

## MASIBUS Energy Meter 2130

### Three Phase



### Description

MASIBUS Model 2130 Energy Meter is a solid state design, which is a complete LT/HT line measurement solution for the monitoring of three phase AC supply including all types of energies. The 2130 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 2130 power meter stores all its energy data and programming parameter into non-volatile memory using EEPROM. This power meter measures electrical parameters of 3 phase AC line and displays which is selectable from front keys. Battery backup is not required for Power Meter 2130.

Model 2130 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 2130 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 2130 is supplied in panel mount version.

### Features

- Accuracy class 1.0 as per IS13779/IEC 61036.
- True four quadrant measurements.
- Self/Aux powered
- 4 X 16 back-lit LCD display
- 51 Parameters of 3Ø AC Line using 19 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 2130 Three Phase

## Technical Specification

### Input

#### Nominal Voltage Input

Direct connection Between 57.8V and 275V voltage

Standard Voltage 230/400V for 3Ø 4 wire offered

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 4.0x nominal continuous  
20.0x nominal for 1 sec.

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  
3Ø 3 wire unbalanced load  
3Ø 4 wire unbalanced load

### 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%

### 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  
Sampling at 320k sample on all channel measurement reading simultaneously.

Weight 500gms approx.

Enclosure Material ABS

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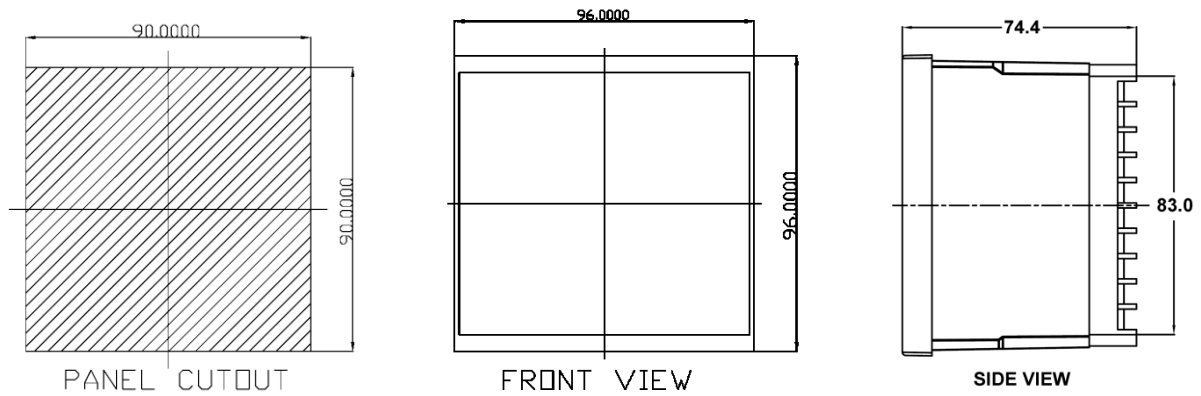


Figure 1: Physical Dimensions (mm)

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