

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
- 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
- Monitor equipment and network status
- BACnet/IP protocol support



METSEPM5100

The solution for

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

- Buildings
- Industry
- Healthcare
- Data Centre 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

End users' benefit

- Ease of use
- Precision metering & sub-billing
- Billing flexibility
- Comprehensive, consistent and superior performance

Competitive advantages

- Easy to install and operate
- Easy for circuit breaker monitoring and control
- Direct metering of neutral circuit and calculated ground current value to avoid overload and resulting outage (PM556x)
- Power quality analysis
- Load management combined with alarm and timestamping
- High performance and accuracy
- MID ready compliance for legal billing application
- BACnet/IP protocol support

Power management solutions

Schneider Electric provides innovative power management solutions to increase your energy efficiency and cost savings, maximise electrical network reliability and availability, and optimise electrical asset performance. See Page 114

Conformity of standards

- IEC 61557-12
- IEC 61010-1
- IEC 62053-22
- IEC 61326-1
- IEC 62053-24
- CISPR22
- EN 50470-1
- Class B
- EN 50470-3

PM5000 series

PM5000 series feature selection

	PM5100		PM5300				PM5500		
	PM5100	PM5110	PM5310	PM5320	PM5330	PM5340	PM5560	PM5563	PM5563RD
Installation									
Fast installation, panel mount with integrated display	■	■	■	■	■	■	■	–	–
Fast installation, DIN rail mountable	–	–	–	–	–	–	–	■	■
Accuracy	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	CL 0.5S	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-phase voltage, current, power, demand, energy, frequency, power factor	■	■	■	■	■	■	■	■	■
Multi-tariff	–	–	4	4	4	4	8	8	8
Power quality analysis									
THD, thd, TDD	■	■	■	■	■	■	■	■	■
Harmonics, individual (odd) up to	15th	15th	31st	31st	31st	31st	63rd	63rd	63rd
I/Os and relays									
I/Os	1DO	1DO	2DI/2DO	2DI/2DO	2DI/2DO	2DI/2DO	4DI/2DO	4DI/2DO	4DI/2DO
Relays	0	0	0	0	2	2	0	0	0
Alarms and control									
Alarms	33	33	35	35	35	35	52	52	52
Set point response time, seconds	1	1	1	1	1	1	1	1	1
Single and multi-condition alarms	–	–	■	■	■	■	■	■	■
Boolean alarm logic	–	–	–	–	–	–	■	■	■
Memory for data logging			256KB	256KB	256KB	256KB	1.1 MB	1.1 MB	1.1 MB
Communications									
Serial ports with modbus protocol	–	1	1	–	1	–	1	1	1
Ethernet port with Modbus TCP protocol	–	–	–	1	–	1	2★★	2★★	2★★
BACnet/IP protocol	–	–	–	■	–	■	■	■	■
Onboard web server with web pages	–	–	–	–	–	–	■	■	■
Serial to Ethernet gateway	–	–	–	–	–	–	■	■	■
MID ready compliance, EN50470-1/3, Annex B and Annex D Class C	–	PM5111 METSEPM5111	–	–	PM5331 METSEPM5331	PM5341 METSEPM5341	PM5561 METSEPM5561	PM5561 METSEPM5561	PM5561
Short reference numbers	PM5100	PM5110	PM5310	PM5320	PM5330	PM5340	PM5560	PM5563	PM5563RD
Commercial reference numbers	METSEPM5100	METSEPM5110	METSEPM5310	METSEPM5320	METSEPM5330	METSEPM5340	METSEPM5560	METSEPM5563	

★★ 2 Ethernet ports for daisy chain, one IP address

Other related products

Commercial reference numbers	Description
METSEPM5563RD	PM5563 meter with remote display
METSEPM5RD	Remote display for PM5563
METSEPM51HK	Hardware kit for PM51xx
METSEPM53HK	Hardware kit for PM53xx
METSEPM51_3RSK	Revenue sealing kit for PM51XX & PM53XX
METSEPM55RSK	Revenue sealing kit for PM55XX
METSEPM55HK	Hardware kit for PM55xx
METSEPM5CAB3	Remote Display cable

See your Schneider Electric representative for complete ordering information.

PM5000 series

PM5000 technical specifications

		PM5100	PM5300	PM5500
Use on LV and MV systems			■	
Basic metering with THD and min/max readings			■	
Instantaneous rms values				
Current	per phase, neutral and ground (PM5500)		■	
Voltage	Total, per phase L-L and L-N		■	
Frequency			■	
Real, reactive, and apparent power	Total and per phase		Signed, Four Quadrant	
True Power Factor	Total and per phase		Signed, Four Quadrant	
Displacement PF	Total 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 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 calculation for Pulse input (WAGES)				■
Other measurements				
I/O timer			■	
Operating timer			■	
Load timer			■	
Alarm counters and alarm logs			■	
Power quality measurements				
THD, thd (Total Harmonic Distortion) I, VLN, VLL			I, VLN, VLL	
TDD (Total Demand Distortion)			■	
Individual harmonics (odds)		15th	31st	63rd
Neutral Current metering with ground current calculation				■
Data recording				
Min/max of instantaneous values, plus phase identification★			■	
Alarms with 1s timestamping★			■	
Data logging			2 fixed parameters kWh and kWh with configurable interval and duration (e.g. 2 parameters for 60 days at 15 minutes interval)	Up to 14 selectable parameters with configurable interval and duration (e.g. 6 parameters for 90 days at 15 minutes interval)
Memory capacity			256 kB	1.1 MB
Min/max log		■	■	■
Maintenance, alarm and event logs			■	■
Customisable data logs				■

