

Basic Multi-function Metering

A range of meters designed for cost management and simple network management. Affordable to buy and easy to choose, the highly-capable PowerLogic™ PM5000 and PM5350 series meters are designed to provide the best combination of features to match all your energy cost management needs.

As well as pin-point energy savings, optimal equipment efficiency and utilisation, basic multi-function meters perform a high level assessment of the power quality in an electrical network.

- PowerLogic™ PM5000
- PowerLogic™ PM5350
- PowerLogic™ PM5350IB
- PowerLogic™ PM5350PB
- PowerLogic™ PM5350P



METSEPM5110



METSEPM5560

PowerLogic™ PM5000 series

The PowerLogic™ PM5000 series power meters are the new benchmark in affordable, precision metering.

The value you want, the precision you need. Compact, affordable power meters with high-end cost capabilities and basic mobile energy management.

Applications

Capable of essential cost management:

- Sub-billing/tenant metering ⁽⁺¹⁾
- Equipment sub-billing
- Energy cost allocation

Also ideal for electrical network management:

- Track real-time power conditions
- Monitor control functions
- Provide basic power quality values
- Detect and capture voltage sag and swell events
- Monitor residual current
- Analyze equipment and network status
- BACnet/IP, EtherNet/IP, and DNP3.0 protocol support



⁽⁺¹⁾ Subjected to local regulations.

The solution for

Markets that can benefit from a solution that includes PowerLogic™ PM5000 series meters:

- Buildings
- Industry
- Healthcare
- Data Center and networks
- Infrastructure

Benefits

System integrators' benefit

- Ease of integration
- Ease of setup
- Cost effectiveness

Panel builders' benefit

- Ease of installation
- Cost effectiveness
- Aesthetically pleasing
- Simplified ordering
- Low Voltage DC control power option
- Analog inputs options

End users' benefit

- Ease of use
- Precision metering & sub-billing ⁽⁺²⁾
- Billing flexibility
- Comprehensive, consistent and superior performance
- Maximize uptime, eliminate faults, and enhance safety
- Cybersecurity features

Competitive advantages

- Easy to install and operate
- Easy for circuit breaker monitoring and control
- WAGES monitoring
- Data logging up to 16 parameters
- Power quality analysis up to 63rd harmonics
- Load management combined with alarm and timestamping
- High performance and accuracy
- Residual Current Monitoring (RCM) in PM56xx⁽⁺⁴⁾ and PM57xx⁽⁺⁴⁾
- Voltage sag and swell detection with waveform capture
- MID ready compliance for legal billing application
- Onboard BACnet/IP, EtherNet/IP, and DNP3.0 protocol support
- PM5310R ⁽⁺³⁾ and PM5320R ⁽⁺³⁾ are enabled to connect with LVCT for faster installations

⁽⁺²⁾ Subjected to local regulations.

⁽⁺³⁾ PM5310R and PM5320R must be used with Schneider Electric's "Quick Click" 3-in-1 LVCTs.

⁽⁺⁴⁾ PM5660, PM5661, PM5760, PM5761 must be used with Toroids.

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximize electrical network reliability and availability, and optimize electrical asset performance.

Conformity of standards

- BS/EN/IEC 61557-12:2018/AMD1:2021
- BS/EN/IEC 62052-11:2020 edition 2
- IEC 62052-31:2015
- BS/EN/IEC 62053-22:2020 edition 2
- BS/EN/IEC 62053-23:2020 edition 2
- IEEE 802.3
- EN 50470-1:2006
- EN 50470-3:2006
- CE and UKCA as per IEC/BS 61010-1 edition 3
- cULus as per UL 61010-1 edition 3
- BS/EN/IEC 61010-2-30:2017
- BS/EN/IEC 61326-1: edition 3
- FCC part 15 Class B
- EN 55022 Class B
- BACnet/IP - BTL listed (B-ASC)
- EtherNet/IP - ODVA certified
- ANSI C12.1-2008 (PM55xx)
- ANSI C12.20 Class 0.2 & 0.5
- Align with cyber security guidelines as per IEC 62443
- Type A as per IEC 62020 for RCM

Meets IEC 61557-12 PMD/[SD|SS]/K70/0.5 for PM5100 and PM5300

Meets IEC 61557-12 PMD/[SD|SS]/K70/0.2 for PM5500, PM5600, PM5700

- Legal billing compliance
 - MID compliance is compulsory for billing applications across Europe
 - In addition to billing applications, for facility managers responsible for energy cost
 - MID means same level of quality as a billing meter

MID Certified according to MID Directive, Annex "B" + Annex "D" for legal metrology relevant to active electrical energy meters (see Annex MI-003 of MID). Can be used for fiscal (legal) metrology.

MID ready compliance, EN 50470-1/3 – Class C

PM5000 series

PowerLogic™ PM5100, PM5300 and PM5500 series

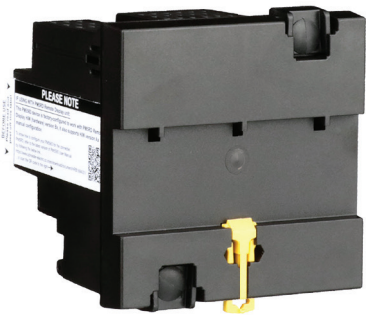
The PowerLogic™ PM5000 power meter is the ideal fit for cost management applications. Designed for use in both energy management systems and building management systems, it provides the measurement capabilities needed to allocate energy usage, perform tenant metering and sub-billing, pin-point energy savings, optimize equipment efficiency and utilization, and perform a high level assessment of the power quality of the electrical network.

In a single 96 x 96 mm unit, with a graphical display, (plus optional remote display) all three phases, neutral and ground can be monitored simultaneously. The bright, anti-glare display features large characters and powerful backlighting for easy reading even in extreme lighting conditions and viewing angles. Easy to understand menus, text in 8 selectable languages, icons and graphics create a friendly environment to learn about your electrical network. Ethernet gateway and enhanced cyber security. These are highly accurate devices with global billing certifications.

Applications

- **Cost management:** Cost saving opportunities become clear once you understand how and when your facility uses electricity. The PowerLogic™ PM5000 series meters are ideal for:
 - Sub-billing / tenant metering: Allows a landlord, property management firm, condominium association, homeowners association, or other multi-tenant property to bill tenants for individual measured utility (electricity) usage depending on the local regulations. MID approved meters for billing applications across Europe.
 - Cost allocation: Allocate energy costs between different departments (HVAC, indoor and outdoor lighting, refrigeration, etc.), different parts of an industrial process or different cost centres. Cost allocation systems can help you save money by making changes to your operation, better maintaining your equipment, taking advantage of pricing fluctuations, and managing your demand.
- **Network management:** Improving reliability of the electrical network is key for success in any business. Monitoring values such as voltage levels, harmonics distortions, voltage unbalance, residual current, voltage sag and swell will help you to ensure proper operation and maintenance of your electrical network and equipment. PowerLogic™ PM5000 series meters are the perfect tool for:
 - Basic Power Quality monitoring: Power quality phenomena can cause undesirable effects such as heating in transformers, capacitors, motors, generators and misoperation of electronic equipment and protection devices.
 - Min/ Max monitoring (with timestamp): Understanding when electrical parameters, such as voltage, current and power demand, reach maximum and minimum values will give you the insight to correctly maintain your electrical network and assure equipment will not be damaged.
 - Alarming: alarms help you to be aware of any abnormal behaviour on the electrical network in the moment it happens.
 - WAGES monitoring: take advantage of the input metering on PM5000 meters to integrate measurements from third party devices such as water, air, gas, electricity or steam meters.
 - Residual current monitoring: measures leakage current flowing in TN & TT network system.
 - Voltage sags and swells: measures and captures wave form in the event of voltage sags and swells in the network.
- **Main characteristics**
 - Easy to install
 - Mounts using two clips, in standard cut out for DIN 96 x 96 mm, no tools required. Compact meter with 72 mm (77 mm for PM5500) depth connectable up to 690 V L-L without voltage transformers for installations compliant with category III. Optional remote display (PM5563). Ethernet gateway functionality via RS-485 port.
 - Easy to operate
 - Intuitive navigation with self-guided, language selectable menus, six lines, four concurrent values. Two LEDs on the meter face help the user confirm normal operation with a green LED - heartbeat/communications indicator, and the amber LED - customizable either for alarms or energy pulse outputs. Onboard web pages (PM5500) show real-time and logged information, and verify communications.
 - Easy circuit breaker monitoring and control
 - The PM5300 provides two relay outputs (high performance Form A type) with capability to command most of the circuit breaker coils directly. For Digital Inputs, monitored switches can be wired directly to the meter without external power supply by using whetting output voltage.
 - PM5500 series have 4 status inputs (digital) and 2 digital output (solid state) to use for WAGES monitoring, control and alarm annunciation.

