

# Multifunction Meter (WMN)



## Features :

- 3Ø True RMS (Voltage, Current)
- 3Ø Power (Active, Reactive, Apparent), Energy (Active, Reactive, Apparent)
- Programmable CT / PT Primary / Secondary
- CT Polarity Error Detection
- Variable Pulse Width Selection
- Single Phase Network with Phase Selection
- Modbus RTU Communication (RS485)
- Neutral Current Measurement
- THD Upto 31<sup>st</sup> Level
- Max Demand for Power
- Single Pulse Output / Demand
- Phase Sequence Detection

Certification : 

## Display Specifications

|          |                                        |
|----------|----------------------------------------|
| Display  | 4 rows, LCD with Backlight             |
| Digits   | 4 (Lowest 8 digits for energy display) |
| Bargraph | For Current Representation             |

## Input Specifications

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Electrical Connection | 3Ø - 3 wire, 3Ø - 4 wire, 2Ø - 3 wire, 1Ø - 2 wire                                                                                                                                                                                                                                                                                                                                                                                        |
| Input Voltage Range   | 11 to 300V AC (L - N)<br>19 to 519V AC (L - L)                                                                                                                                                                                                                                                                                                                                                                                            |
| Input Current Range   | Nominal 5AAC (Min - 11mA, Max - 6A)                                                                                                                                                                                                                                                                                                                                                                                                       |
| Frequency             | 45 to 65Hz                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Display Scrolling     | Automatic / Manual (Programmable)                                                                                                                                                                                                                                                                                                                                                                                                         |
| Power Consumption     | 8VA max                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Display Reset         | Programmable (For energy)                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Resolution            | For energy :<br>0.01k, 0.1k, 1k, 0.01M, 0.1M, 1M<br>(depending upon CT ratio x PT ratio)<br>For Power, Voltage,<br>Current : Auto Resolution<br>For Power Factor : 0.001                                                                                                                                                                                                                                                                  |
| Accuracy              | Voltage (L - N / L - L) : ±0.5% of F.S.<br>Current : ±0.5% of F.S.<br>Power Factor : ±0.01<br>Frequency : ±0.1% For L - N Voltage >20V<br>For L - L Voltage >35V<br>Power (Active, Reactive, Apparent) : 1%<br>Energy (Active, Reactive, Apparent) : Class 1                                                                                                                                                                              |
| Memory Retention      | 10 years (For energy)                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Measuring Parameters  | Voltage (L - L / L - N) (Individual / Average),<br>Current (Individual / Average),<br>Frequency, Power Factor (Individual / Total),<br>Active, Reactive & Apparent Power (Individual / Total),<br>Active, Reactive & Apparent Energy (Individual),<br>Demand (Min / Max Active Power, Min / Max Reactive Power, Max Apparent Power),<br>%THD upto 31 <sup>st</sup> Level Max Demand Current,<br>Neutral Current, Phase Sequence Detection |

## Output Specifications

|                                      |                                                                                                 |
|--------------------------------------|-------------------------------------------------------------------------------------------------|
| Pulse Output                         | Voltage Range : External 24V DC max<br>Current Capacity : 100mA max<br>Pulse Width : 100ms ±5ms |
| Communication Interface and Protocol | RS485 and MODBUS RTU                                                                            |
| Communication Address                | 1 to 255                                                                                        |
| Transmission Mode                    | Half duplex                                                                                     |
| Transmission Distance                | 500 meter maximum                                                                               |
| Transmission Speed                   | 300, 600, 1200, 2400, 4800, 9600, 19200 (in bps)                                                |
| Parity                               | None, Odd, Even                                                                                 |
| Stop Bits                            | 1 or 2                                                                                          |
| Response Time                        | 100ms (max and independent of baud rate)                                                        |

## Auxiliary Supply Specifications

|                |                                                 |
|----------------|-------------------------------------------------|
| Supply Voltage | 100 to 240V AC, -15% to +12%, 50 / 60 Hz, (±5%) |
|----------------|-------------------------------------------------|

## Settable Parameters

|              |                                             |
|--------------|---------------------------------------------|
| CT Primary   | 1 / 5A to 10kA (Programmable for any value) |
| CT Secondary | 1 / 5A (Programmable)                       |
| PT Primary   | 100V to 500kV (Programmable for any value)  |
| PT Secondary | 100V to 500V (Programmable for any value)   |