★Stored in non-volatile memory

PM5000 series

PM5000 technical specifications

		PM5100	PM5300	PM5500	
Inputs / Outputs / Mechanical Relays					
Digital inputs			2 (SI1, SI2)	4 (SI1, SI2, SI3, SI4) with WAGES support	
Digital outputs		1 (kWh only)	2 (configurable)	2 (configurable)	
Form A Relay outputs			2		
Timestamp resolution in seconds		1	1	1	
Whetting voltage			■		
Type of measurement: True rms on three-phase (3R, 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 0.2S as per IEC 62053-22	
	Reactive Energy	Class 2S as per IEC 62053-24		Class 1S as per IEC 62053-24	
	Active Energy	±0.5%		±0.2%	
	Reactive Energy	±2%		±1%	
	Active Power	Class 0.5 as per IEC 61557-12		Class 0.2 as per IEC 61557-12	
	Apparent Power	Class 0.5 as per IEC 61557-12			
	Current, Phase	Class 0.5 as per IEC 61557-12		±0.15%	
	Voltage, L-N	Class 0.5 as per IEC 61557-12		±0.1%	
	Frequency	±0.05%			
	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 M Ω			
F nom		50 or 60 Hz ±5%		50 or 60 Hz ±10%	
Input-current (configurable for 1 or 5 A secondary CTs)	I nom	5 A			
	Measured Amps with over range and Crest Factor	Starting current: 5 mA Operating range: 50 mA to 8.5 A		Starting current: 5m A Operating range: 50 mA to 10 A	
	Withstand	Continuous 20 A, 10 s/hr 50 A, 1s/hr 500 A			
	Impedance	< 0.3 mΩ			
	F nom	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	80 mS typical at 120V AC and maximum burden. 100 mS typical at 230 V AC and maximum burden 100 mS typical at 415 V AC and maximum burden		35 ms typical at 120 V L-N and maximum burden 129 ms typical at 230 V L-N and maximum burden	
DC control power	Operating range	125-250 V DC ±20%			
	Burden	<4 W at 250 V DC		typical 3.1W at 125 V DC, max. 5W	
	Ride-through time	50 mS typical at 125 V DC and maximum burden			

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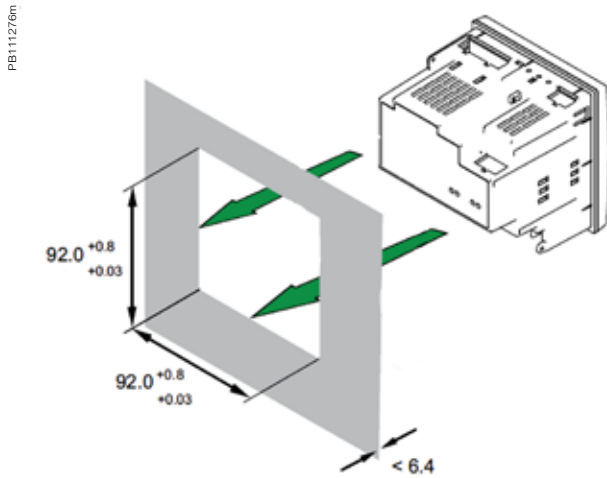
PM5000 technical specifications

		PM5100	PM5300	PM5500
Relay	Max output frequency		0.5 Hz maximum (1 second ON / 1 second OFF - min times)	
	Switching current		250 V AC at 8.0 Amps, 25 k cycles, resistive 30 V DC at 2.0 Amps, 75 k cycles, resistive 30 V DC at 5.0 Amps, 12.5 k cycles, resistive	
	Isolation		2.5 kV rms	
Outputs	Digital outputs	1	2	2
	Max load voltage	40 V DC		30 V AC / 60 V DC
	Max load current	20 mA		125 mA
	On Resistance	50 Ω max		8 Ω
	Meter constant	from 1 to 9,999,999 pulses per kWh		
	Pulse width for Digital Output	50% duty cycle		
	Pulse frequency for Digital Output	25 Hz max.		
	Leakage current	0.03 micro Amps		1 micro Amps
	Isolation	5 kV rms		2.5 kV rms
	Optical outputs	Pulse width (LED)	200 ms	
Pulse frequency		50 Hz. max.		2.5 kHz. max
Meter constant		from 1 to 9,999,999 pulses per k_h		
Status Inputs	ON Voltage		18.5 to 36 V DC	30 V AC / 60 V DC max
	OFF Voltage		0 to 4 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
	Wetting output		24 V DC/ 8 mA max	
	Input Burden		2mA @24V DC	2 mA @ 24 V AC/DC
Mechanical characteristics				
Product weight		380 g	430 g	450 g
IP degree of protection (IEC 60529)		IP52 front display, IP30 meter body		
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		
Environmental characteristics				
Operating temperature	Meter	-25 °C to 70 °C		
	Display (Display functions to -25° with reduced performance)	-25 °C to 70 °C		
Storage temp.		-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