PB118062



PowerLogic™ PM5563 meter

PB118063



PowerLogic™ PM5563 remote display front ISO

PB118064



PowerLogic™ PM5563 remote display rear ISO

Accurate energy measurement for precise cost allocation:

	PM5100	PM5300	PM5500	PM5600	PM5700
IEC 62053-22 (Active Energy)	Class 0.5S	Class 0.5S	Class 0.2S	Class 0.2S	Class 0.2S
IEC 62053-23 (Reactive Energy)	Class 1.0	Class 1.0	Class 1.0	Class 1.0	Class 1.0

PM5000 series

PB111777



PowerLogic™ PM5500 meter

PB111772



PowerLogic™ PM5300 meter

PB111768



PowerLogic™ PM5100 meter

Native multi-protocol support

The PM55/PM56/PM5700 is now easier than ever to integrate into new and existing BMS systems. With native BACnet/IP protocol support, meters can simultaneously communicate via BACnet and Modbus in applications where multiple software systems are used (building management and energy management systems).

The PM55/PM56/PM5700 series has been tested and certified in accordance with BACnet Testing Laboratories (BTL) requirements and Ethernet IP protocol as per ODVA requirements.

- PM55/PM56/PM5700 Direct metering of neutral current
 - The PM55/PM56/PM5700 has a fourth CT for measuring neutral current. In demanding IT applications, where loads are non-linear (i.e. switching power supplies on computers/servers), measuring neutral current is essential to avoid overload and resulting outage.
 - Power Quality analysis
 - The PM5000 offers Total Harmonic Distortion (THD/thd), Total Demand Distortion (TDD) measurements and individual harmonics (odd) magnitudes and angles for voltage and current:

	PM5100	PM5300	PM55/56/5700
Individual Harmonics	magnitudes up to 15 th	magnitudes up to 31 st	magnitudes & angles up to 63 rd

- These types of power quality parameters help to identify the source of harmonics that can harm transformers, capacitors, generators, motors and electronic equipment.
- Load management
 - Peak demands with time stamping are provided. Predicted demand values can be used in combination with alarms for basic load shedding applications.
- Alarming with time stamping
 - A different combination of set point driven alarms and digital alarms with 1s time stamping are available in the PM5000 family:

	PM5100	PM5300	PM55/56/5700
Set point driven alarms	29	29	29 or 33*
Unary	4	4	4
Digital	–	2	4 or 2
Boolean / Logic	–	–	10
Custom defined	–	–	5

*Applicable in specific meter models. 2 alarms for disturbance (Sag/ Swell).

- Alarms can be visualized as Active (the ones that have picked up and did not drop out yet) or Historical (the ones that happened in the past). Alarms can be programmed and combined to trigger digital outputs and mechanical relays (PM5300).
- The PM5000 series keeps an alarm log with the active and historical alarms with date and time stamping. SMTP protocol for receiving alarm conditions via email and text. SNTP protocol for date/time network synchronization.
- Load timer
 - A load timer can be set to count load running hours based on a minimum current withdraw, adjustable to monitor and advise maintenance requirements on the load.
- High Performance and accuracy
 - IEC 61557-12 Performance measuring and monitoring devices (PMD). Defines the performance expectation based on classes. It defines the allowable error in the class for real and reactive power and energy, frequency, current, voltage, power factor, voltage unbalance, voltage and current harmonics (odds), voltage THD, current THD, as well as ratings for temperature, relative humidity, altitude, start-up current and safety. It makes compliant meters readings comparable - they will measure the same values when connected to the same load.

PM5000 series

PM5000 series feature selection

	PM5100		PM5300					
	PM5100	PM5110	PM5310	PM5310R ⁽⁺⁵⁾	PM5320	PM5320R ⁽⁺⁵⁾	PM5330	PM5340
Installation								
Fast installation, panel mount with integrated display	■	■	■	■	■	■	■	■
Fast installation, DIN rail mountable	-	-	-	-	-	-	-	-
Accuracy								
Class	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S
Display								
Backlit LCD, multilingual, bar graphs, 6 lines, 4 concurrent values	■	■	■	■	■	■	■	■
Power and energy metering								
3-ph voltage, current, power, demand, energy, frequency, power factor	■	■	■	■	■	■	■	■
Multi-tariff	-	-	4	4	4	4	4	4
MID ready compliance, EN50470-1/3, Annex B & Annex D Class C	-	PM5111	-	-	-	-	PM5331	PM5341
Power quality analysis								
THD, thd, TDD	■	■	■	■	■	■	■	■
Harmonics, individual (odd) up to	15th	15th	31st	31st	31st	31st	31st	31st
Waveform capture & sag/swell detection	-	-	-	-	-	-	-	-
I/Os and relays								
Digital inputs/ Digital output	1DO	1DO	2DI/2DO	2DI/2DO	2DI/2DO	2DI/2DO	2DI/2DO	2DI/2DO
Relays	-	-	-	-	-	-	2	2
Analog inputs	-	-	-	-	-	-	-	-
Residual Current inputs	-	-	-	-	-	-	-	-
Alarms and control								
Alarms	33	33	35	35	35	35	35	35
Set point response time, seconds	1	1	1	1	1	1	1	1
Single and multi-condition alarms	-	-	■	■	■	■	■	■
Boolean alarm logic	-	-	-	-	-	-	-	-
Memory for data logging	-	-	256KB	256KB	256KB	256KB	256KB	256KB
Communications								
Serial ports with modbus protocol	-	1	1	1	-	-	1	-
Ethernet port with Modbus TCP protocol	-	-	-	-	1	1	-	1
BACnet/IP protocol	-	-	-	-	■	■	-	■
EtherNet/IP protocol	-	-	-	-	-	-	-	-
DNP3.0 over Ethernet	-	-	-	-	-	-	-	-
Onboard web server with web pages	-	-	-	-	-	-	-	-
Serial to Ethernet gateway	-	-	-	-	-	-	-	-
Ref. number followed with METSE*	PM5100	PM5110	PM5310	PM5310R ⁽⁺⁵⁾	PM5320	PM5320R ⁽⁺⁵⁾	PM5330	PM5340

*See table below for complete commercial reference numbers

⁽⁺⁵⁾ PM5310R and PM5320R must be used with Schneider Electric's "Quick Click" 3-in-1 LVCTs

PM5000 series

PM5000 series feature selection

	PM5500					PM5600		PM5700
	PM5560	PM5563	PM5563RD	PM5570	PM5580	PM5650	PM5660	PM5760
Installation								
Fast installation, panel mount with integrated display	■	–	–	■	■	■	■	■
Fast installation, DIN rail mountable	–	■	■	–	–	–	–	–
Accuracy								
Class	CL 0.2S	CL 0.2S	CL 0.2S	CL 0.2S	CL 0.2S	CL 0.2S	CL 0.2S	CL 0.2S
Display								
Backlit LCD, multilingual, bar graphs, 6 lines, 4 concurrent values	■	–	■	■	■	■	■	■
Power and energy metering								
3-ph voltage, current, power, demand, energy, frequency, power factor	■	■	■	■	■	■	■	■
Multi-tariff	8	8	8	8	8	8	8	8
MID ready compliance, EN50470-1/3, Annex B & Annex D Class C	PM5561	–	–	–	–	–	PM5661	PM5761
Power quality analysis								
THD, thd, TDD	■	■	■	■	■	■	■	■
Harmonics, individual (odd) up to	63 rd	63 rd	63 rd	63 rd	63 rd	63 rd	63 rd	63 rd
Waveform capture & sag/swell detection	–	–	–	–	–	8 cycles @ 128 samples/cycle	–	8 cycles @ 128 samples/cycle
I/Os and relays								
Digital inputs/ solid state Digital output	4DI/2DO	4DI/2DO	4DI/2DO	2DI/2DO	4DI/2DO	4DI/2DO	2DI/2DO	2DI/2DO
Relays	–	–	–	–	–	–	–	–
Analog inputs	–	–	–	2	–	–	–	–
Residual Current inputs	–	–	–	–	–	–	2	2
Alarms and control								
Alarms	52	52	52	50	52	54	54	56
Set point response time, seconds	1	1	1	1	1	1	1	1
Single and multi-condition alarms	■	■	■	■	■	■	■	■
Boolean alarm logic	■	■	■	■	■	■	■	■
Memory for data logging	1.1 MB	1.1 MB	1.1 MB	1.1 MB	1.1 MB	1.1 MB	1.1 MB	1.1 MB
Communications								
Serial ports with modbus protocol	1	1	1	1	1	1	1	1
Ethernet port with Modbus TCP protocol	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾	2 ⁽⁺⁶⁾
BACnet/IP protocol	■	■	■	■	■	■	■	■
EtherNet/IP protocol	■	■	■	■	■	■	■	■
DNP3.0 over Ethernet	■	■	■	■	■	■	■	■
Onboard web server with web pages	■	■	■	■	■	■	■	■
Serial to Ethernet gateway	■	■	■	■	■	■	■	■
Ref. numbers with METSE*	PM5560	PM5563	PM5563RD	PM5570	PM5580	PM5650	PM5660	PM5760
*See table below for complete commercial reference numbers								

⁽⁺⁶⁾ 2 Ethernet ports for daisy chain, one IP address.

