

EasyLogic power metering

A complete range of meters for essential electrical system measurement

Catalogue



Schneider
 **Electric**

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Panorama of the EasyLogic range

Digital panel meters



Family	DM1000			DM3000		DM6000
Parameters	DM1110	DM1210	DM1310	DM3110	DM3210	DM6000
Amps: 1-ph or per-phase	■			■		■ & 3-ph avg
Volts: 1-ph or per-phase		■			■	■ & 3-ph avg
Frequency			■			■
Power Factor						■ & 3-ph avg
Class of Accuracy*	0.5	0.5	0.2	0.5	0.5	1
RS-485 Modbus RTU						in DM6200
Form Factor in mm	96x96x44	96x96x44	96x96x44	96x96x44	96x96x44	96x96x80
Mounting	Flush/Panel	Flush/Panel	Flush/Panel	Flush/Panel	Flush/Panel	Flush/Panel

Simple energy cost management						
Data aggregation						■
Load profile						
Bill verification						
Cost allocation						

Basic network management						
Panel instrumentation	■	■	■	■	■	■
Power metering						
Basic harmonic monitoring						
Status monitoring						
Threshold alarming						

Monitoring and verification						
Test bench	■	■	■	■	■	■
Genset	■	■	■	■	■	■
PF Improvement panel						■
Labs	■	■	■	■	■	■
OEMs	■	■	■	■	■	■

Panorama of the EasyLogic range

Digital panel meters (contd.)



Family	EM1250	PM1000	PM2000
Parameters	EM1250	PM1000	PM2000
Amps: per phase & 3-ph avg		■	■
Volts: per phase & 3-ph avg		■	■
Frequency		■	■
Power Factor per phase & 3-ph avg	■	■	■
W, Wh	■	■	■
VAR, VARh	■	■	■
VA, VAh	■	■	■
DI/DO			2 (PM2130/PM2230)
Class of Accuracy*	0.5	1	1
RS-485 Modbus RTU	■	in PM1200	■
CT Secondary I nominal	5A (1A: EM1251)	5A or 1A	5A or 1A
Form Factor in mm	96x96x80	96x96x80	96x96x54
Mounting	Flush/Panel	Flush/Panel	Flush/Panel

Simple energy cost management			
Data aggregation	■	■	■
Load profile	■	■	■
Bill verification	■	■	■
Cost allocation	■	■	■

Basic network management			
Panel instrumentation			
Power metering	■	■	■
Basic harmonic monitoring		■	■
Status monitoring			
Threshold alarming			

Monitoring and verification			
Test bench	■	■	■
Genset	■	■	■
PF Improvement panel	■	■	■
Labs	■	■	■
OEMs	■	■	■

* Refer data sheet for operating range

PB113034



DM1000 series digital panel meter

PB113048



DM3000 series digital panel meter front display (above),
and rear (below)

PB113044



Basic VAF panel meters – main features

- 4 digit, 15mm height, 7 segment LED display
- 1-ph & 3-ph Volt or Amps panel meters
- Accuracy of 0.5% on full scale for Volt & Ammeter, 0.2% for Hz meter
- Inbuilt selector switch in 3-ph meter model
- Single key for programming, navigation or as selector switch

Basic VAF panel meters – technical specifications

- Input voltage (50Hz/ 60Hz +/-5%)
- 80 to 480 V AC L-L direct, up to 999kV with PT
- Input current (50Hz/ 60Hz +/-5%)
- 50mA to 6A direct, CT secondary 1A or 5A field settable
- CT primary: 1A to 99kA field settable
- Control power
- 90 to 277V AC (50Hz/ 60Hz +/-5%) or DC
- Form factor
- Flush/panel mount, 96 x 96 x 44mm
- IP Degree of protection
- IP51 front & IP40 rear side
- Auto scaling & direct readings
- Accuracy
- 0.5% of full scale for V & A
- 0.2% of full scale for Hz
- Safety/ EMI-EMC tests
- CE: As per IEC 61010-1 Ed.3
- Emission: CISPR11, Class A
- Fast Transient: IEC 61000-4-4*
- Surge withstand: IEC 61000-4-5*
- ESD: IEC 61000-4-2*
- Isolation: 4kV for 1 minute
- Safety: Self extinguishable V1 plastics, measurement category III, Pollution degree 2
- * as per IEC 61326-1
- Temperature
- Operating: -10 °C to 60 °C (14 °F to 140 °F)
- Storage: -25 °C to 70 °C (-13 °F to 158 °F)
- Weight: 400 gms approx, Unpacked
500 gms approx, Shipping
- Panel cut out: 92 x 92 mm Flush mount
- LED indicators for phase identification in 3-ph meters

Comparisons

Parameter	DM1110	DM1210	DM1310	DM3110	DM3210	Accuracy
1-ph A	■					0.5%
1-ph V		■				0.5%
1-ph Hz			■			0.2%
3-ph A				■		0.5%
3-ph V					■	0.5%
Commercial reference	METSEDM110	METSEDM1210	METSEDM1310	METSEDM3110	METSEDM3210	

DM6000 series

VAF PF Digital panel meters

Functions and characteristics

PB113052



EasyLogic™ DM6000 series power meter.

