



# PM2140

## Multifunction Meter

### Metering, Protection, Retransmission



Aux. Supply



True RMS



Minimum  
Maximum



Auto Scroll/  
Favourite Page



Auto Scaling



RELAY /  
ANALOG  
Output



Masibus PM2140 is an easy-to-use, low cost electrical panel meter that offers all the basic measurement capabilities required for monitoring an electrical installation.

PM2140 has 3 Line 4 digit bright 0.4" LED display for superior readability in poor lighting conditions. Phase wise parameters display has been provided along with various LED indications.

PM2140 is available in flush panel mount enclosure having front panel keys for easy set up. PM 2140 has Class 1.0 accuracy as per IS 13779/IEC 62053-21 for Energy and better than 0.5% accuracy for basic instantaneous parameters.

The CT/PT ratio and installation type is site selectable, making the meter possible to be used in various types of three phase installations.

More than a basic metering, it provides RS485 port with Modbus-RTU protocol as a standard feature & Relay/ Analog output as optional features.

PM2140 provides all the basic electrical parameter measurement along with Minimum, Maximum logging, Isolated Relay Output (with High or Low Side) or Analog Output like 4-20mA or 0-10V DC option.

PM2140 provides energy measurement along with Power Interruption Count, ON hour & RUN (Load) Hour, thus helping to measure and control energy cost.

Meter stores energy and programmed parameters into its non-volatile permanent memory.

### Features

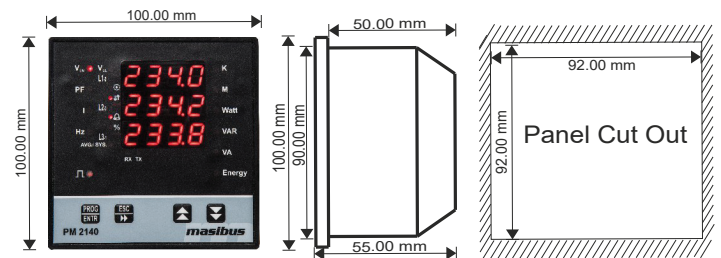
- Energy accuracy class 1.0 as per IS 13779/ IEC 62053-21
- Better than 0.5% accuracy for instantaneous parameters
- Compact flush panel mounting.
- Field programmable CT/PT ratio.
- True RMS measurement.
- Ultra bright 3 line 4 digit LED Display 0.4" for PM2140 with auto scaling capability.
- Universal power supply.
- Optional Relay / Analog output.
- Isolated RS485 (Modbus-RTU protocol)
- 4 keys for configuration.
- Password protection for set parameters.
- Permanent memory based energy storing along with other parameters like ON Hour, LOAD HOUR and Power Interruption Count.

### Applications

- Electrical panels
- Energy Management System(EMS) & Energy audit
- Distribution systems
- Process monitoring and interface with PLC / SCADA / RTU
- HV & LV switchgear panels
- Control & Relay Panels
- Motor control center panels
- Power control center panels
- Process control
- Original Equipment Manufacturers (OEMs)
- HVAC & Building management system
- Remote monitoring of electrical panels