PM5000 series

PM5000 technical specifications

		PM5100	PM5300	PM5500	PM5600	PM5700
Use on LV and MV systems				■		
Basic metering with THD and min/max readings				■		
Instantaneous rms values						
Current	Average, per phase, neutral and ground (PM5500)			■		
Voltage	Average, per phase L-L and L-N			■		
Frequency	Any available phase			■		
Real, reactive, and apparent power	Total and per phase			Signed, Four Quadrant		
True Power Factor	Average and per phase			Signed, Four Quadrant		
Displacement PF	Average and per phase			Signed, Four Quadrant		
% Unbalanced I, V L-N, V L-L				■		
Direct monitoring of neutral current		-		■	■	■
Energy values						
Accumulated Active, Reactive and Apparent Energy		Received/Delivered; Net and absolute; Time Counters				
Demand value						
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				
Peak demand with timestamping D/T for current and three powers				■		
Demand calculation	Sliding, fixed and rolling block, thermal methods			■		
Synchronisation of the measurement window to input, communication command or internal clock				■		
Settable Demand intervals				■		
Demand synchronization with pulse input		-			■	
Other measurements						
I/O timer				■		
Operating timer				■		
Load timer				■		
Alarm counters and alarm logs				■		
Power quality measurements						
THD, thd (Total Harmonic Distortion) I, V L-N, V L-L		I, V L-N, V L-L				
TDD (Total Demand Distortion)				■		
Individual harmonics (odds)		15 th (PM5110)	31 st			63 rd
Neutral Current metering with ground current calculation		-	-			■
Waveform capture and sag/swell detection		-	-	-		8 cycles @ 128 samples/cycle
Data recording						
Min/max of instantaneous values, plus phase identification ⁽⁺⁷⁾				■		
Alarms with 1s timestamping ⁽⁺⁷⁾				■		
Data logging			2 fixed parameters kWh and kVAh with configurable interval & duration (e.g. 2 parameters for minimum 60 days at 15-minute intervals)	Up to 14 selectable parameters with configurable interval and duration (e.g. 6 parameters for minimum 90 days at 15-minute intervals)		
Min/max log		■	■			■
Maintenance, alarm and event logs			■			■
Customisable data logs		-				■
RTC with battery back up		3 years (when meter is in Power OFF condition)				
Display resolution		5 digits for Energy and other parameters with auto scaling				
Preset Energy and Energy scaling		Available in selected references				

⁽⁺⁷⁾ Stored in non-volatile memory

PM5000 series

PM5000 technical specifications

		PM5100	PM5300	PM5500	PM5600	PM5700
Inputs / Outputs / Mechanical Relays						
Digital inputs		–	2	4 in PM5560, PM5561, PM5562, PM5563, PM5580, PM5650 2 in PM5570, PM5660, PM5661, PM5760, PM5761		
Digital outputs		1 (kWh only)	2	2 (Solid state)		
Form A Relay outputs		–	2	–		
Analog inputs		–	–	2 for PM5570	–	–
Residual Current inputs		–	–		2 for PM5660	2 for PM5760
Timestamp resolution in seconds		1	1	1	1	1
Whetting source		–	24 V DC, 8 mA	–	–	–
Type of measurement: True rms on three-phase (3P, 3P + N)		64 samples per cycle		128 samples per cycle		
Measurement accuracy	IEC 61557-12	PMD/[SD SS]/K70/0.5		PMD/[SD SS]/K70/0.2		
	Active Energy	Class 0.5S as per IEC 62053-22/ Class 0.5 as per IEC 61557-12/ ± 0.5%		Class 0.2S as per IEC 62053-22/ Class 0.2 as per IEC 61557-12/ ± 0.2%		
	Reactive Energy	Class 2 as per IEC 62053-23/ Class 1.0 as per IEC 61557-12/ ± 1.0%		Class 2 as per IEC 62053-23/ Class 1.0 as per IEC 61557-12/ ± 1.0%		
	Active Power	Class 0.5 as per IEC 61557-12/ ± 0.5%		Class 0.2 as per IEC 61557-12/ ± 0.2%		
	Apparent Power	Class 0.5 as per IEC 61557-12/ ± 0.5%		Class 0.5 as per IEC 61557-12/ ± 0.5%		
	Reactive Power	Class 1.0 as per IEC 61557-12/ ± 1.0%		Class 1.0 as per IEC 61557-12/ ± 1.0%		
	Current, Phase	Class 0.5 as per IEC 61557-12/ ±0.5 %		Class 0.2 as per IEC 61557-12/ ±0.15 %		
	Voltage, L-N	Class 0.5 as per IEC 61557-12/ ± 0.5 %		Class 0.2 as per IEC 61557-12/ ± 0.1 %		
	Frequency	Class 0.05 as per IEC 61557-12/ ±0.05 %		Class 0.05 as per IEC 61557-12/ ±0.05 %		
	Power Factor	Class 0.5 as per IEC 61557-12/ ±0.005 count		Class 0.5 as per IEC 61557-12/ ±0.005 count		
	Voltage unbalance	Class 5/ ±5%		Class 2/ ±2%		
	Voltage harmonics	Class 5/ ±5%		Class 2/ ±2%		
	Voltage THD Class	Class 5/ ±5%		Class 2/ ±2%		
	Current harmonics	Class 5/ ±5%		Class 2/ ±2%		
	Current THD Class	Class 5/ ±5%		Class 2/ ±2%		
MID Directive EN50470-1, EN50470-3	Annex B and Annex D (Optional model references) Class C					
Input-voltage (up to 1.0 MV AC max, with voltage transformer)	Nominal Measured Voltage range	20 V L-N / 35 V L-L to 400 V L-N /690 V L-L absolute range 35 V L-L to 760 V L-L		20 V L-N / 20 V L-L to 400 V L-N /690 V L-L absolute range 20 V L-L to 828 V L-L		
	Impedance	5 MΩ				
	Frequency nominal	50 or 60 Hz ±5 %		50 or 60 Hz ±10 %		
Input-current (configurable for 1 or 5 A secondary CTs)	I nominal	5 A			–	
	Measured Amps with over range	Starting current: 5 mA Operating range: 50 mA to 8.5 A		Starting current: 5 mA Operating range: 50 mA to 10 A (with Crest Factor)		
	Withstand	Continuous 20 A, 10 s/hr 50 A, 1 s/hr 500 A				
	Impedance	< 0.3 mΩ				
	Frequency nominal	50 or 60 Hz ±5 %		50 or 60 Hz ±10 %		
	Burden	<0.026 VA at 8.5 A				
AC control power	Operating range	100 - 277 V AC L-N / 415 V L-L +/-10 % CAT III 300V class per IEC 61010		100-480 V AC ±10 % CAT III 600V class per IEC 61010		
	Burden	<5 W, 11 VA at 415V L-L		<5W/16.0 VA at 480 V AC		
	Frequency	45 to 65 Hz				
	Ride through time at maximum burden	80 mS typical at 120V AC 100 mS typical at 230 V AC 100 mS typical at 415 V AC		35 ms typical at 120 V L-N 129 ms typical at 230 V L-N		
DC control power	Operating range	125–250 V DC ±20 % (100 to 300 V DC)				
	Burden	<4 W at 250 V DC		typical 3.1 W at 125 V DC, max. 5 W		
	Ride-through time	50 mS typical at 125 V DC and maximum burden				
LV DC control power	20-60 V DC ±10 % CAT III Burden 4.1 W max.	–	–	■ PM5580	–	–