PB113051



EasyLogic™ DM6000 series power meter - front

PB113050



EasyLogic™ DM6000 series power meter - rear

VAF PF panel meters – main features

- Alpha numeric 8 segment bright LED display
- 3 rows of 4 digits each
- Load analyzer
- Tricolor analogue load bar
- Field settable VT ratio, CT ratio (both primary & secondary)
- Control power of AC & DC voltage
- Password protected
- RPM measurement
- 4 keys + 1 favourite key
- Auto-scale & auto-scroll

VAF PF panel meters – technical characteristics

- Accuracy
- Volts & Amps: 0.5% of reading
- Power Factor: 1.0% of reading
- Voltage inputs (50/60Hz +/- 5%)
- 80 to 480 V AC L-L direct, up to 999kV with PT
- Current inputs (50/60Hz +/- 5%)
- 50mA to 6A with CT input, 10A max continuous, 5mA starting current
- Control power (50/60Hz +/- 5%)
- 44 to 277V AC or DC, burden of 5VA max
- System configurable for 1-ph, 2-ph & 3-ph network (5 types)
- Panel/ Flush mount, 96 x 96 x 80 mm depth
- Safety & Markings
- UL as per UL 508 & CE as per IEC 61010-1 Ed-3
- ANSI self certified
- Ghost-R & C-Tick
- Measurement Category III, Pollution degree 2 & Double insulated
- EMI/EMC
 - CISPR11 Class A
 - Electro Static Discharge: IEC 61000-4-2*
 - Radiated susceptibility: IEC 61000-4-3*
 - Fast Transient Burst: IEC 61000-4-4*
 - Surge withstand: IEC 61000-4-5*
 - Conducted susceptibility: IEC 61000-4-6*
 - Damped oscillatory: IEC 61000-4-12*
 - Voltage dips & Interruption: IEC 61000-4-11*
 - Impulse voltage test: IEC 60060-1
- RoHS complied
- Multi linguistic literature
- EN, FR, ES, PT, DE, TR, RU, ZH
- Modbus RS485
- Preconfigured
- Native device for ION E, or SPM, or PME
- ION set up
- IP degree of protection
- IP51 front & IP40 rear
- Environmental
 - Operating temp: -10 °C to 60 °C
 - Storage temp: -25 °C to 70 °C
 - Humidity 5 % to 95 % non-condensing
- Altitude: 2000m

Comparisons

Parameters / Model	DM6000	DM6200
V AF – per ph & Avg	■	■
PF – per ph & Avg	■	■
% Load, % V & I Unbal, Ph-angle, RPM	■	■
Modbus RS485		■
Commercial reference	METSEDM6000	METSEDM6200

* as per IEC61326-1

EM1000 series

LCD Power & Energy meters

Functions and characteristics

PB113058



EM1250 power meter.

PB113057



EM1000/1200 – front.

PB113056



EM1000/1200 – rear.

LCD power & energy meters – main features

- 2 quadrant Power & Energy, Class 0.5 accuracy
- 1 row back-lit 128 x 32 graphical LCD display
- Resolution of 4 digits for RMS & 10+3 for Energy
- 3 parameters with name & value
- Line indicators
- Pulse LED for calibration or load indicator
- Total & Partial energy display
- Factory set 5A or optional 1A CT sec
- Current & Old registers for Integrated parameters
- Panel/ flush mount, 96*96*80mm depth

LCD power & energy meters – technical specifications

- Accuracy
 - PF, W, VA: 0.5%
 - VAR: 1.0%
- Energy
 - Wh: Class 0.5 as per IEC 62053-22
 - VARh: Class 1.0 as per IEC 62053-23
- Voltage inputs (50/60Hz, +/-5%)
 - 80 to 480 V AC L-L direct, up to 999kV with PT
- Current inputs (50/60Hz +/-5%)
 - EM1250: 250mA to 6A with CT, starting current 5mA, Max 10A continuous
 - EM1251: 150mA to 1.2A with CT, starting current 1mA, Max 2A continuous
- Control power (50/60Hz +/-5%)
 - 44 TO 277V AC or DC, burden of 4VA max
- System configurable for 1-ph, 2-ph & 3-ph network (5 types)
- Safety & Markings
 - UL as per UL 508 & CE as per IEC 61010-1 Ed-3
 - ANSI self certified
 - Measurement Category III, Pollution degree 2 & Double insulated
 - EMI/EMC
 - CISPR22 Class A
 - Electro Static Discharge: IEC 61000-4-2*
 - Radiated susceptibility: IEC 61000-4-3*
 - Fast Transient Burst: IEC 61000-4-4*
 - Surge withstand: IEC 61000-4-5*
 - Conducted susceptibility: IEC 61000-4-6*
 - Voltage dips & Interruption: IEC 61000-4-11*
 - Impulse voltage test: IEC 60060-1
- Tech literature
 - English
- Modbus RS485
- Preconfigured
- ION, SPM/ PME PMS Software
- ION set up
- IP degree of protection
 - IP51 front & IP40 rear
- Environmental
 - Operating temp: -10 °C to 60 °C
 - Storage temp: -25 °C to 70 °C
 - Humidity 5 % to 95 % non-condensing
- Altitude: 2000m

Comparisons

Parameters / Model	EM1250	EM1251
PF– per ph & Avg	■	■
Power – W, VAR, VA – per ph & Total	■	■
Energy – Wh, VARh, VAh (Delivered, Received & Net)	■	■
On & Run Hrs & Int	■	■
Modbus RS485	■	■
Input current	5A	1A
Commercial reference	METCOEM1250	METCOEM1251

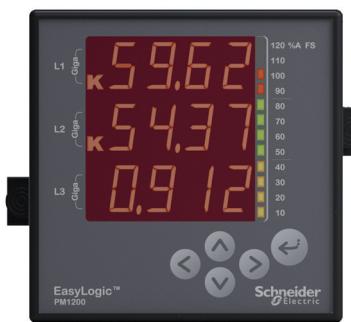
* as per IEC61326-1

PB113062



EasyLogic™ PM1200 power meter.