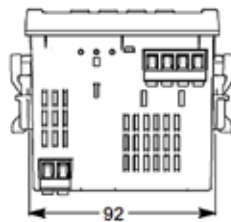
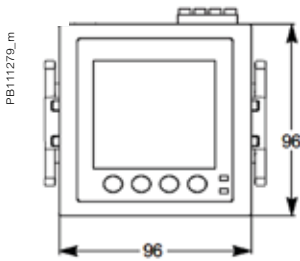
PM5000 technical specifications

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 150kHz to 80MHz	IEC 61000-4-6		
Immunity to magnetic fields	IEC 61000-4-8		
Immunity to voltage dips	IEC 61000-4-11		
Radiated emissions	FCC part 15, EN 55022 Class B		
Conducted emissions	FCC part 15, EN 55022 Class B		
Safety	PM5100	PM5300	PM5500
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 (3rd Edition)		
Measurement category (Voltage and Current inputs)	CAT III up to 400 V L-N / 690 V L-L		
Dielectric	As per IEC/UL 61010-1 Ed. 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)
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		
Backlight	White LED		
Viewable area (W x H)	67 x 62.5 mm		
Keypad	4-button		
Indicator Heartbeat / Comm activity	Green LED		
Energy pulse output / Active alarm (configurable)	Optical, amber LED		
	Wavelength	590 to 635 nm	
	Maximum pulse rate	2.5 kHz	
Commercial ref. numbers	Description		
METSEPM5100	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, no communication, 1DO		
METSEPM5110	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, RS-485 Modbus, 1DO		
METSEPM5111	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 15th harmonic, RS-485 Modbus, 1DO, MID cert.		
METSEPM5310	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO		
METSEPM5320	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO		
METSEPM5330	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO, 2Relay		
METSEPM5331	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, RS-485 Modbus, 2DI/2DO, 2Relay, MID cert.		
METSEPM5340	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO, 2Relay		
METSEPM5341	Power Meter range 72 mm depth, control power to 415 V AC, CI 0.5S, 31st harmonic, 256 kB, Ethernet, 2DI/2DO, 2Relay, MID cert.		
METSEPM5560	Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, 4DI/2DO		
METSEPM5561	Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, Modbus and Ethernet, MID cert.		
METSEPM5562	Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, RMICAN approved, HW lockable, 4DI/2DO		
METSEPM5562MCO	Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, RMICAN approved, factory sealed, 4DI/2DO		
METSEPM5563	Power Meter range 77 mm depth, control power to 480 V AC, CI 0.2S, 63rd harmonic, 1.1 MB, DIN mount, no display, 4DI/2DO		

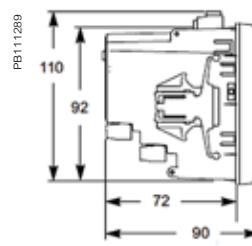
PM5000 Series meter flush mounting



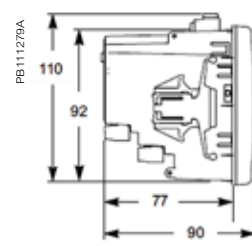
PM5000 series meter dimensions



PM5000



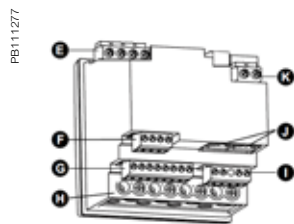
PM5100 / PM5300



PM5500

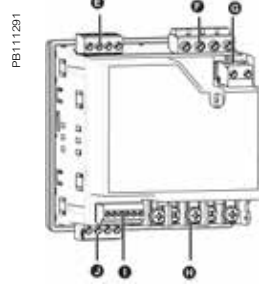


- PM5000 meter parts**
- A Menu selection buttons
 - B LED indicators
 - C Navigation or menu selections
 - D Maintenance and alarm notification area



PM5500

- PM5500 meter parts**
- E Voltage inputs
 - F RS-485 comms
 - G Digital inputs
 - H Current inputs
 - I Digital outputs
 - J Ethernet ports
 - K Control power



- PM5100 / PM5300 meter parts**
- E Relay output (PM5300 only)
 - F Voltage inputs
 - G Control power
 - H Current inputs
 - I Status inputs/digital outputs
 - J Communications port: Ethernet (PM5300 only) or RS-485

Please see the appropriate Installation Guide for accurate and complete information on the installation of this product.