PM5000 series

PM5000 technical specifications

		PM5100	PM5300	PM5500	PM5600	PM5700	
Outputs	Relay outputs	Max output frequency	–	0.5 Hz maximum (1 s ON / 1 s OFF - min times)	–	–	
		Switching current, at resistive load	–	250 V AC at 8.0 Amps, 25 k cycles 30 V DC at 2.0 Amps, 75 k cycles 30 V DC at 5.0 Amps, 12.5 k cycles	–	–	–
		Isolation	–	2.5 kV rms	–	–	–
	Digital outputs	Max load voltage	40 V DC		40 V AC / 60 V DC (PM5500 and PM 5650) 30 V AC / 40 V DC (PM5660, PM5661, PM5760, PM5761)		
		Max load current	20 mA		125 mA (Solid state)		
		On Resistance	50 Ω max		8 Ω		
		Meter constant	from 1 to 9,999,999 pulses per k_h (kWh, kVAh, kVARh)				
		Pulse width for Digital Output	50 % duty cycle				
		Pulse frequency for Digital Output	25 Hz max.				
		Leakage current	0.3 micro Amps		1 micro Amps		
	Optical outputs	Isolation	5 kV rms		2.5 kV rms for 60 s		
		Pulse width (LED)	200 ms				
		Pulse frequency	2.5 kHz. max		2.5 kHz. max		
	Status Inputs	Meter constant	from 1 to 9,999,999 pulses per k_h (kWh, kVAh, kVARh)				
		ON Voltage	–	18.5 to 36 V DC	15 to 30 V AC / 15 to 60 V DC max		
OFF Voltage		–	0 to 4 V DC	0 to 6 V AC / 0 to 6 V DC			
Input Resistance		–	110 k Ω	100 k Ω			
Maximum Frequency		–	2 Hz (T ON min = T OFF min = 250 ms)	25 Hz (T ON min = T OFF min = 20 ms)			
Response Time		–	20 ms	10 ms			
Opto Isolation		–	5 kV rms	2.5 kV rms for 60 s			
Whetting output		–	24 V DC / 8 mA max	-			
Input Burden	–	2 mA @24V DC	2 mA @ 24 V AC/DC 2.5 mA @ 60 V AC/DC				
Analog inputs (PM5570)		–		4 - 20 mA DC (nominal), Accuracy: 1% of full-scale reading, Impedance < 20 Ω, Operating voltage: 24 V DC max		–	
Residual Current inputs (PM5660, PM5661, PM5760, PM5761) Type A as per IEC 62020		–		5 uA to 1200 uA (nominal), 1500 uA max (continuous), Input type: AC 45 to 65 Hz, Burden: 150 Ω, Default toroid: 1000 turns			
Mechanical characteristics							
Product weight		380 g	430 g	450 g	450 g	450 g	
IP degree of protection (IEC 60529)		IP54 front display, IP30 rear side (IP65 front side with Optional accessory kit METSEIP65OP96X96FF)					
Dimensions W x H x D [protrusion from cabinet]		96 x 96 x 72 mm (77 mm for PM5500) (depth of meter from housing mounting flange) [13 mm]					
Mounting position		Vertical					
Panel thickness		6 mm maximum					
LVCT ^(*) inputs for PM5310R and PM5320R - Nominal voltage of 0.333V							
Measurement range		-	0.00333V - 0.4V	-	-	-	

(*) PM5310R and PM5320R must be used with Schneider Electric's "Quick Click" 3-in-1 LVCTs

PM5000 series

PM5000 technical specifications

		PM5100	PM5300	PM5500	PM5600	PM5700
Environmental characteristics						
Operating temperature	Operating temperature	-25 °C to 70 °C				
	Display (reduced display performance at -25 °C)	-25 °C to 70 °C				
Storage temperature		-40 °C to 85 °C				
Humidity range		5 to 95 % RH at 50 °C (non-condensing)				
Pollution degree		2				
Altitude		2000 m CAT III / 3000 m CAT II		3000 m max. CAT III		
Mission profile / Life span		>15 years				
Protective treatment		Conformal coating				
Electromagnetic compatibility						
Harmonic current emissions		–	–	IEC 61000-3-2		
Flicker emissions		–	–	IEC 61000-3-3		
Electrostatic discharge		IEC 61000-4-2				
Immunity to radiated fields		IEC 61000-4-3				
Immunity to fast transients		IEC 61000-4-4				
Immunity to surge		IEC 61000-4-5				
Conducted immunity 150 kHz to 80 MHz		IEC 61000-4-6				
Immunity to magnetic fields		IEC 61000-4-8				
Immunity to voltage dips		IEC 61000-4-11				
Immunity to damped oscillatory waves		–	–	IEC 61000-4-12		
Radiated and conducted emissions		FCC part 15, EN 55022 Class B				
Safety						
Europe		CE, as per IEC 61010-1 Ed. 3, IEC 62052-11 & IEC 61557-12				
U.S. and Canada		cULus as per UL 61010-1 (Edition 3)				
Measurement category (Voltage & Current inputs)		CAT III up to 400 V L-N / 690 V L-L				
Dielectric		As per IEC/UL 61010-1 (Edition 3)				
Protective Class		II, Double insulated for user accessible parts				
Communication						
RS-485 port Modbus RTU, Modbus ASCII (7 or 8 bit), JBUS		2-Wire, 9600,19200 or 38400 baud, Parity - Even, Odd, None, 1 stop bit if parity Odd or Even, 2 stop bits if None; (Optional in PM51x and PM53x)				
Ethernet port: 10/100 Mbps; Modbus TCP/IP		–	1 Optional	2 (daisy chain only, 1 IP address)		
Native Ethernet/IP & DNP3.0 over Ethernet		–	–	Yes	Yes	Yes
FTP / FTPS		–	–	Yes	Yes	Yes
SNMP, SNT, SMTP		–	–	Yes	Yes	Yes
HTTPS		–	–	Yes	Yes	Yes
Firmware and language file update		Meter firmware update via the communication ports				
Isolation		2.5 kVrms, double insulated				
Human machine interface						
Display type		Monochrome Graphics LCD				
Resolution		128 x 128 pixels				
Backlight		White LED				
Viewable area (W x H)		67 x 62.5 mm				
Keypad		4-button				
Indicator Heartbeat / Communication activity		Green LED				
Energy pulse output / Active alarm (configurable)		Optical, amber LED				
Wavelength		590 to 635 nm				
Maximum pulse rate		2.5 kHz				

PM5000 series

Comm. ref numbers	Description
METSEPM5100	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 15th harmonic, 1DO
METSEPM5110	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 15th harmonic, 1DO, RS-485
METSEPM5111	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 15th harmonic, 1DO, RS-485, MID
METSEPM5310	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO, RS-485
METSEPM5310R	Power Meter, 600V AC L-L/ RJ45 LVCT input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO, RS-485
METSEPM5320	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO, Ethernet
METSEPM5320R	Power Meter, 600V AC L-L/ RJ45 LVCT input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO, Ethernet
METSEPM5330	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO/2-Relay, RS-485
METSEPM5331	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO/2-Relay, RS-485, MID
METSEPM5340	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO/2-Relay, Ethernet
METSEPM5341	Power Meter, 600V AC L-L/ 5A or 1A input, 415V AC L-L or 250V DC control power, CI 0.5S, 31st harmonic, 256 kB, 2DI/2DO/2-Relay, Ethernet, MID
METSEPM5560	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet
METSEPM5561	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet, MID
METSEPM5562	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet, RMI CAN approved, Hardware lockable
METSEPM5562MC	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet, RMI CAN approved, Factory sealed
METSEPM5563	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet, DIN mount, No display
METSEPM5563RD	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet, DIN mount, Remote display
METSEPM5570	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 2DI/2AI/2-DO, RS-485, Ethernet
METSEPM5580	Power Meter, 690V AC L-L/ 5A or 1A input, 24 to 64V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet
METSEPM5650	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 4DI/2-DO, RS-485, Ethernet, Wave Form Capture and Sag/swell
METSEPM5660	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 2DI/2-DO, RS-485, Ethernet, Residual Current Monitor
METSEPM5661	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 2DI/2-DO, RS-485, Ethernet, Residual Current Monitor, MID
METSEPM5760	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 2DI/2-DO, RS-485, Ethernet, Wave Form Capture and Sag/swell, Residual current monitor
METSEPM5761	Power Meter, 690V AC L-L/ 5A or 1A input, 480V AC L-L or 250V DC control power, CI 0.2S, 63rd harmonic, 1.1 MB, 2DI/2-DO, RS-485, Ethernet, Wave Form Capture and Sag/swell, Residual current monitor, MID