PB113063



EasyLogic™ PM1200 power meter - front

PB113062



EasyLogic™ PM1200 power meter - rear

Multi-function meters – main features

- Alpha numeric 8 segment bright LED display
- 3 rows of 4 digits each
- Load analyzer
- Tricolor analogue load bar
- 4 quadrant measurement
- Field settable VT ratio & CT ratio (both primary& secondary)
- Control power of AC & DC voltage
- Password protected
- RPM measurement
- Current & Old registers for Integrated parameters
- 4 keys + 1 favourite key
- Auto-scale & auto-scroll
- Display 4 digits for RMS & 8 digits for INTG values
- Accuracy
- Volts & Amps: 0.5% of reading
- Power: 1.0% of reading
- Energy
- Active energy: Class 1 as per IEC 62052-11 and IEC 62053-21
- Reactive energy: Class 2 as per IEC 62053-23
- Voltage inputs (50/60Hz, +/-5%)
- 80 to 480 VAC L-L direct, up to 999kV with PT
- Current inputs (50/60Hz +/-5%)
- 50mA to 6A with CT input, 10A max continuous, 5mA starting current
- Control power (50/60Hz +/-5%)
- 44 to 277V AC or DC, burden of 5 VA max
- System configurable for 1-ph, 2-ph & 3-ph network (5 types)
- Panel/ Flush mount, 96 x 96 x 80 mm depth
- Safety & Markings
- UL as per UL 508 & CE as per IEC 61010-1 Ed-3
- ANSI self certified
- Ghost-R & C-Tick
- Measurement Category III, Pollution degree 2 & Double insulated
- EMI/EMC
 - CISPR11 Class A
 - Electro Static Discharge: IEC 61000-4-2*
 - Radiated susceptibility: IEC 61000-4-3*
 - Fast Transient Burst: IEC 61000-4-4*
 - Surge withstand:IEC 61000-4-5*
 - Conducted susceptibility: IEC 61000-4-6*
 - Damped oscillatory: IEC 61000-4-12*
 - Voltage dips & Interruption: IEC 61000-4-11*
 - Impulse voltage test: IEC 60060-1
- Multi-linguistic literature
- EN, FR, ES, PT, DE, TR, RU, ZH
- Modbus RS485
- Preconfigured
- ION E, SPM or PME, PMS software
- ION set up
- EGX gateway and server
- IP degree of protection
- IP51 front & IP40 rear
- Environmental
 - Operating temp: -10 °C to 60 °C
 - Storage temp: -25 °C to 70 °C
 - Humidity 5 % to 95 % non-condensing
 - Altitude: 2000m

Parameters / Model	PM1000	PM1200
V A F – per phase & 3-ph Avg	■	■
PF– per phase & 3-ph Avg	■	■
% Load, % V & I Unbal, Ph Angle	■	■
Power – W, VAR, VA – per ph & Total	■	■
Energy – Wh, VARh, VAh (Delivered, Received & Net)	■	■
On & Run Hrs & Int	■	■
THD: V&I - per ph	■	■
Demand – W, VA, A	■	■
Modbus RS485		■
Commercial reference	METSEPM1000	METSEPM1200

* as per IEC61326

PM2000 multi-function meters

Functions and characteristics

PB114325



PM2000 series LED display meter

PB11531



PM2000 LCD display

Commercial reference numbers

Ref. number Model

METSEPM2110	PM2110
METSEPM2120	PM2120
METSEPM2130	PM2130
METSEPM2210	PM2210
METSEPM2220	PM2220
METSEPM2230	PM2230
METSEPM2KDGTILO22	PM2KDIDO
METSEPM2KANLGIO22	PM2K2AIAO
METSEPM2KANLGIO11	PM2K1AIAO*

* Future reference.

See your Schneider Electric representative for complete ordering information.

Functions and characteristics

Introducing EasyLogic PM2000 series, next generation power meter which offers all the measurement capabilities required to monitor an electrical installation in a single 96 x 96mm (3.77 x 3.77 in) unit. PM2000 meters are available in LED and LCD display variants.

■ **PM2100 series:** LED display type: Intuitive navigation with self-guided, three buttons, Bright red colour LEDs of 14.2 mm (0.55 in) height. Two columns of LEDs, one on each side of the meter's front panel indicates the parameter name chosen for display

■ **PM2200 series:** LCD display type: Monochrome graphical LCD of 128x128 resolution with viewable area of 67 x 62.5 mm (2.63 in x 2.46 in) lets the users read all three phase measured values simultaneously. The bright anti-glare display features large characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles. Intuitive menus, multi-language text, icons and graphics create a friendly environment to learn about your electrical network.

