Energy Meter (Model 2130)

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 3rd 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 (class 0.5 option)*
- *True four quadrant measurement*
- *Self/Aux powered*
- *Four row 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)*

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Energy Meter (Model 2130)

TECHNICAL SPECIFICATIONS	2130
Nominal Voltage Input	
Direct connection voltage	Between 57.8V and 550V
Standard Voltage offered	63.5/110V,69.3/120V,120/208V,220/380V, 230/400V,240/415V,275/476V for 3ph4w
	110V,120V,380V,400V, 415V,440V,476V for 3ph 3w
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 or 5 Amp.
Accuracy Range	5 – 120% nominal
Burden	< 0.5 VA per phase
Overload	4.0x nominal continuous
	20.0x nominal for 1 sec.
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 ± 5.0Hz
Measured Parameters	
Voltage	L1-L2,L2-L3,L1-L3 & average (3 ph 3 w) & (3 ph 4 w)
	L1-N,L2-N,L3-N & average (1ph & 3 ph 4 w)
Amps	L1, L2, L 3 & Average. (3 ph 3 w) & (3 ph 4 w) & Neutral Current. (3 ph 4 w)
Frequency	System Frequency
Power Factor	Per Phase P.F & Avg P.F
Active Power	Per Phase Watts & Total Watts (W, kW & MW)
Reactive Power	Per Phase VAR & Total VAR (VAR, kVAR, MVAR)
Apparent Power	Per Phase VA & Total VA (VA, kVA & MVA)
Active Energy	Per Phase & Total Active Energy for Import & Export.(separate) (Wh, kWh , MWh & GWh)
Reactive Energy	Per Phase & Total Reactive Energy
	For lagging & leading. (separate)
	(VARh, kVARh, MVARh & GVARh)
Apparent Energy	Per Phase & Total Apparent Energy
	(VAh, kVAh , MVAh & GVAh)
Auxiliary Power	No External power is required. (Draws power from the voltage signal inputs)
System	Single Phase
	3 phase 3 wire unbalanced load
	3 phase 4 wire unbalanced load
Accuracy	
Volt	1% rdg ± 1 dgts.
Current	1% rdg ± 2 dgts.
Frequency	0.1Hz ± 1 dgts.
Power Factor	1% rdg ± 2 dgts.(For 0.5 Lag - 1.0 - 0.8 Lead)
Active Power	1% rdg ± 2 dgts.
Reactive Power	2% rdg ± 2 dgts.
Apparent Power	1% rdg ± 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	2130
Output Relay	Watt/VAR/VA-SPNO
AC rating	250V, 2A
DC rating	± 30V, 2A
Pulse output	
AC rating	200V, 100mA, Resistive
DC rating	± 200V, 100mA,Resistive
Pulse Rate	Programmable from 1 to 9999 pulse per KWH[I]/KWH[E]/KVARLH/ KVARCH/ KVAH of total
Pulse duration	80 mS ± 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	
Working temp.	0 to 55 °C.
Storage temp.	-10 to 70 °C.
Temperature Coeff.	IS-13779
Relative humidity	30 - 95% non-condensive
Warm up time	5 min
Enclosure	
Mounting	Panel/ DIN rail (DIN rail version is without display)
Enclosure	96 x 96 x 74.4 mm
Material	ABS
Terminals	Barrier(Feed through) type Screw Terminals
Accessory	2 Panel mount clamps
Weight	500 gms
Isolation	All Inputs and Outputs are galvanically isolated to 2000 Volts AC.
Burden	5 VA
Sensing Method	True RMS
	Sampling at 320k sample per second on all channel measurement reading simultaneously.
Update Rate	320ms

ORDERING CODE

Model 2130

CT Ratio		PT Ratio		Auxiliary Output		
X		X		X	X	X
1	1A	1	63.5/110V - 3Ø 4W	Pulse	Relay	RS 485
2	5A	2	69.3/120V - 3Ø 4W	N	N	N
		3	120/208V - 3Ø 4W	N	N	Y
		4	220/380V - 3Ø 4W	N	Y	N
		5	230/400V - 3Ø 4W	N	Y	Y
		6	240/415V - 3Ø 4W	Y	N	N
		7	275/476V - 3Ø 4W	Y	N	Y
		A	110V - 3Ø 3W	Y	Y	N
		B	120V - 3Ø 3W	Y	Y	Y
		C	380V - 3Ø 3W			
		D	400V - 3Ø 3W			
		E	415V - 3Ø 3W			
		F	440V - 3Ø 3W			
		G	476V - 3Ø 3W			

X - Specify from table

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