For selection of compatible current transformers with 5 A output in Schneider range: Refer **PLSED310169EN** in solid core and split core IEC type

For Residual Current Monitoring Toroids (Vigirex) - Closed Toroids, A Type (applicable for PM5660, PM5661, PM5760, PM5761)

50437	TA30 - closed toroid A type, for RCM enabled power meters, 30 mm inner diameter, rated current 65 Amps, 1000 turns
50438	PA50 - closed toroid A type, for RCM enabled power meters, 50 mm inner diameter, rated current 85 Amps, 1000 turns
50439	IA80 - closed toroid A type, for RCM enabled power meters, 80 mm inner diameter, rated current 160 Amps, 1000 turns
50440	MA120 - closed toroid A type, for RCM enabled power meters, 120 mm inner diameter, rated current 250 Amps, 1000 turns
50441	SA200 - closed toroid A type, for RCM enabled power meters, 200 mm inner diameter, rated current 400 Amps, 1000 turns
50442	GA300 - closed toroid A type, for RCM enabled power meters, 300 mm inner diameter, rated current 630 Amps, 1000 turns

Accessories for Closed Toroids (applicable for PM5660, PM5661, PM5760, PM5761)

56055	Magnetic ring/ Iron screen accessory for TA30 toroid sensor
56056	Magnetic ring/ Iron screen accessory for PA50 toroid sensor
56057	Magnetic ring/ Iron screen accessory for IA80 toroid sensor
56058	Magnetic ring/ Iron screen accessory for MA120 toroid sensor

Residual Current Monitoring Toroids (Vigirex) - Split Toroids, OA Type (applicable for PM5660, PM5661, PM5760, PM5761)

50420	TOA80 - split toroid OA type, 80 mm inner diameter, rated current 160 Amps, 1000 turns
50421	TOA120 - split toroid OA type, 120 mm inner diameter, rated current 250 Amps, 1000 turns
56053	L1 type - rectangular sensor, width 280 x height 115 mm, rated current 1600 Amps, 1000 turns
56054	L2 type - rectangular sensor, width 470 x height 160 mm, rated current 3200 Amps, 1000 turns

PowerLogic™ PM8000 series

The PowerLogic™ PM8000 series meters are compact, cost-effective multifunction power meters that will help you ensure reliability and efficiency of your power-critical facility.

Reveal and understand complex power quality conditions. Measure, understand and act on insightful data gathered from your entire power system. Designed for key metering points throughout your energy infrastructure, the PowerLogic™ PM8000 series meter has the versatility to perform nearly any job you need a meter to do, wherever you need it!

Applications

Ideal for low to high voltage applications in industrial facilities, data centers, infrastructure and other critical power environments.

PB113687



METSEPM8240

PM8000 series

The solution for

Markets that can benefit from a solution that includes PowerLogic™ PM8000 series meters:

- Industry
- Data centers
- Infrastructure
- Healthcare
- Buildings

Benefits

- Makes understanding power quality simple to help operations personnel avoid downtime and helps ensure increased productivity and equipment life.
- Makes energy and power quality immediately relevant and actionable to support your operational and sustainability goals.

Competitive advantages

- Modular, flexible patented ION technology architecture enables a simple building block approach.
- Disturbance Direction Detection, modularity and compliance with latest power quality standards.
- Color screen.
- Multiple communication options.
- Excellent accuracy.

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximize electrical network reliability and availability, and optimise electrical asset performance.

Conformity of standards

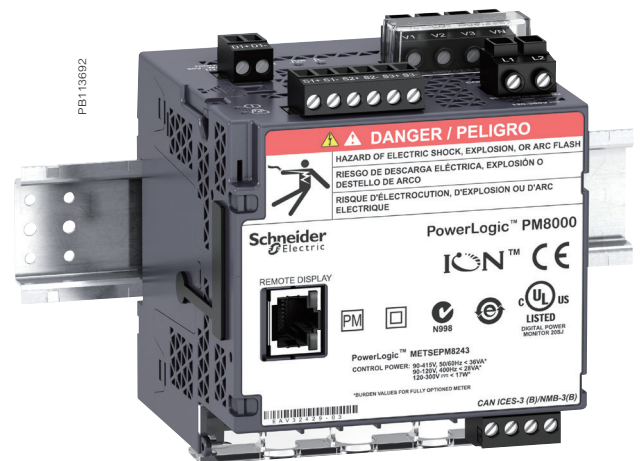
- EN 50160
- EN 50470
- IEC 61000-4-30
- IEC 61010-1
- IEC 61326-1
- IEC 61557-12
- IEC 62052-11
- IEC 62053-11
- IEC 62053-22
- IEC 62053-23
- IEC 62053-24
- IEC 62586-2
- IEEE 519
- UL 61010-1



PowerLogic™ PM8000 DIN rail meter- underside

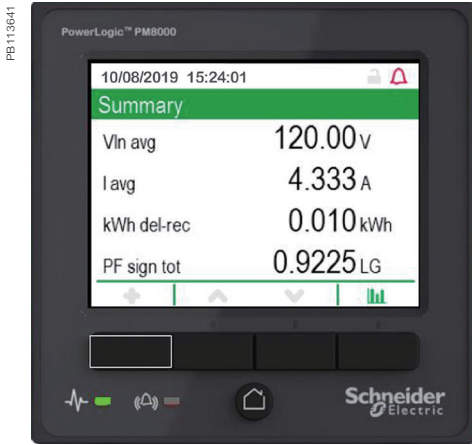


PowerLogic™ PM8000 series meter - rear view

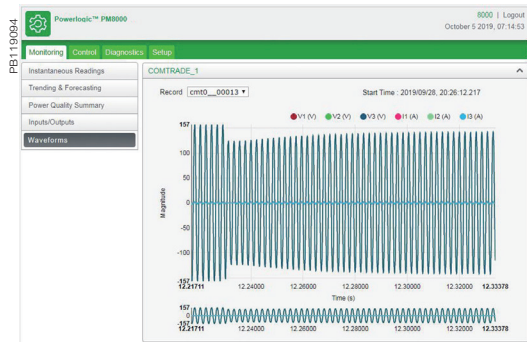


PowerLogic™ PM8000 DIN rail mounted meter

PM8000 series



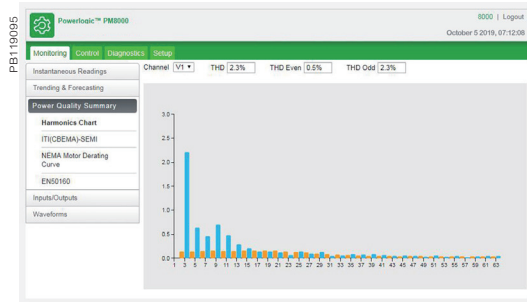
PowerLogic™ PM8000 series meter



PowerLogic™ PM8000 series waveform web page sample



PowerLogic™ PM8000 series CBEMA web page sample



PowerLogic™ PM8000 series PQ harmonics web page sample

Main characteristics

- Precision metering:
 - IEC 61557-12 PMD/SD/K70/0.2 and PMD/SS/K70/0.2 3000m (performance measuring and monitoring functions).
 - Class 0.2S accuracy IEC 62053-22, ANSI C12.20 Class 0.2 (active energy).
 - Industry leading Class 0.5S accuracy for reactive energy (IEC 62053-24).
 - Cycle-by-cycle RMS measurements updated every ½ cycle.
 - Full 'multi-utility' WAGES metering support.
 - Net metering.
 - Anti-tamper protection seals and hardware metrology lock.