Applications

Cost management:

- Electrical installation remote monitoring
- Energy accounting and balancing
- Tenant and sub-billing
- Panel instrumentation
- Energy management

Network management:

- Power quality analysis: THD and individual harmonics up to 15th and 31st order for Volts and Amps, per-phase
- Measurement of True PF and Displacement PF
- Recording Min/Max values of instantaneous parameters with date & timestamp
- Optional IO modules comprising either 2 Digital Inputs and 2 Outputs, or 2 Analogue Inputs and 2 Outputs for comprehensive WAGES monitoring
- Calculates % unbalance for voltage & current

Main characteristics:

- Easy to install: Mounts using two clips, no tools are required. Compact meter with 54 mm (2.12 in) depth, connectable up to 480 +/-10% AC Volts L-L without voltage transformers for installations compliant with measurement category III, and double insulated.
- Easy to operate: Test LED at the front panel used for test and calibration of the meter on site or laboratory. Heart-beat LED indicates normal functioning and communication status if connected to RS485 network.
- Product standard compliance
 - Active energy Class 1.0 as per IEC 62053-21
 - Active energy Class 0.5S as per IEC 62053-22 (partial compliance for active energy test clause only)
 - Reactive energy Class 2.0 as per IEC 62053-23
 - Reactive energy Class 1.0 as per IEC 62053-24 (partial compliance for reactive energy test clause only)
- Tested in accordance with IEC 62052-11 standard for
 - 5 A, I-nominal
 - 1 A, I-nominal (field settable).
- Power quality analysis: The PM2000 offers THD measurements and Individual harmonics up to 15th order for voltage and current parameters, per-phase basis in PM2x20 variants, and up to 31st order in PM2x30 types.
- Load management: Simultaneous display of peak, present, predicted & rising demands of all the four demand parameters (W, VA, VAR, Amps) with date and time of occurrence.
- Billing: Tenant billing/utility meter cross check (where local regulations are not applicable).
- Timer: Active load timer, Meter operation timer and Run hours timer. These features help advise maintenance requirements and scheduling.
- Password: Field configurable password for securing set up information and prevent tampering of integrated values.
- Cyber security: Option for disabling RS485 port through front panel keys against unauthorized access. It helps during installation and trouble shooting of communication network.
- LED display: Auto scaling, 9+3 digits for energy, 4 digits for other parameters.
- LCD display: 6 digits with auto scaling for energy and other parameters.
- 12am snap shot: summary page stored in the meter, can be retrieved within 24 hours.
- Rate counters: 2 configurable counters display values in custom specified units based on energy recorded (e.g., kgCO₂ carbon emission or energy cost).
- Energy preset feature: For retrofit application.

PB114317



Rear of PM2000 closed

PB114318



Rear of PM2000 open

PB114321



Rear of PM2000 without I/O module

General

Use on LV and MV systems with onsite programmable PT/CT ratio

Basic metering with THD, Individual Harmonics, RTC and min/max readings

Instantaneous rms values

Current	Average line current of 3-phase, per-phase, and calculated neutral current
Voltage	Average voltage of L-L, L-N parameters, and per-phase
Frequency	Any available line
Real, reactive, and apparent power	Total and per-phase value
Displacement power factor	Average and per-phase signed, four quadrant
True Power Factor	Average and per-phase signed, four quadrant
% Unbalance	Among the phase for Amps, V L-N, V L-L

Energy values stored in non-volatile memory

Four quadrant measurement for Delivered (Forward or Import) and Received (Reverse or Export) energy	Accumulated energy values for Active, Reactive & Apparent Energy parameters, quadrant basis Net & Total (absolute) values
Timer	Accumulated time counters for active load timer, meter operation timer, run hours and power outage counter
Old Registers	Facilitates retrieval of last cleared energy values

Demand values

Current average	Present, Last, Predicted, Peak, and Peak Date Time
Active power	Present, Last, Predicted, Peak, and Peak Date Time
Reactive power	Present, Last, Predicted, Peak, and Peak Date Time
Apparent power	Present, Last, Predicted, Peak, and Peak Date Time
Demand sync methods	Thermal, Timed, Command Sync, and Clocked Sync
Demand calculation mode	Sliding, fixed and rolling block
Demand intervals	Settable from 1 to 60 minutes, in the step of 1 minute

Display

PM2100 series	Bright red colour LED display, 7 segment LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row, Auto range
PM2200 series	Full scope, monochrome graphical LCD of 128x128 resolution with viewable area of 67 x 62.5mm (2.63 in x 2.46 in)
Visualization mode for signs	IEC or IEEE type in LCD display meter

Communication

RS485 serial	Channel connection Industry standard Modbus RTU protocol
Integration with software	SCADA/DCS/PMS/EMS/BAS/BMS software
Native Plug and Play support	Schneider Electric energy management system software - StruxureWare Power Monitoring Expert, StruxureWare PowerSCADA Expert along with ION Setup programming support

Min/Max values

Minimum & Maximum value recording of 3-ph average or total	For 8 parameters, viz., V L-L, V L-N, Amps, PF, Hz, W, VA, VAR with date and time stamp, resettable separately through set up mode
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Diagnostics

Diagnostic page	Indicates LED/LCD status, sl number, diag pages, OS & RS version
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Lock/ Un-Lock

Page Lock & Unlock (PM2100 series)	Unique feature to ensures that commonly referred page is restored in 4 minutes of inactive time
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Rate 1 counter ⁺¹

kgCO ₂ emission (example)	Rate counter can be configured to display the CO ₂ emission in kgCO ₂ format based on the kWh measured either in delivered or received direction.
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Rate 2 counter ⁺¹

