

Power Meter Series PM200

Functions and characteristics

PE60156



The PowerLogic PM200 series power meter is an easy-to-use, cost effective meter that offers the basic measurement capabilities required to monitor an electrical installation. The compact 96 x 96 mm meter simultaneously monitors all three phases of voltage and current. Energy and demand readings provide the information needed to measure and control energy costs.

The meter includes an easy-to-read, anti-glare, back-lit LCD display. It features an intuitive interface with context-based navigational menus. Summary screens and bar charts provide system status at a glance. The default screen displays real energy and per-phase current values. The energy summary screen displays total real, reactive, and apparent energy. The power demand summary screen displays real, reactive, and apparent demand. The current demand summary screen provides the per-phase and peak values needed to understand circuit performance and loading.

The PowerLogic PM200 series power meter is available in three versions:

- PM200, basic version
- PM200P, basic version plus two pulse outputs for energy metering
- PM210, basic version plus an RS485 port for Modbus communication.

Applications

OEM applications.
Panel instrumentation.
Applications with space restrictions.
Remote monitoring of an electrical installation.
Sub-billing / cost allocation / utility billing verification.
Cost constrained applications.

Characteristics

Compact

With a mounting depth of only 50 mm, the PM200 series is the perfect space saver.

Large, easy-to-read display

Summary screens for current, voltage, energy and demand on an anti-glare, green back-light display.

Bar charts

Graphical representation of system loading and Outputs (PM200P) provide system status at a glance.

Easy to operate

Intuitive navigation with context-based menus for easy use.

Modbus communications and digital outputs

The PM210 provides standard Modbus communications. The PM200P provides two integrated digital outputs.

IEC 62053-21 Class 1 for real energy

Accurate measurement for sub-billing and cost allocation.

IEC 61557-12 performance standards

Meets IEC 61557-12 PMD/S-/K55/1 requirements for combined Performance Measuring and monitoring Devices (PMD).

Direct connection for metering voltage inputs

No external PTs needed for voltages up to 480 V AC (L-L).

Easy to install

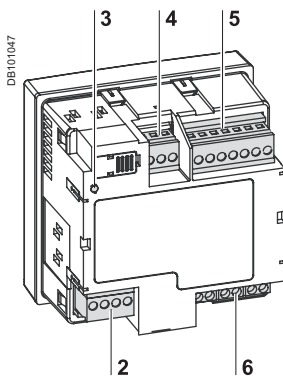
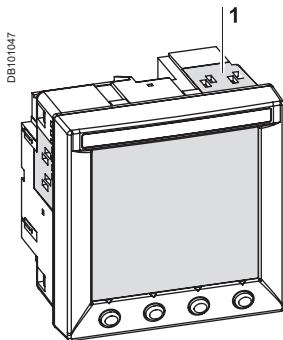
Uses only two clips. No tools needed.

Part numbers

Description	Schneider Electric
Power Meter with Integrated Display	
Power Meter PM200 with basic readings, demand, and summary screens	PM200MG
Same as PM200 plus two digital outputs	PM200PMG
Same as PM200 plus an RS485 communication port	PM210MG
Parts and accessories	
DIN-rail Mounting Kit	PM72DINRAILKIT
Set of connectors	PM7AND2HWKIT

Power Meter Series PM200

Functions and characteristics (cont.)



PM200 series power meter.

- 1 Mounting slots.
- 2 RS485 communications (PM210) or 2 pulse outputs (PM200P).
- 3 Heartbeat LED.
- 4 Power supply.
- 5 Voltage inputs.
- 6 Current inputs.

Meter selection guide		PM200	PM200P	PM210
General				
Use from LV to HV power systems		■	■	■
Current and voltage accuracy		0.5 %	0.5 %	0.5 %
Active and reactive power accuracy		1 %	1 %	1 %
Active energy accuracy		1 %	1 %	1 %
Reactive energy accuracy		2 %	2 %	2 %
Sampling rate (samples/cycle)		32	32	32
Instantaneous rms values				
Current	Per-phase	■	■	■
Voltage	Ph-Ph and Ph-N	■	■	■
Frequency		■	■	■
Active and reactive power ; and apparent power	Total	signed ⁽¹⁾	signed ⁽¹⁾	signed ⁽¹⁾
Power factor	Total	signed ⁽²⁾	signed ⁽²⁾	signed ⁽²⁾
Energy values				
Active, reactive, apparent energy	Total	signed ⁽¹⁾	signed ⁽¹⁾	signed ⁽¹⁾
Demand values				
Current (thermal calculation mode only)	Present and max. values	■	■	■
Active, reactive, apparent power	Present and max. values	■	■	■
Setting of power demand calculation mode	Sliding, fixed, rolling block	■	■	■
Inputs and outputs				
Digital pulse output		-	2 ⁽³⁾	-
Display and outputs				
Green backlit LCD display		■	■	■
IEC or IEEE menu mode		■	■	■
Communication				
RS485 (one port)		-	-	2-wire
Modbus protocol		-	-	■

(1) Real and reactive power and energy. The power meter includes net values only.

