

Energy Meter (Model 2110)



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 3rd 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)

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Energy Meter (Model 2110)

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TECHNICAL SPECIFICATIONS 2110

Nominal Voltage Input

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

Nominal Input Current

	1,5 or 10 Amp.
Accuracy Range	5 – 120% nominal
Burden	< 0.5 VA per phase
Overload	20 Amp. max (continuous)
CT Ratio	1 to 9999.999 programmable (primary)
Starting current	0.4% of nominal Current. (Class 1.0)
Input wire gauge	12 AWG

Frequency 50Hz / 60Hz range \pm 5.0Hz

Measured Parameters

Voltage	single phase
Amps	single phase
Frequency	System Frequency
Power Factor	PF
Active Power	Watts (W, kW & MW)
Reactive Power	VAR (VAR, kVAR, MVAR)
Apparent Power	VA (VA, kVA & MVA)
Active Energy	Total Active Energy for Import & Export.(separate)
Reactive Energy	Total Reactive Energy For lagging & leading. (separate) (VARh, kVARh, MVARh & GVARh)
Apparent Energy	Total Apparent Energy (VAh, kVAh , MVAh & GVAh)
Auxiliary Power	No External power is required. (Draws power from the voltage signal inputs)
System	Single Phase

Accuracy

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

TECHNICAL SPECIFICATIONS 2110

Output Relay

	W/VAR/VA - SPNO
AC rating	250 V, 2A (AC)
DC rating	\pm 30 V, 2A (DC)
Pulse O/p	
AC rating	175V,170mA Resistive
DC rating	\pm 250V, 70 mA Resistive
Pulse Rate	1 to 9999 pulses per selected type
Pulse duration	80 mS \pm 10%

Communication Output

Serial port.	RS485 Multidrop
Baud rate	Selectable. 4800/9600/19200
Start bit	1
Stop bit	1
Protocol	MODBUS - RTU
Isolation	2 KV

Environmental

Working temp.	0 to 55 °C.
Storage temp.	-10 to 70 °C.
Temperature Coeff.	IS-13779
Relative humidity	30 - 95% RH-non-condensive
Warm up time	5 min

Enclosure

Mounting	Panel mounting
Enclosure	96 x 96 x 74.4 mm
Material	ABS
Terminals	Barrier(Feed through) type Screw Terminals
Accessory	2 Panel mount clamps
Weight	300 gms

Display

	2x16 Backlite LCD module with 5.56 mm character height
Burden	<5 VA
Sensing Method	True RMS sensing on both channels

Update Rate 320ms

ORDERING CODE

Model 2110		Auxiliary Output		
CT Ratio				
X	X	X	X	X
1	1A	Pulse	Relay	RS 485
2	5A	N	N	N
3	10A	N	N	Y
		N	Y	N
		N	Y	Y
		Y	N	N
		Y	N	Y
		Y	Y	N
		Y	Y	Y

X - Specify from table

All specifications are subject to change without notice due technology reasons.
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