Tariff counter (example)	Rate counter can also be configured to calculate the electricity cost based on the energy consumption in customized currency format.
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12am snap shot

12am snap shot ⁺¹	Snap shot of Avg Voltage, Avg Current, Total Active Power & Energy delivered as measured by the meter at 12am. Snap shot available until 12am next day
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⁺¹ In PM2200 (LCD) series meters

PM2000 multi-function meters

Functions and characteristics

PB114320



Rear of PM2000 with I/O module

PB114349



Rear of PM2000 with I/O module disconnected

Electrical characteristics	
Type of measurement	True RMS 64 samples per cycle
Measurement accuracy	
Current, average & per-phase	+/-0.5%
Voltage average & per-phase	+/-0.5%
Frequency	+/-0.05%
Power Factor, average & per-phase	+/- 0.01
Power (W-Active, VA-Apparent)	+/- 0.5%
Power (VAR-Reactive)	+/- 1.0%
Real/ Active Energy (Wh)	Class 0.5S as per IEC 62053-22 and Class 1.0 as per IEC 62053-21 for both CT nominal of 5 A and 1 A ⁺²
Reactive Energy	Class 1.0 as per IEC 62053-24
Apparent Energy	+/-0.5%
THD% and Individual Harmonics- V & A	+/- 5% FS for THD & Individual harmonics
Input-voltage	
VT primary	999 kV L-L max, secondary voltage depends on VT ratio
U nominal	277 V L-N/480V L-L
Measured V with full range	20-277 VLN/35 - 480 V L-L, cat III 20-347 VLN/35 - 600 V L-L, cat II
Permanent overload	750 V AC L-L
Impedance	=> 5 MΩ
Frequency nominal	50/60 Hz
VA burden	< 0.2 VA at 240 V AC L-N
Input-current	
CT ratings	Primary adjustable 1 A to 32768 A Secondary 1 A or 5 A l-nominal
Measured Amps with over range & Crest Factor	5 mA to 6 A
Over current withstand	Continuous 12A, 10s/hr 50A, 1s/hr 500A
Impedance	< 0.3 m
Frequency nominal	50/60 Hz
VA Burden	< 0.1 VA at 6A
AC control power	
Operating range	44- 277 V AC ±10%
Burden	<8 VA/3.3W at 240V AC L-N
Frequency	45 to 65 Hz
Ride-through time	100 ms typical at 120 V AC and maximum burden 400 ms typical at 230 V AC and maximum burden
DC control power	
Operating range	44-277V DC ±10%
Burden	<2W at 240 V DC
Ride-through time	50 ms typical at 125 V DC and maximum burden
Real time clock	
Ride-through time	3 years
Displays update	
Instantaneous	1s
Demand	15s
Harmonics	5s
Wiring configuration	
User programmable	1ph, 2w, LN 1ph, 2w, LL 1ph, 3w, LL with N (2phase) 3ph, 3w, Delta, Ungrounded 3ph, 3w, Delta, Corner Grounded ⁺³ 3ph, 3w, Wye, Ungrounded ⁺³ 3ph, 3w, Wye Grounded ⁺³ 3ph, 3w, Wye, Resistance Grounded ⁺³ 3ph, 4w, Open Delta, Center-Tapped ⁺³ 3ph, 4w, Delta, Center-Tapped ⁺³ 3ph, 4w, Wye, Ungrounded ⁺³ 3ph, 4w, Wye Grounded 3ph, 4w, Wye, Resistance Grounded ⁺³

⁺¹In PM2000 (LCD) series meters⁺²For 1 A CT nominal, additional error of ±1% from 50 mA to 150 mA, ±2% for current > 10 mA to < 50 mA. Partial standard compliance for Class 0.5S meter type (energy test clause only)⁺³Through communication in PM2100 series meters