(2) See register 4048. Negative sign "-" indicates lag. PM210 only.

(3) kWh and kVARh pulse output mode only.

Power Meter Series PM200

Functions and characteristics (cont.)



Rear view of PowerLogic PM200 series meter.

Electrical characteristics

Type of measurement	True rms up to the 15 th harmonic on single, two or three-phase (3P, 3P + N) AC systems 32 samples per cycle	
Measurement accuracy	Current	± 0.5% from 1 A to 6 A
	Voltage	± 0.5% from 50 V to 277 V
	Power factor	± 0.031, from 1A to 6A and from -0.5 to +0.5
	Power	± 1%
	Frequency	± 0.02 Hz from 45 to 65 Hz
	Active energy	IEC 62053-21 Class 1
	Reactive energy	IEC 62053-23 Class 2
Data update rate	1 s	
Input-voltage	Measured voltage	10 to 480 V AC (direct Ph-Ph) 10 to 277 V AC (direct Ph-N) 0 to 1.6 MV AC (with external VT)
	Metering over-range	1.2 Un
	Impedance	2 MΩ (Ph-Ph) / 1 MΩ (Ph-N)
	Frequency range	45 to 65 Hz
Input-current	CT ratings	Primary Adjustable from 5 A to 32767 A
	Secondary	5 A or 1 A starting at 10 mA
	Measurement input range	5 mA to 6 A
	Permissible overload	15 A continuous 50 A for 10 seconds per hour 120 A for 1 second per hour
	Impedance	< 0.12 Ω
	Load	< 0.15 VA
Control power	AC	100 to 415 ± 10 % V AC, 5 VA; 50 to 60 Hz
	DC	125 to 250 ± 20 % V DC, 3 W
	Ride-through time	100 ms at 120 V AC
Output	Pulse outputs (PM200P)	Static output 240 ± 10 % V AC, 100 mA max. at 25 °C, (derate 0.56 mA per °C above 25 °C), 2.41 kV rms isolation, 30 Ω on-resistance at 100 mA

Mechanical characteristics

Weight	0.37 kg
IP degree of protection (IEC 60529)	Designed to IP52 front display, IP30 meter body
Dimensions	96 x 96 x 69 mm (meter with display) 96 x 96 x 50 mm (mounting depth)

Environmental characteristics

Operating temperature	Meter	- 5 °C to + 60 °C
	Display	- 10 °C to + 50 °C
Storage temperature	Meter + display	- 40 °C to + 85 °C
Humidity rating	5 to 95 % RH at 50 °C (non-condensing)	
Pollution degree	2	
Metering category (voltage inputs and control power)	CAT III, for distribution systems up to 277 V Ph-N / 480 V AC Ph-Ph	
Dielectric withstand	EN 61010, UL508 Double insulated front panel display	
Altitude	3000 m	

Electromagnetic compatibility

Electrostatic discharge	Level III (IEC 61000-4-2)
Immunity to radiated fields	Level III (IEC 61000-4-3)
Immunity to fast transients	Level III (IEC 61000-4-4)
Immunity to impulsive waves	Level III (IEC 61000-4-5)
Conducted immunity	Level III (IEC 61000-4-6)
Immunity to magnetic fields	Level III (IEC 61000-4-8)
Immunity to voltage dips	Level III (IEC 61000-4-11)
Conducted and radiated emissions	CE commercial environment/FCC part 15 class B EN 55011
Harmonics	IEC 61000-3-2
Flicker emissions	IEC 61000-3-3

Safety

Europe	CE as per IEC 61010-1
U.S. and Canada	UL508

Communication

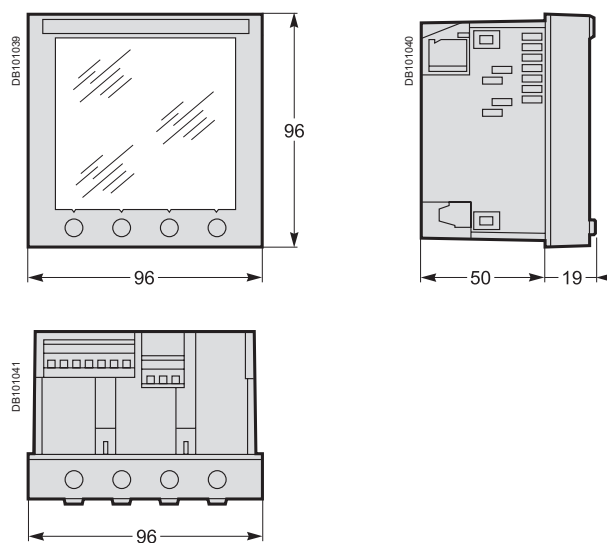
RS485 port (PM210)	2-wire, up to 19200 bauds, Modbus RTU, SELV circuit, 6 kV impulse (double insulation)
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Display characteristics