- PQ compliance reporting and basic PQ analysis:
 - Monitors and logs parameters in support of international PQ standards,
 - IEC 61000-4-30 Class S (test methods as per IEC 62586-2).
 - Generates onboard PQ compliance reports accessible via onboard web pages:
 - Basic event summary and pass/fail reports, for EN 50160 for power frequency, supply voltage indication, supply voltage dips, short and long interruptions, temporary over voltages, voltage unbalance and harmonic voltage.
 - ITIC (CBEMA) and SEMI curves, with alarm categorization to support further analyses.
 - NEMA Motor Derating curve.
 - Pass/fail report for IEEE 519 for voltage and current harmonic limits.
 - Harmonic analysis:
 - THD on voltage and current, per phase, min/max, custom alarming.
 - Individual harmonic magnitudes and angles on voltage and current, up to the 63rd harmonic.
 - High resolution waveform capture: triggered manually or by alarm, captured waveforms available directly from the meter via FTP in a COMTRADE format.
 - Disturbance detection and capture: sag/swell on any current and voltage channel, alarm on disturbance event, waveform capture with pre-event information.
 - Patented Disturbance Direction Detection: provides indication of the captured disturbance occurring upstream or downstream of the meter; timestamped results provided in the event log, with degree of certainty of disturbance direction.

- Used with Schneider Electric's sophisticated software tools, provides detailed PQ reporting across entire network:
 - EN 50160 report.
 - IEC 61000-4-30 report.
 - IEEE 519 harmonic compliance report.
 - PQ compliance summary.
 - Display of waveforms and PQ data from all connected meters.
 - Onboard web-based waveform viewer.
 - Energy reports for consumption analysis and cost management.
 - WAGES dashboards and reports.
 - EcoStruxure™ Power Events Analysis, including alarm management, sequence of events, and root cause analysis.

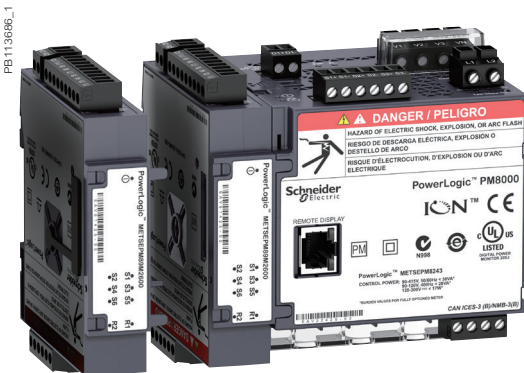
- Cybersecurity:
 - Security events logging with Syslog protocol support.
 - HTTPS secure protocol.
 - Ability to enable or disable any communication port and any protocol per port.
 - Anti-tamper protection seals and hardware metrology lock.
 - User accounts with strong passwords.

- Data and event logging:
 - Onboard data and event logging.
 - 512 MB of standard non-volatile memory.

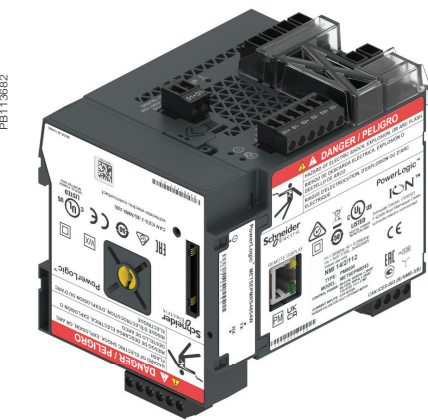
PM8000 series



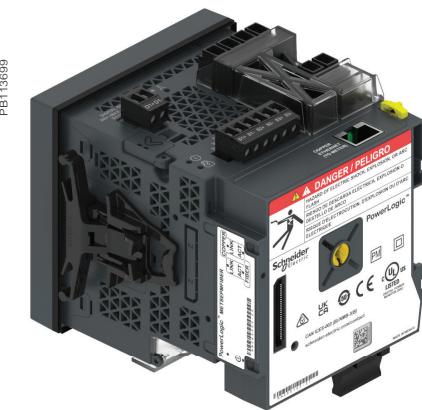
PowerLogic™ PM8000 series meter with remote display



PowerLogic™ PM8000 series meter with option modules



PowerLogic™ PM8000 series with RS-485 4-Wire module



PowerLogic™ PM8000 series with Fiber-Ethernet Module

Main characteristics (contd.)

- No data gaps due to network outages or server downtime.
- Min/Max log for standard values.
- 50 user-definable data logs, recording up to 16 parameters on a cycle-by-cycle or other user definable interval.
- Continuous logging or 'snapshot' triggered by setpoint and stopped after defined duration.
- Trend energy, demand and other measured parameters.
- Forecasting via web pages: average, minimum and maximum for the next four hours and next four days.
- Advanced time-of-use capability.
- Security / event log: alarm conditions, metering configuration changes, power outages, firmware download, and user login/logout all timestamped to ±1 millisecond.

- Alarming and control:

- 50+ definable alarms to log critical event data, trigger waveform recording, or perform control function.
- Trigger on any condition, with 1/2-cycle and 1-second response time.
- Combine alarms using Boolean logic and to create alarm levels.
- Alarm notification via email.
- In conjunction with Schneider Electric's EcoStruxure™ software, alarms, software alarms, and alarm frequency are categorized and trended enabling sequence of events and root cause analyses.

Usability

- Easy installation and setup:

- Panel and DIN rail mounting options, remote display option.
- Pluggable connectors.
- Free setup application simplifies meter configuration.
- Auto-discovery using DPWS (Device Profile Web Services).
- DHCP for automatic IP address configuration.

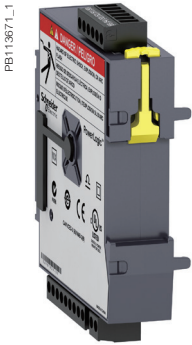
- Front panel:

- Easy to read color graphic display.
- Simple, intuitive menu navigation with multi-language (8) support.

- Flexible remote communications:

- Multiple simultaneously operating communication ports and protocols allow interfacing with other automation systems; (e.g. waveforms, alarms, billing data, etc.) can be uploaded for viewing/analysis while other systems access real-time information.
- Supports Modbus, ION, DNP3, IEC 61850.
- Dual port Ethernet: 10/100BASE-TX; supports IPV4 and IPV6; daisy-chaining capability removes need for additional switches.
- Fiber-Ethernet option module: Multi-mode 100Base-FX with SC duplex connector
- Secure web interface with HTTPS and TLS 1.2 with support for user-provided certificates.
- Create redundant network loop using Rapid Spanning Tree Protocol (RSTP) and managed Ethernet switches.
- Customize TCP/IP port numbers and enable/disable individual ports.
- RS-485 2-wire connection, up to 115,200 baud, Modbus RTU, ION and DNP3 protocols.
- 4-Wire RS-485 option module: Up to 115,200 baud, Modbus RTU, ION and DNP3 protocols.
- Ethernet to serial gateway with Modbus Master functionality, connecting to 31 downstream serial Modbus devices. Also supports Modbus Mastering over TCP/IP (Ethernet) network.
- Full function web server with factory and customizable pages to access real-time and PQ compliance data.

PM8000 series



PowerLogic™ I/O module

- Time synchronization via:
 - GPS clock (RS-485) or IRIG-B (digital input) to ±1 millisecond.
 - Network Time Protocol (NTP/SNTP).
 - Precision Time Protocol (PTP - IEEE 1588 / IEC 61588).
 - Time set function from Schneider Electric software server.

Adaptability

- ION™ frameworks are customizable, scalable applications with object-oriented programming that compartmentalizes functions, and increases flexibility and adaptability.
- Applications include: accessing and aggregating data from downstream Modbus devices over serial or across the network (Modbus TCP/IP), logging and/or processing data through totalization, unit conversion or other calculations, applying complex logic for alarming or control operations, and visualization via webpages.

Standard meter I/O

- 3 digital status/counter inputs.
- 1 KY (form A) energy pulse output for interfacing with other systems.

Advanced Metering Option Modules

- Expanding meter's flexibility with communication and I/O option modules
- Powered from meter base

I/O Expansion Option Modules

Option modules include:

- Digital module:
 - 6 digital status/counter inputs.
 - 2 Form C relay outputs, 250 V, 8 A.
- Analog module:
 - 4 analog inputs (4-20 mA; 0-20 mA; 0-30 V).
 - 2 analog outputs (4-20 mA; 0-20 mA; 0-10 V) for interfacing with building management sensors and systems.