Functions and characteristics	
Mechanical characteristics	
Weight	~ 300 gm (10.58 oz)
IP degree of protection	IP51 front side, IP30 meter body as per IEC 60529
Material	Polycarbonate meets UL 94V-0 flammability rating
Dimensions W x H x D	96 x 96 x 54mm (3.78 x 3.78 x 2.13 in) maximum (depth of the meter from housing mounting flange) and 13 mm (0.51 in) (protrusion of meter from housing flange). Meter depth with IO module is 74 mm
Mounting position	Vertical
Panel thickness	5 mm (0.196 in) maximum
Environmental characteristics	
Operating temperature	Meter -10 to +60 °C (+14 to +140 °F)
Storage temperature	Meter -25 to +70 °C (-13 to +158 °F)
Humidity rating	5 to 95% RH at 50 °C (122 °F) (non-condensing)
Pollution degree	2
Altitude	2000 m (6561 ft) Category III
Product life	>7 years
Electromagnetic compatibility⁴	
Electrostatic discharge	IEC 61000-4-2
Immunity to radiated field	IEC 61000-4-3
Immunity to fast transients	IEC 61000-4-4
Immunity to impulse waves	IEC 61000-4-5
Conducted immunity	IEC 61000-4-6
Immunity to magnetic fields	IEC 61000-4-8
Immunity to voltage dips	IEC 61000-4-11
Emissions	Emissions FCC Part 15 Class A
Safety	
Europe	CE, as per IEC 61010-1 Ed-3
US and Canada	cULus as per UL61010-1 and CAN/CSA-C22.2 No. 61010-1, for 600V AC
Measurement category (Voltage and Current inputs)	CAT III up to 480 V L-L CAT II up to 600 V L-L
Oversupply Category (Control power)	CAT III up to 300 V L-N
Dielectric	As per IEC/UL 61010-1 Ed-3
Protective Class	II, Double insulated for user accessible parts
Green premium	EOL, REACH, PEP, RoHS complied
Other certification	RCM (Australia), EAC (Russia)
Communication	
RS 485 port	Modbus RTU: 2-Wires, with ground & shield, 4800, 9600, 19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity is Odd or Even, 2 stop bits if None DLF3000: Firmware update through communication port
Pulse Output – POP	Max 40 V DC, 20 mA 20 ms ON time Configurable pulse weight from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)
Isolation	2.5 kV RMS, double insulated
Protection features	Password protected for set-up & clearing energy and Min/Max data
Display language	English, Spanish, French, Chinese, German, Portuguese, Russian
Technical publication	Printed installation guide (IG) with the meter in multi language (EN,ES,FR,DE,PT,RU,TR,ZH)
Human machine interface	
Display type	LED display: 7 segment LED, ~ 14.2 mm (0.55 in) height, 3 rows with 4 digits per row 2 columns of LEDs, one on each side of the LED panel to indicate the parameters under measurement 9+3 digit format for energy and 4 digit for other parameters LCD display: Monochrome graphical LCD of 128x128mm (5.04x5.04 in) resolution with viewable area of 67x62.5mm (2.64x2.46 in)
Keypad	PM2100 series: 3 buttons for navigation & combination of 2 buttons for performing set-up, Lock/unlocking of page, Diagnostic page operation PM2200 series: 4 buttons for intuitive navigation of HMI/ UI pages
CAL LED Indicator	Red colour, meter constant is configurable from 1 to 9999000 pulses/k_h (kWh, kVAh, or kVARh)
Comm. activity	Green LED (for indicating RS485 interface or heart beat pulse)

⁴ as per IEC 61326-1 standard (Emission)

PB115529



Rear of PM2200 with I/O module

DUDISO



Digital I/O module

PB115540



Analogue I/O module

Electrical characteristics of IO modules**Status Inputs (Digital Inputs)**

Voltage ratings	18.5 to 36 V DC, OFF 0 to 4 V DC
Input resistance	110 kΩ
Max Frequency	2 Hz (T ON min = T OFF min = 250 ms)
Detect Time	20 ms
Update time	1 s
Isolation	2.5 kV RMS
Application	Breaker status inputs or pulse inputs from
Display support	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only. Other measuring devices and display through totalizing counter.
Set up and configuration	Through set-up software

Digital Outputs

Voltage ratings	40 V DC max, 20mA max
On Resistance	50 Ω max
Meter constant	Configurable from 1 to 9999000 k_h (kWh, kVARh, kVAh)
Pulse width	20 ms
Pulse frequency	25 Hz
Leakage current	1 micro Amps
Isolation	2.5 kV RMS
Alarm conditions	14 set point driven alarms, 4 Unary alarms, 2 Digital inputs status
Application	Pulse output: configurable for energies upper / lower limit: configurable for 14 parameters
Display support	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only
Set up and Configuration	Through set-up software

Analogue inputs

Measurement scale	4-20 mA
Input impedance	=<300 Ω
Max source impedance	>500 Ω
Update rate	1 s
Accuracy	1% of Full scale at ambient temp 0.1%/K for de-rating
Voltage ratings	Typical 12 V (max 30 V)
Power Consumption	<1.5 Watts
Isolation	2.5 kV RMS
Application	Configurable for inputs from flow rates, RPM, fluid level, oil pressure, temperature measurement devices or transducers with option of 81 different Uni code selection. Configuration via set up software
Display	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only
Set up and configuration	Through set up software

Analogue outputs

Scale	4-20 mA
Load impedance	=<600 Ω
Update rate	1s
Accuracy	1% of Full scale at ambient temp
Voltage ratings	Typical 12 V (max 30 V)
Power Consumption	<1.5 Watts
Isolation	2.5 kV RMS
Application	Analogue outputs can be associated to 40 different instantaneous parameters
Display	Available on PM2230 (LCD type). In PM2130 meter, data is available through communication only
Set-up & configuration	Through set-up software

Mechanical characteristics

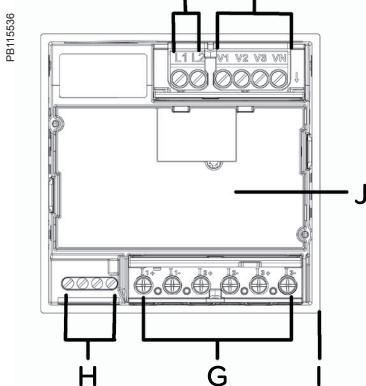
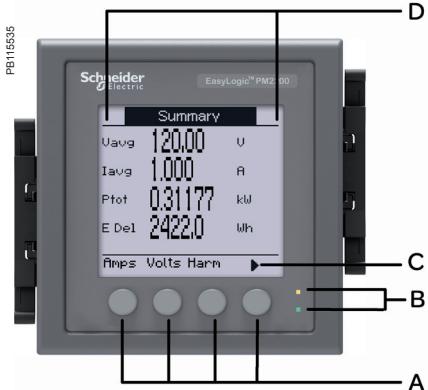
Mechanical dimension	90.5 mm W x 53 mm H x 14.67 mm D (without connector) (3.56 in x 2.08 in x 0.57 in)
Weight	50 gms (1.76 oz)

