

## MASIBUS Energy Meter 2110

### Single Phase



### Description

MASIBUS Model 2110 single phase Energy Meter is a solid state design, which is a complete LT/HT line measurement solution for the monitoring of single phase AC supply including all types of energies. The 2110 Power Meter is based on ASIC and Micro controller, with a high degree of programmability.

The meter meets the accuracy requirements of IS 13779/IEC 61036, and has been certified by the ERDA. This model is available for class 1. The meter can be programmed to operate as an intelligent electronic device (IED) for measurement and

storage device with serial communication making it an ideal data source for EMS, SCADA, PLCs and BMS system.

The meter is supplied pre-programmed for operation and ready for use. Model 2110 power meter stores all its energy data and programming parameter into non-volatile memory using EEPROM. This power meter measures electrical parameters of 1 phase AC line and displays it, which is selectable from front keys.

Model 2110 has auto scaling facility while measuring energy from Kilo to Mega to Giga. Instrument can be self or auxiliary powered with very low burden. Calibration can be done using front keys or through PC software.

Model 2110 has digital input and output facility. Programmable pulse output can be used for KWH (import-export), KVARH (lag-lead) and KVAH. Programmable pulse input can be used to totalize 3<sup>rd</sup> party energy device.

The CT & PT ratio (primary) can be programmed at site using front membrane key. Model 2110 is supplied in panel mount.

### Features

- Accuracy class 1.0 as per IS13779/IEC 61036.
- True RMS sensing on both channels.
- Self/Aux powered
- 2 X 16 back-lit LCD display
- 14 Parameters of 1Ø AC Line using 14 display screens
- AUTO-SCALING from Kilo to Mega to Giga watt
- Programmable pulse input & output
- Calibration using front keys/ PC
- Isolated RS 485 (MODBUS RTU protocol)

# MASIBUS Energy Meter 2110 Single Phase

## Technical Specification

### Input

#### Nominal Voltage Input

Direct connection voltage	Between 57.8V and 275V
Standard Voltage offered	240V
Accuracy Range	50-115% of nominal voltage
Burden	< 2.5VA per phase
Overload	1.2x nominal (continuous)
PT Ratio	1 to 9999.999 programmable (primary)
Wire gauge	12 AWG

#### Nominal Input Current

Nominal Current	1 Amp or 5 Amp (Factory Settable)
Accuracy Range	5-120% nominal
Burden	< 0.5VA per phase
Overload	20 Amps Max (continuous)
CT Ratio	1 to 9999.999 programmable (primary)
Wire gauge	12 AWG

#### Starting Current

0.4% of nominal current (Class 1.0)

#### Frequency

50Hz/60Hz range  $\pm$  5.0Hz

#### Accuracy (Class 1)

[Given Accuracy is for PF: 0.5 Lag - 1.0 - 0.8 Lead]

Volt	1% rdg $\pm$ 1 digit
Current	1% rdg $\pm$ 2 digit
Frequency	0.1Hz $\pm$ 1 digit
Power Factor	1% rdg $\pm$ 2 digits (0.5 Lag – 1.0 – 0.8 Lead)
Active Power	1% rdg $\pm$ 2 digits
Reactive Power	2% rdg $\pm$ 2 digits
Apparent Power	1% rdg $\pm$ 2 digits
Active Energy	Class 1.0 (IS 13779/IEC 1036)
Reactive Energy	Class 2.0 (IEC 1268)
Apparent Energy	Class 1.0

### System

Single Phase

### Output Relay

Type	Watt/VAR/VA – SPNO
Rating	250V, 2A (AC) $\pm$ 30V, 2A (DC)

### Pulse Output

Type	Wh/VARh/Vah – SPNO
Rating	200V, 100mA, Resistive (AC) $\pm$ 200V, 100mA, Resistive (DC)
Pulse Rate	1 to 9999 pulse per selected type
Pulse duration	80mSec $\pm$ 10%

### Burden

Less than 5VA

### Communication Output

Serial Port	RS485, Multidrop
Baud Rate	Selectable: 4800/9600/19200
Start Bit	1
Stop Bit	1
Protocol	MODBUS-RTU
Isolation	2KV

### Environmental

Operating Temperature	0 to 55 °C
Storage Temperature	-10 to 70 °C
Temperature Coeff	IS-13779
Humidity	30 to 95% RH non-condensing
Warm up time	5 min

### Physical

Dimensions	96(W) x 96(H) x 74.4(D) mm
Cut out	90 (W) x 90 (H) mm
Mounting	Panel mounting
Weight	300gms approx.
Enclosure Material	ABS

### Miscellaneous

Display	2x16 Backlight LCD module with 5.56mm character height
Update Rate	320ms
Sensing Method	True RMS sensing on both channels (Simultaneous)
Weight	300gms approx.
Enclosure Material	ABS

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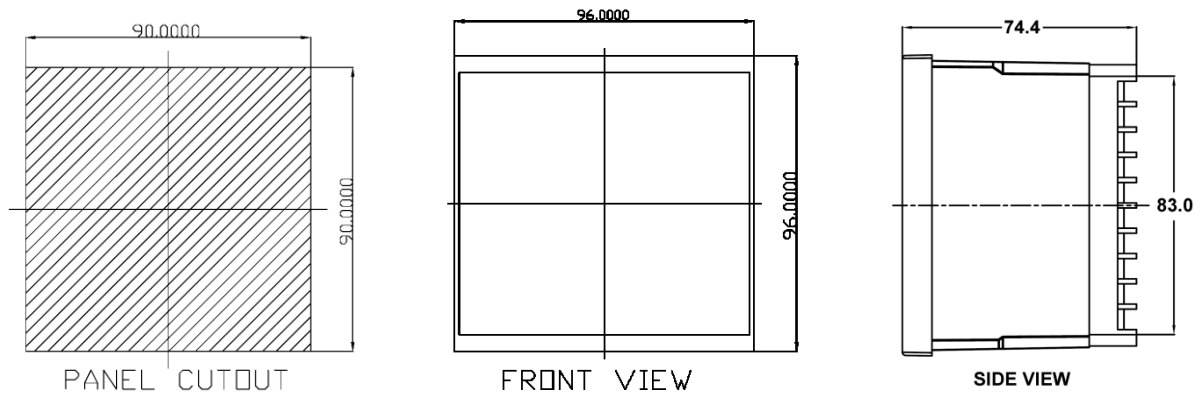


Figure 1: Physical Dimensions (mm)

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