## Environmental Specifications

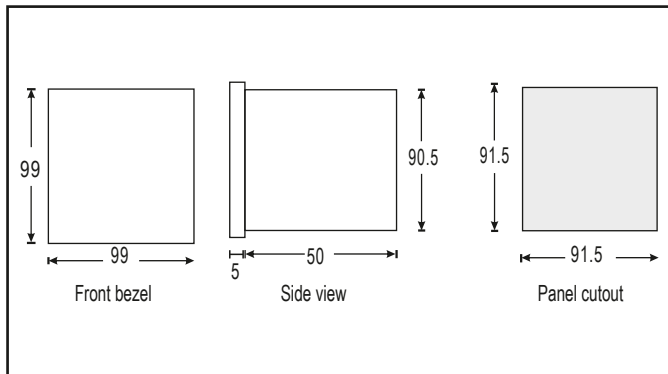
|                             |                                                                            |
|-----------------------------|----------------------------------------------------------------------------|
| Temperature                 | Operating Temperature : -10° to 55°C<br>Storage Temperature : -20° to 75°C |
| Humidity (non - condensing) | Upto 85% RH                                                                |

## Mechanical Specifications

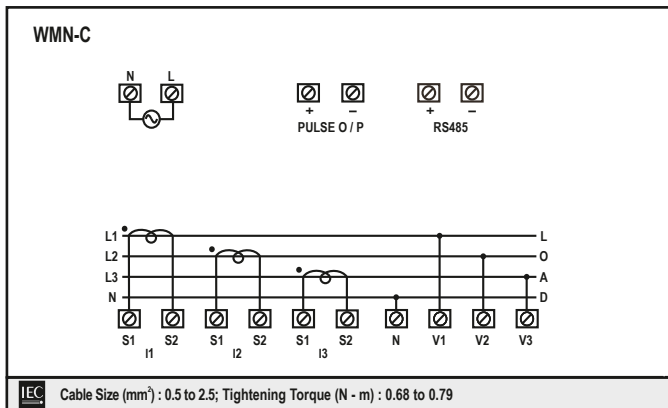
|          |        |
|----------|--------|
| Mounting | Panel  |
| Weight   | 318gms |

# Multifunction Meter (WMN)

## Dimensions



## Terminal Connection



## Compliance

| Applicable EMI / EMC Standards   |                    |                                                                                                                                                                                                                                                                                                     |
|----------------------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product Standard : IEC 61326 - 1 |                    |                                                                                                                                                                                                                                                                                                     |
| Category                         |                    | Standards Compliance                                                                                                                                                                                                                                                                                |
| ESD Immunity                     | IEC 61000 - 4 - 2  | Level IV (Air discharge : 15kV), (Contact Discharge : -8kV)                                                                                                                                                                                                                                         |
| Surge Immunity                   | IEC 61000 - 4 - 5  | + / - 2kV common mode, (Line to Ground)<br>+ / - 1kV differential mode, (Line to Line)                                                                                                                                                                                                              |
| Radiated Susceptibility          | IEC 61000 - 4 - 3  | Level III, 80 to 1000MHz (10V / m)<br>Level II, 1.4GHz to 2GHz (3V / m)<br>Level I, 2GHz to 2.7GHz (1V / m)                                                                                                                                                                                         |
| Conducted Susceptibility         | IEC 61000 - 4 - 6  | Level II (3V / m)                                                                                                                                                                                                                                                                                   |
| Voltage Dips and Interruptions   | IEC 61000 - 4 - 11 | <b>Dips</b> : 0% residual voltage / 1 cycle (Criteria B), 40% residual voltage / 10 cycles 50Hz / 12 cycles 60Hz (Criteria C)<br>70% residual voltage / 25 cycles 50Hz / 30 cycles 60Hz (Criteria C)<br><b>Interruptions</b> : 0% residual voltage / 250 cycles 50Hz / 300 cycles 60Hz (Criteria C) |
| Conducted Emission               | CISPR - 11         |                                                                                                                                                                                                                                                                                                     |
| Radiated Emission                | CISPR - 11         |                                                                                                                                                                                                                                                                                                     |
| Electrical Fast Transient        | IEC 61000 - 4 - 4  | Level III (2kV)                                                                                                                                                                                                                                                                                     |

## Ordering Information

| Product Code | Ref. No | Supply Voltage Output         |                      |                      | Certification |
|--------------|---------|-------------------------------|----------------------|----------------------|---------------|
|              |         | 100 to 240V AC (-15% to +12%) | Pulse Output (RS485) | Comm. Output (RS485) |               |
| WMN-C-CU-G   | W604113 | Yes                           | Yes                  | Yes                  |               |
| WMN-C-CE     | W604114 | Yes                           | Yes                  | Yes                  |               |