Communication Option Modules

Option modules include:

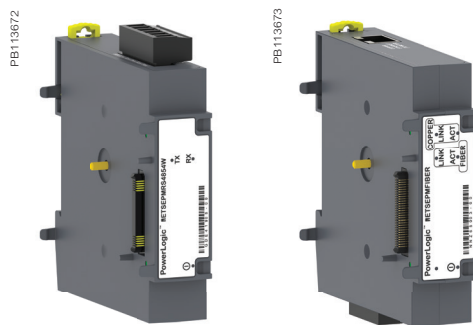
- 4-Wire RS-485 Module ⁽⁺¹⁾:
 - Adds 4-wire support to the meter i.e. eliminating the cost and efforts of rewiring while replacing/retrofitting legacy 4-Wire RS-485 systems
 - Pluggable screw terminal connector
- Fiber-Ethernet Module ⁽⁺²⁾:
 - Provides isolated data transmission through fiber optics up to 2000 m length
 - Supports multi-mode 100Base-FX type
 - SC duplex connector

⁽⁺¹⁾ Onboard 2-Wire RS-485 port is disabled with the optional module.

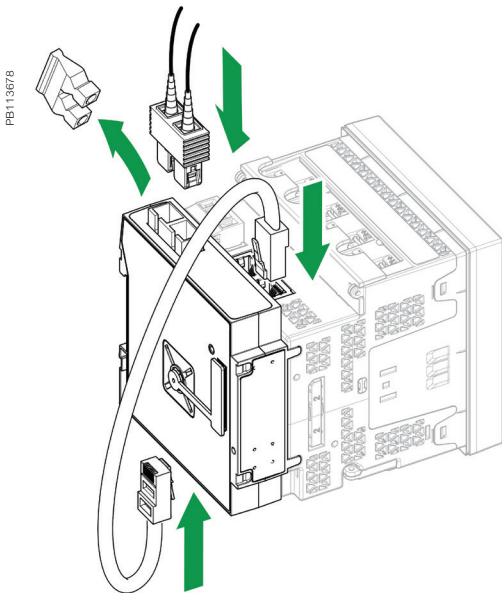
⁽⁺²⁾ Connected to the meter base using Ethernet patch cable (included with the module)

Maximum of 4 optional modules in total (Fiber-Ethernet, 4-Wires RS-485, I/O modules) can be connected to the meter. Only 1 Fiber-Ethernet and 1 4-Wire RS-485 option module is supported per meter.

Please refer to the option module **Installation Guides** for more details.



4-Wire RS-485 Option Module Fiber-Ethernet Option Module



PowerLogic™ PM8000 connection with Fiber-Ethernet module

PM8000 series

Feature selection

Commercial reference number	Description
METSEPM8240	96 x 96 panel mount meter, AC/DC power.
METSEPM8210	96 x 96 panel mount meter, LV DC power.
METSEPM8243	DIN rail mount meter, AC/DC power.
METSEPM8213	DIN rail mount meter, LV DC power.
METSEPM8244	DIN rail mount meter with remote display, AC/DC power.
METSEPM8214	DIN rail mount meter with remote display, LV DC power.
METSEPM82401	MID approved panel mount meter.
METSEPM82403	RMICAN approved panel mount meter.
METSEPM82404	RMICAN sealed panel mount meter.
Accessories	Description
METSEPM89RD96	Remote display, 3 metre cable, mounting hardware for 30 mm hole (nut & centering pin), mounting hardware for DIN96 cutout (92 x 92 mm) adapter plate
METSEPM89M2600	Digital I/O module (6 digital inputs & 2 relay outputs)
METSEPM89M0024	Analog I/O module (4 analog inputs & 2 analog outputs)
METSEPM8HWK	Replacement hardware kit (connectors, screws, retainer clips, mounting template)
METSEPMRS4854W	4-Wire RS 485 option module
METSEPMFIBER	Fiber-Ethernet option module
METSEPM8000SK	Sealing kit

Feature guide

General		
Use on LV, MV, and HV systems		■
Current accuracy		0.1 % reading
Voltage accuracy		0.1 % reading
Active energy accuracy		0.2 Class
Number of samples/cycle or sample frequency		256
Instantaneous rms values		
Current, voltage, frequency		■
Active, reactive, apparent power	Total and per phase	■
Power factor	Total and per phase	■
Current measurement range (auto ranging)		0.05 - 10 A
Energy values		
Active, reactive, apparent energy		■
Settable accumulation modes		■
Demand values		
Current	Present and max. values	■
Active, reactive, apparent power	Present and max. values	■
Predicted active, reactive, apparent power		■
Synchronization of the measurement window		■
Setting of calculation mode	Block, sliding	■
Power quality measurements		
Harmonic distortion	Current and voltage	■
Individual harmonics	Via front panel and web page	63
	Via EcoStruxure™ software	127
Waveform capture		■
Detection of voltage swells and sags		■
Fast acquisition	1/2 cycle data	■
EN 50160 compliance checking		■
IEEE 519 compliance checking		■
Customizable data outputs (using logic and math functions)		■
Data recording		
Min/max of instantaneous values		■
Data logs		■
Event logs		■
Trending/forecasting		■
SER (Sequence of event recording)		■
Time stamping		■
GPS synchronization (+/- 1 ms)		■
Memory (in Mbytes)		512
Display and I/O		
Front panel display		■
Wiring self-test		■
Pulse output		1
Digital or analog inputs(max)		27 digital 16 analog
Digital or analog outputs (max, including pulse output)		1 digital 8 relay 8 analog
Communication		
2-Wire RS-485 port		1
Ethernet port		2
Serial port (Modbus, ION, DNP3)		■
Ethernet port (Modbus/TCP, ION TCP, DNP3 TCP, DHCP, DNS, IPv4, IPv6, IEC 61850)		■
Ethernet gateway		■
Alarm notification via email		■
HTTP/HTTPS web server with waveform viewer		■
SNMP with custom MIB and traps for alarms		■
SMTP email		■
PTP and NTP time synchronization		■
FTP file transfer		■
Option module with 4-Wire RS-485 port		■
Option module with Fiber-Ethernet port		■

PM8000 series

Technical specifications

Electrical characteristics		
Type of measurement		True rms to 256 samples per cycle
Measurement accuracy	Current & voltage	Class 0.2 as per IEC 61557-12
	Active Power	Class 0.2 as per IEC 61557-12
	Power factor	Class 0.5 as per IEC 61557-12
	Frequency	Class 0.02 as per IEC 61557-12
	Active energy	Class 0.2S IEC 62053-22 Class 0.2 IEC 61557-12, ANSI C12.20 Class 0.2
	Reactive Energy	Class 0.5S IEC 62053-24*
	MID Directive	EN 50470-1, EN 50470-1, AnnexB & AnnexD (optional model)
Display refresh rate		1/2 cycle or 1 second
Input-voltage characteristics	Specified accuracy voltage	57 - 400 V L-N / 100 - 690 V L-L
	Impedance	5 M Ω per phase
	Specified accuracy frequency - Frequency	42 to 69 Hz (50/60 Hz nominal)
	Limit range of operation - frequency	20 to 450 Hz
Input-current characteristics	Rated nominal current	1 A (0.2S), 5 A (0.2S) , 10 A (0.2 ANSI)
	Specified accuracy current range	Starting Current: 5 mA Accurate Range: 50 mA - 10 A
	Permissible overload	200 A rms for 0.5s, non-recurring
	Impedance	0.0003 Ω per phase
	Burden	0.01 VA max at 5 A
Power supply AC/DC	AC	90-415 V AC \pm 10 % (50/60 Hz \pm 10 %) 90-120 V AC \pm 10% (400 Hz)
	DC	110-415 V DC \pm 15 % (20-60 V DC \pm 10 % for PM8210)
	Ride-through time	100 ms (6 cycles at 60 Hz) min., any condition 200 ms (12 cycles at 60 Hz) typ., 120 V AC 500 ms (30 cycles at 60 Hz) typ., 415 V AC
	Burden	Typical: 7.7 W / 16 VA at 230 V (50/60 Hz) Fully optioned: max. 18 W / 40 VA at 415 V (50/60 Hz)
Power supply LV DC	DC	20 to 60 V DC \pm 10 %
	Burden	Fully optioned: max. 18 W at 18 to 60 V DC
Input/outputs	Meter Base Only	3 digital inputs (30 V AC/60 V DC) 1 form A (KY) solid state digital output (30 V AC/60 V DC, 75 mA)
	Optional	Digital - 6 digital inputs (30 V AC / 60 V DC) wetted + 2 form C relay outputs (250 V AC, 8 A)
		Analog - 4 analog inputs (4-20 mA, 0-30 V DC) + 2 analog outputs (4-20 mA, 0-10 V DC)
Mechanical characteristics		
Weight		Integrated Display Model 0.581 kg DIN rail mounted Model 0.528 kg IO modules 0.140 kg Remote display 0.300 kg
IP degree of protection		IP 54, UL type 12: Panel mount and Remote display, front IP 30: Panel mount rear, DIN rail mount, I/O modules
Excellent quality		ISO 9001 and ISO 14000 certified manufacturing
Dimensions	Panel mount model	96 x 96 x 77.5 mm
	DIN model	90.5 x 90.5 x 90.8 mm
	Remote display	96 x 96 x 27 mm
	IO modules	90.5 x 90.5 x 22 mm

