



## 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.

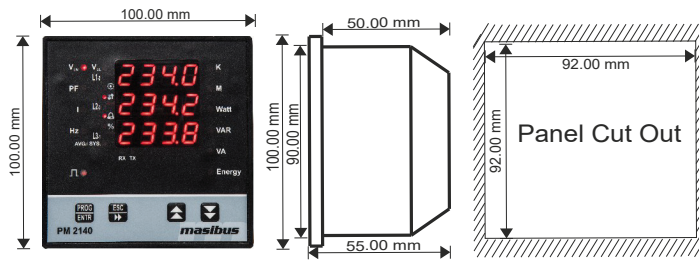
### Features

- 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		Communication Output RS485	
Input		Interface	RS485
Voltage		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 Configurable for 3Ph3W or 3Ph4W system	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) 1.5 x Nominal Voltage (3 sec)	Relay Output (Optional in lieu of Analog o/p)	
Current		AC Rating	250V, 5A
Secondary Current	1 to 5A	DC Rating	±30V, 5A
Direct Current	0.02A to 6A	Relay Set Point	High Side or Low Side Option
Burden	0.25VA per phase	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
CT Ratio	1 to 9999 Programmable	Relay Contact Type	SPNO [Factory Default] SPNC [Contact Factory Before Ordering]
Overload	For 5A CT: 8A (Continuous) For 1A CT: 2A (Continuous) Up to 50A (3sec)	Analog Output (Optional in lieu of Relay o/p)	
Starting Current	10mA	Output Type [Factory Set]	Current O/P: 4-20 mA DC Voltage O/P: 0-10 V DC
Frequency	45 to 65 Hz	Response Time	< 1 Sec < 550 Ohms for 4-20 mA DC o/p > 2K for 0-10 V DC o/p
Display & Keys		Output Impedance	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 Various Instantaneous parameters with Energy Kilo & Mega Indication	Power Supply	
Status LED Indication	Alarm and RS485 communication Configuration and Manual Scroll Energy pulse	Power Supply	85-265V AC,50/60Hz or 100-300V DC
Keys	PROG/Enter, Esc/Shift, UP, Down	Burden	<3VA
Calculated Parameters		Isolation (Withstanding voltage)	
Over Display & Modbus		Between primary terminals* and secondary terminals**: At least 2000 V AC for 1 minute Between primary terminals*: At least 2000 V AC for 1 minute Between secondary terminals**: At least 2000 V AC for 1 minute * Primary terminals indicate Aux Supply, voltage i/p, current i/p ** Secondary terminals indicate Communication o/p and Relay/Analog o/p Insulation resistance: 200 MΩ or more at 500 V DC between terminals	
Total Energy	Active Energy Reactive Energy Apparent Energy	Physical	
Voltage	L1-L2, L2-L3, L1-L3 and Average (3Ph3W & 3Ph4W) L1-N, L2-N, L3-N & average (1Ph & 3Ph4W)	Mounting Type	Panel mount
Current	All phase currents & their average	Size (in mm)	100 (H) x 100 (W) x 55 (D)
PF	Phase wise and System PF, Phase angle	Front Bezel (in mm)	100 (H) x 100 (W)
Frequency	System Frequency	Panel Cutout (in mm)	92 (H) x 92 (W)
Power (Phase wise & Total)	Active Power Reactive Power Apparent Power	Depth Behind Panel	50 mm
Special Features		Material	ABS
ON Hour	up to 65000 hours recording	Accessory	2 Panel mount clamps
Load Hour		Weight	0.3 Kg
PINTR Power		Enclosure Protection	IP50 front fascia; Overall IP20
Interruption count	up to 65000 PINTR counts	Terminal & Cable Size	Barrier Type terminal / Cable Size [3 mm <sup>2</sup> ]
% Unbalance	Voltage Unbalance % & Current Unbalance %	Environmental	
Accuracy		Operating Temperature	0 to 55 °C
Voltage	±0.5% of reading	Storage Temperature	-10 to 70°C
Current	±0.5% of reading	Relative Humidity	30 to 95% RH non-condensing
Frequency	±0.5% of reading	Warm Up Time	5 minutes
Power Factor	±0.5% of FS		
Active Power*	±1.0% of reading ± 0.01% of FS		
(≥0.02 of Ib)			
Reactive Power*	±2.0% of reading ± 0.01% of FS		
(≥0.02 of Ib)			
Apparent Power*	±2.0% of reading ± 0.02% of FS		
(≥0.02 of Ib)			
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)			