* as per IEC 61326-1

Feature set summary	PM2110	PM2120	PM2130	PM2210	PM2220	PM2230
Accuracy Class for Wh	1.0	0.5S		1.0		0.5S
Accuracy Class for VARh			1.0			
Accuracy for VAh			+/- 0.5%			
Amps, per-phase, average and calculated neutral current			■			
Voltage, V L-N, V L-L, per-phase and average			■			
Power Factor	True PF	True PF Displacement PF ⁺³	True PF	True PF Displacement PF		
Frequency, any available phase		■				
Power: W, VA, VAR: per-phase and total		■				
3-phase unbalance %	Current	Current Voltage ⁺³	Current	Current Voltage		
Demand parameters (Present, Last, Predicted and Peak for W, VA, VAR, Amps)	■	■	■	■		
Date and Time stamp for peak demand	(no timestamp)		(no timestamp)			
Energy: Wh, VAh, VARh (4 quadrant) Delivered (Import or Forward), Received (Export or Reverse)	Delivered, Received	Delivered, Received Total ⁺³ , Net ⁺³ , Last cleared ⁺³	Delivered, Received, Total, Net	Delivered, Received Total, Net, Last cleared ⁺³		
Active load timer, meter operating timer, run hours and power outage counter		Through com			■	
THD: Voltage L-N or L-L, Amps per phase		■				
Individual harmonics for Voltage, Current, per-phase		Up to 15th ⁺³ Up to 31st ⁺³		Up to 15th	Up to 31st	
Min/ Max with real time clock For avg or total of V L-L, V L-N, Amps, PF, Hz, W, VA, VAR parameters with date and time stamp of occurrence		Through com			■	
Communication	Pulse Output	RS-485	Pulse Output	RS-485		
Expandable Analogue IO modules (2 inputs & 2 outputs) ⁺⁵		■			■	
Expandable Digital IO modules (2 inputs & 2 outputs) ⁺⁵		■			■	
Customizable data logging up to 2 parameters. Option to select Power (W,VA,VAR) Bi-directional energy (+/-Wh, +/-VAh, +/-VARh), Demand (W, VA, VAR) with configurable interval and duration (e.g. 2 parameters for 60 days at 15 minutes interval)		■			■	
12 am snap shot of Avg Voltage, Avg Current, Total active power & Energy delivered as measured at 12am				■		
Rate counters: 2 configurable counters to display values in customer specified units base on energy measured (e.g., kgCO ₂ emission or energy cost)				■		

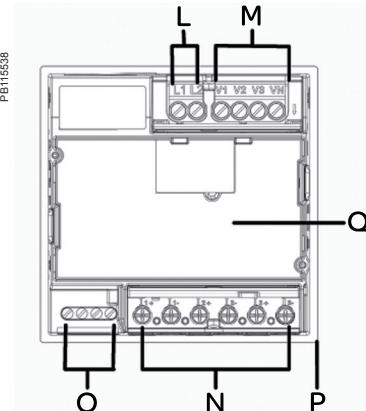
⁺³ Through communication only⁺⁵ Any one IO module can be used at a time with PM2130 or PM2230 meter. The control power range with IO module shall be 90 to 300V AC L-N or DC.

PM2000 LCD display legend description



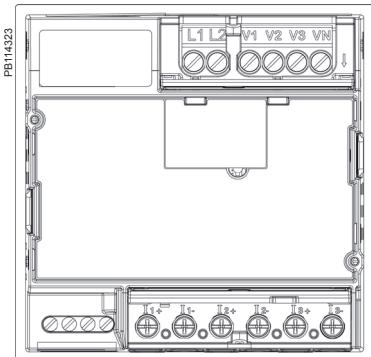
- A Menu selection buttons
- B LED indicators
- C Navigation or menu selections:
 - ▲ Exit screen and go up one level
 - ▲ Move cursor up list of options
 - ▼ Move cursor down, display more options
 - ◀ Move cursor one character to the left
 - ▶ Scroll right and display more menu items
 - + Show next item in list or increase the highlighted value
 - Show previous item in list
- D Maintenance & alarm notification area
- E Control power
- F Voltage inputs
- G Current inputs
- H RS-485 / POP
- I Gasket
- J I/O slot (for PM2230 only)