# TECHNICAL SPECIFICATIONS

Meter Type	Output
3Ph4W/ 3Ph3W (Site selectable) / 1Ph2W	<b>Communication Output RS485</b>
<b>Input</b>	Interface RS485
<b>Voltage</b>	Parity None, Odd, Even (Selectable)
Direct Voltage 20V to 350V (L-N) or 34V to 620V (L-L) @ 240V Nominal Voltage	Baud Rate 9600, 19200, 38400 (Selectable)
PT Secondary (Nominal Voltage) 63.5V L-N to 240V L-N	Start Bit 1
Burden 0.5VA per phase	Stop Bit 1, 2 (Selectable)
PT Ratio 1 to 9999 Programmable	Protocol Modbus-RTU
Overload 1.2 x Nominal Voltage (Continuous)	<b>Relay Output (Optional in lieu of Analog o/p)</b>
1.5 x Nominal Voltage (3 sec)	AC Rating 250V, 5A
<b>Current</b>	DC Rating ±30V, 5A
Secondary Current 1 to 5A	Relay Set Point High Side or Low Side Option
Direct Current 0.02A to 6A	Relay O/P Parameters [Field Selectable] Phase Volt / Avg. Volt / Phase Current / Avg. Current / Sys. Freq. / Phase Watt / Sys. Watt / Phase VAR / Sys. VAR / Phase VA / Sys. VA / Phase PF / Sys. PF
Burden 0.25VA per phase	Relay Contact Type SPNO [Factory Default] SPNC [Contact Factory Before Ordering]
CT Ratio 1 to 9999 Programmable	<b>Analog Output (Optional in lieu of Relay o/p)</b>
Overload For 5A CT: 8A (Continuous) For 1A CT: 2A (Continuous) Up to 50A (3sec)	Output Type Current O/P: 4-20 mA DC Voltage O/P: 0-10 V DC
Starting Current 10mA	Response Time < 1 Sec
Frequency 45 to 65 Hz	Output Impedance < 550 Ohms for 4-20 mA DC o/p > 2K for 0-10 V DC o/p
<b>Display &amp; Keys</b>	Analog O/P Parameters [Field Selectable] Phase Volt / Avg. Volt / Phase Current / Avg. Current / Sys. Freq. / Phase Watt / Sys. Watt / Phase VAR / Sys. VAR / Phase VA / Sys. VA / Phase PF / Sys. PF
Display 3 line 4 digit 0.4" [10 mm], 7-segment LED	<b>Power Supply</b>
Various Instantaneous parameters with Energy Kilo & Mega Indication	Power Supply 85-265V AC, 50/60Hz or 100-300V DC
Status LED Indication Alarm and RS485 communication	Burden <3VA
Configuration and Manual Scroll	
Energy pulse	
Keys PROG/Enter, Esc/Shift, UP, Down	
<b>Calculated Parameters</b>	<b>Isolation (Withstanding voltage)</b>
<b>Over Display &amp; Modbus</b>	Between primary terminals* and secondary terminals**: At least 2000 V AC for 1 minute
Total Energy Active Energy	Between primary terminals*: At least 2000 V AC for 1 minute
Reactive Energy	Between secondary terminals**: At least 2000 V AC for 1 minute
Apparent Energy	* Primary terminals indicate Aux Supply, voltage i/p, current i/p
Voltage L1-L2, L2-L3, L1-L3 and Average (3Ph3W & 3Ph4W)	** Secondary terminals indicate Communication o/p and Relay/Analog o/p
L1-N, L2-N, L3-N & average (1Ph & 3Ph4W)	<b>Insulation resistance:</b> 200 MΩ or more at 500 V DC between terminals
Current All phase currents & their average	
PF Phase wise and System PF, Phase angle	<b>Physical</b>
Frequency System Frequency	Mounting Type Panel mount
Power (Phase wise & Total) Active Power	Size (in mm) 100 (H) x 100 (W) x 55 (D)
Reactive Power	Front Bezel (in mm) 100 (H) x 100 (W)
Apparent Power	Panel Cutout (in mm) 92 (H) x 92 (W)
	Depth Behind Panel 50 mm
	Material ABS
	Accessory 2 Panel mount clamps
	Weight 0.3 Kg
	Enclosure Protection IP50 front fascia; Overall IP20
	Terminal & Cable Size Barrier Type terminal / Cable Size [3 mm <sup>2</sup> ]
<b>Special Features</b>	<b>Environmental</b>
ON Hour up to 65000 hours recording	Operating Temperature 0 to 55 °C
Load Hour up to 65000 hours recording	Storage Temperature -10 to 70°C
PINTR Power Interruption count up to 65000 PINTR counts	Relative Humidity 30 to 95% RH non-condensing
% Unbalance Voltage Unbalance % & Current Unbalance %	Warm Up Time 5 minutes
<b>Accuracy</b>	
Voltage ±0.5% of reading	
Current ±0.5% of reading	
Frequency ±0.5% of reading	
Power Factor ±0.5% of FS	
Active Power* (≥0.02 of Ib) ±1.0% of reading ± 0.01% of FS	
Reactive Power* (≥0.02 of Ib) ±2.0% of reading ± 0.01% of FS	
Apparent Power* (≥0.02 of Ib) ±2.0% of reading ± 0.02% of FS	
Active Energy* Class 1.0 as per IS 13779/ IEC 62053-21	
Reactive Energy* Class 2.0 as per IS 13779	
Apparent Energy* Class 2.0	
(*PF 0.5 Lag-1.0 - 0.8 Lead Applicable for Power & Energy Parameter)	



## Ordering code

Model	Phase	Accuracy	Communication	Output	
PM2140	X	X	X	X	
	1	1- Phase	S	Class 1.0	
	3	3- Phase	1	RS485 Modbus	
				N	None
				2	Relay Output
				3	4-20 mA Analog o/p
				4	0-10 V DC Analog o/p

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All specifications are subject to change without notice due to continuous improvements.  
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