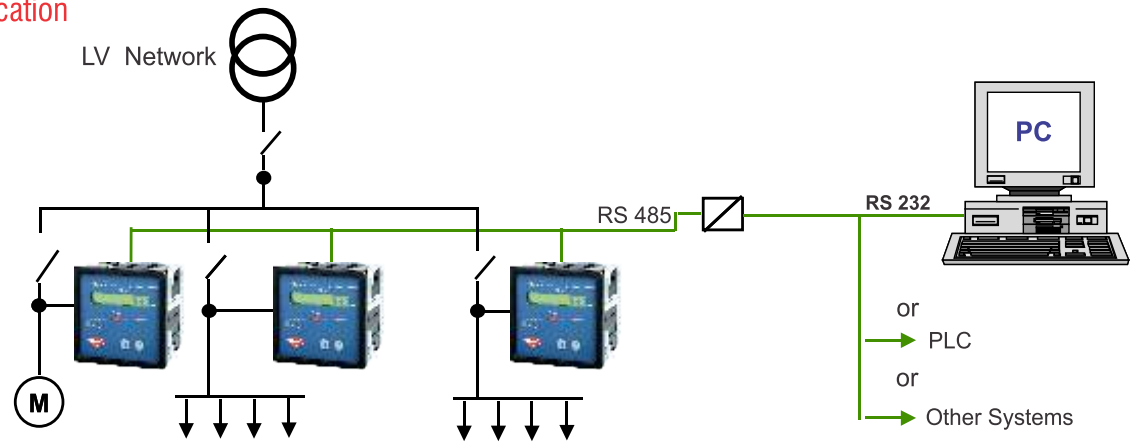
Wiring Diagram for CT-2E



Wiring Diagram for CT-2EA



Communication



HEPPL/CT-2 Series/MAR-14



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