PM2000 LED display legend description

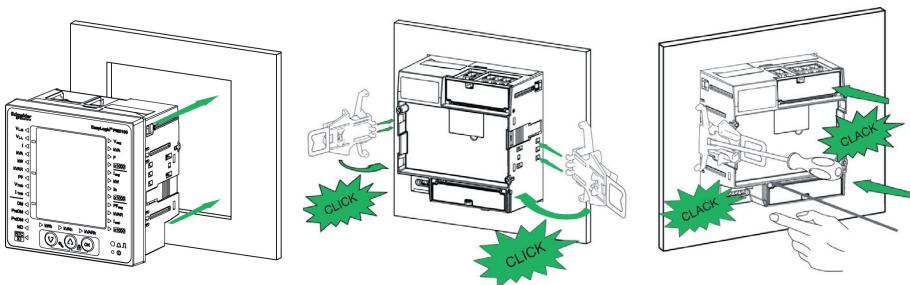


- A Phase measurements (VL-N, VL-L, I, kVA, kW, kVAR, PF, VTHD, ITHD)
- B Demand measurements (DM, PrsDM, Prd, DM, MD)
- C RTC Date & time
- D Negative indicator
- E Navigation key to navigate down
- F Energy readings Apparent energy, Active energy, Reactive energy
- G Navigation key to navigate up
- H OK Enter key
- I Energy pulsing LED (red) Heartbeat / communications LED (green)
- J x 1000 indicator
- K System measurements Vavg, kVA, F, Iavg, kW, In, PFavg, kVAR, lumb
- L Control power L1, L2
- M Input voltage terminals V1, V2, V3, VN
- N Input current terminals I1+, I1-, I2+, I2-, I3+, I3-
- O RS-485 communications / POP terminals
- P Gasket
- Q I/O card slot (for PM2130 only)

PM2000 meter rear view

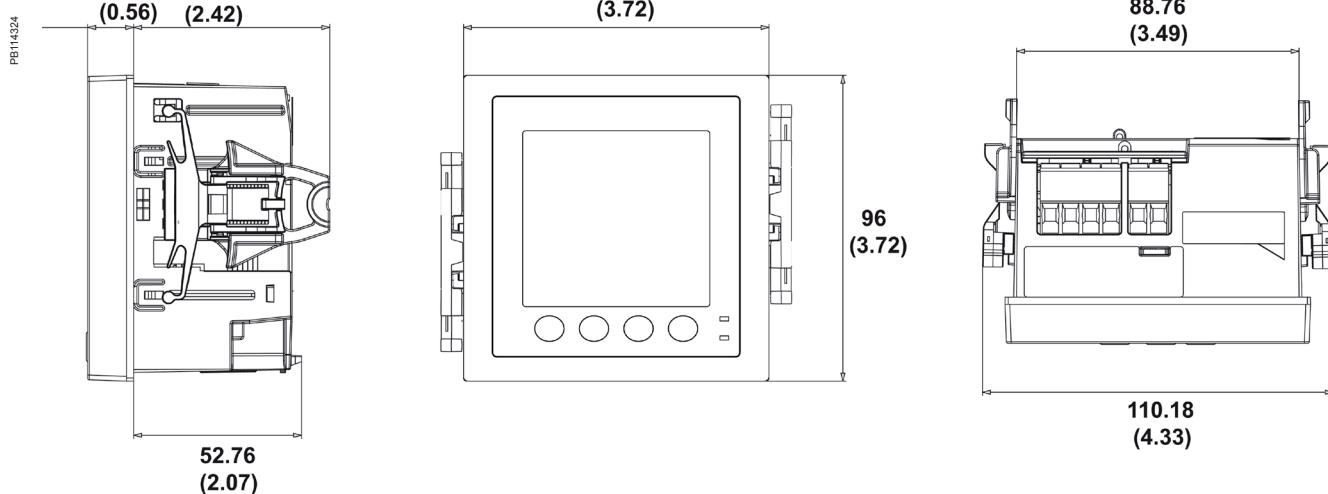


LED meter installation

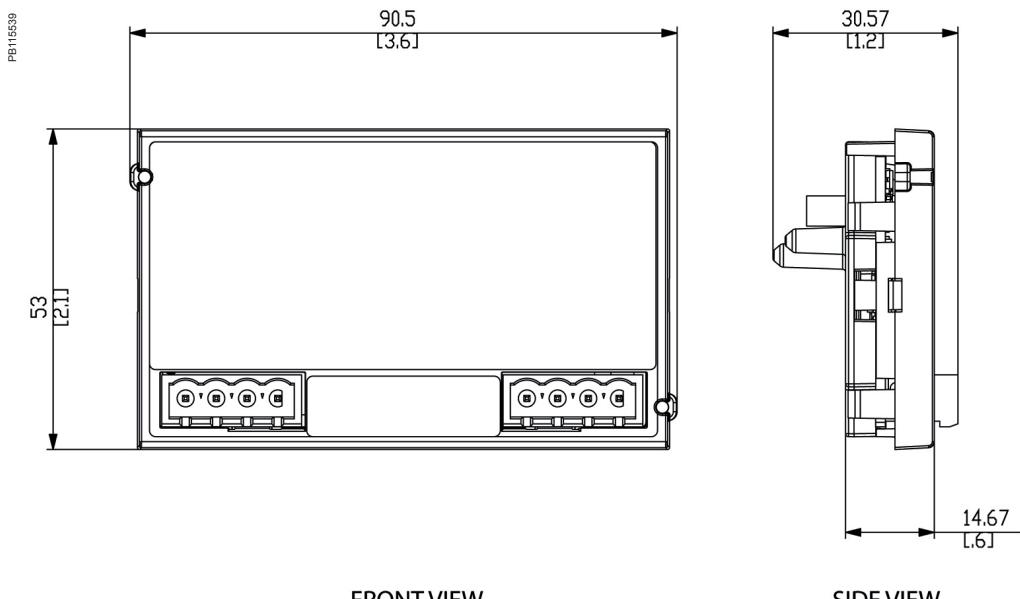


PM2000 multi-function meter mechanical dimensions

mm
(in)



PM2000 I/O module mechanical dimensions



Index of commercial reference numbers

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DM3000 series		6
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See your Schneider Electric representative for complete ordering information

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