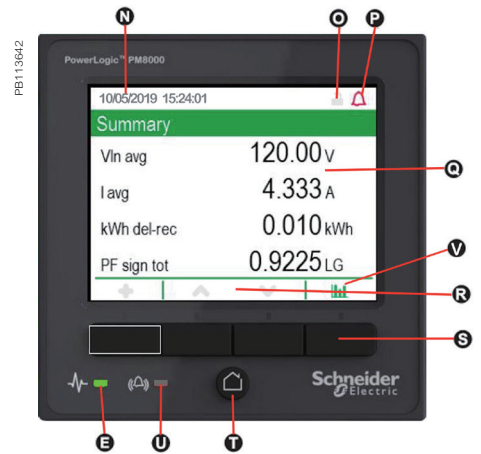
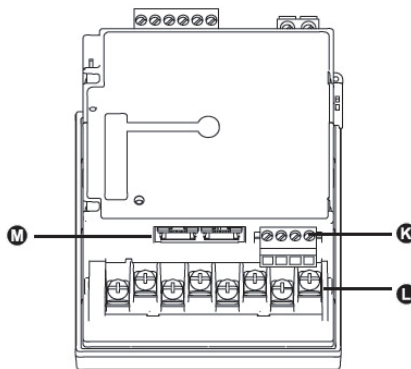
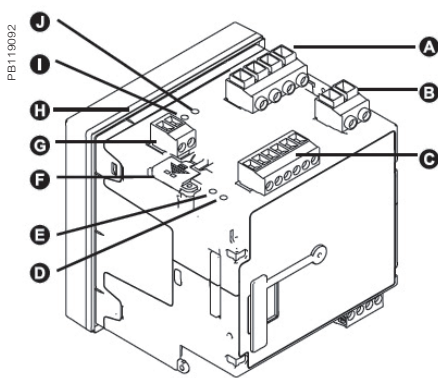
PM8000 series

Environmental conditions	
Operating temperature	-25 °C to 70 °C
Remote Display Unit	-25 °C to 60 °C
Storage temperature	-40 °C to 85 °C
Humidity rating	5 % to 95 % non-condensing
Installation category	III
Operating altitude (maximum)	3000 m above sea-level
Electromagnetic compatibility	
EMC standards	IEC 62052-11 and IEC 61326-1
Immunity to electrostatic discharge	IEC 61000-4-2
Immunity to radiated fields	IEC 61000-4-3
Immunity to fast transients	IEC 61000-4-4
Immunity to surges	IEC 61000-4-5
Immunity to conducted disturbances	IEC 61000-4-6
Immunity to power frequency magnetic fields	IEC 61000-4-8
Immunity to conducted disturbances, 2-150kHz	CLC/TR 50579
Immunity to voltage dips & interruptions	IEC 61000-4-11
Immunity to ring waves	IEC 61000-4-12
Conducted and radiated emissions	EN 55022, EN 55011, FCC part 15 Class B, EN55011, EN55022 Class B, ICES-003 Class B
Surge withstand Capability (SWC)	IEEE / ANSI C37.90.1
Safety	
Safety Construction	IEC/EN 61010-1 ed.3, CAT III, 400 V L-N / 690 V L-L UL 61010-1 ed.3 and CSA-C22.2 No. 61010-1 ed.3, CAT III, 347 V L-N / 600 V L-L IEC/EN 62052-11, protective class II
Communication	
Ethernet to serial line gateway	Communicates directly with up to 31 unit load devices
Web server	Customisable pages, new page creation capabilities, HTML/XML compatible
Serial port RS-485	Baud rates of 2400 to 115200, pluggable screw terminal connector
Ethernet port(s)	2x 10/100BASE-TX, RJ45 connector (UTP)
Protocol	Modbus, ION, DNP3, IEC 61850, HTTPS, FTP, SNMP, SMTP, DPWS, RSTP, NTP, PTR, NTP/SNTP, GPS, IPv4 /IPv6, DHCP, Syslog protocols
Communication Option Modules	
Optional 4-Wire RS-485 serial port	Baud rates of 2400 to 115200, pluggable screw terminal connector
Optional Fiber-Ethernet port	Ethernet patch cable from base meter, multi-mode 100Base-FX, SC duplex connector
Firmware characteristics	
High-speed data recording	Down to 1/2 cycle interval burst recording, stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment
Harmonic distortion	Up to 63rd harmonic (127th via Schneider Electric software) for all voltage and current inputs
Sag/swell detection	Analyse severity/potential impact of sags and swells: magnitude and duration data suitable for plotting on voltage tolerance curves per phase triggers for waveform recording, control
Disturbance direction detection	Determine the location of a disturbance more quickly and accurately by determining the direction of the disturbance relative to the meter. Analysis results are captured in the event log, along with a timestamp and confidence level indicating level of certainty
Instantaneous	High accuracy of standard speed (1s) and high-speed (1/2 cycle) measurements, including true rms per phase and total for: voltage, current, active power (kW), reactive power (kvar), apparent power (kVA), power factor, frequency, voltage and current unbalance, phase reversal
Load profiling	Channel assignments (800 channels via 50 data recorders) configurable for any measurable parameter, including historical trend recording of energy, demand, voltage, current, power quality, or any measured parameter. Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually
Trend curves	Historical trends and future forecasts to better manage demand, circuit loading, and other parameters. Provides average, min, max and standard deviation every hour for last 24 hours, every day for last month, every week for last 8 weeks and every month for last 12 months
Waveform captures	Simultaneous capture of all voltage and current channels, sub-cycle disturbance capture, ability to record from 210 cycles at 256 sample per cycle to over 2880 cycles at 16 points per cycle with user selectable sampling speed as well as pre- and post-trigger length
Alarms	Threshold alarms: adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm, user-defined or automatic alarm threshold settings, user-defined priority levels (optional automatic alarm setting)
Advanced Time of Use (TOU)	6 seasons; 3 different day types: weekend, weekday, and holiday; up to 8 tariffs per day type

PM8000 series

Firmware characteristics (contd.)	
Advanced security	Up to 50 users with unique access rights. Perform resets, time sync, or meter configurations based on user privileges
Memory	512 MB
Firmware update	Update via the communication ports
Display characteristics	
Integrated or Remote display	320 x 240 (1/4 VGA) Color LCD, configurable screens , 5 buttons and 2 LED indicators (alarm and meter status)
Languages	English, French, Spanish, Russian, Portuguese, German, Italian, Chinese
Notations	IEC, IEEE
The HMI menu includes	
Alarms	Active alarms, historic alarms (50+ alarms)
Basic Reading	Voltage, current, frequency, power summary
Power	Power summary, demand, power factor
Energy	Energy total, delivered, received
Events	Timestamped verbose event log
Power Quality	EN 50160, IEEE 519, harmonics, phasor diagrams
Inputs/Outputs	Digital inputs, digital outputs, analog inputs, analog outputs
Nameplate	Model, serial and FW version
Custom Screens	Build your own metrics
Setup Menu	Meter setup, communications setup, display setup, date/time/clock setup, alarm setup, language setup, time of use setup, resets, password setup

PM8000 series parts



- A** Voltage inputs
- B** Control power
- C** Digital inputs
- D** Revenue lock LED (green)
- E** Status LED (green/red)
- F** Revenue lock switch
- G** Digital output
- H** Sealing gasket
- I** Infrared energy pulsing LED
- J** Energy pulsing LED
- K** RS-485
- L** Current inputs
- M** Ethernet (2)
- N** Date/time
- O** Revenue lock icon
- P** Alarm icon
- Q** Display
- R** Navigation icons
 - ▲ Up
 - ▼ Down
 - ✓ Select
 - ✕ Cancel
 - ⚙ Edit
 - ⊕ More
- S** Navigation buttons
- T** Home button
- U** Alarm LED (red)
- V** Bar graph