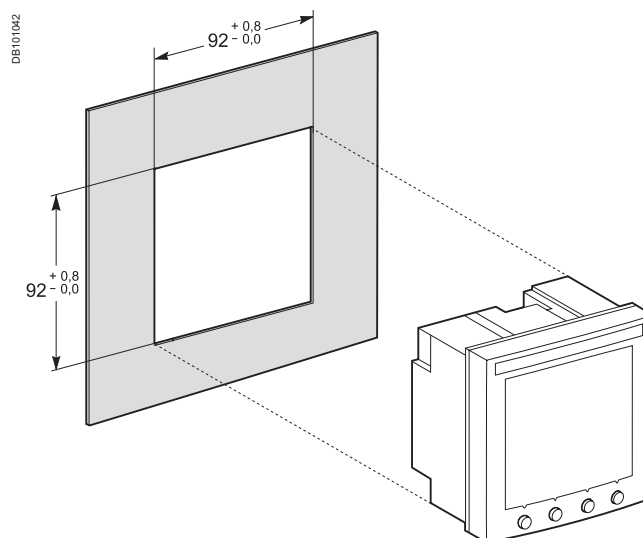
Dimensions 73 x 69 mm	Back-lit green LCD (6 lines total, 4 concurrent values)
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(1) Lower limit of measurement range depends upon PT ratio.

Dimensions



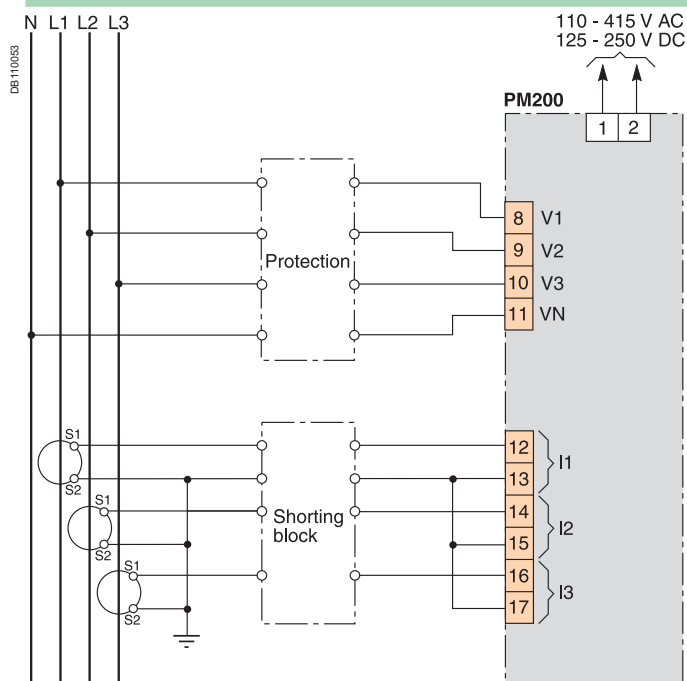
Front-panel mounting



Power Meter Series 200

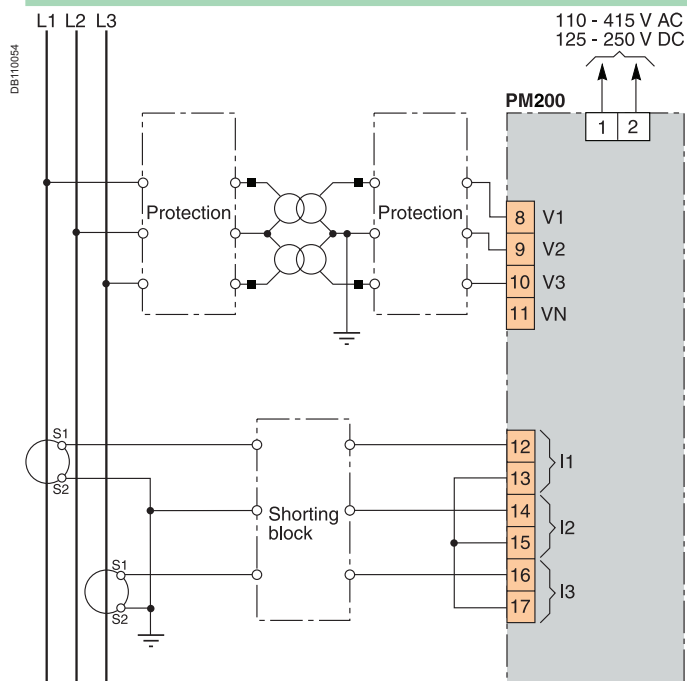
Installation and connection (cont.)

4-wire connection with 3 CTs and no PT



Connection example.

3-wire connection with 2 CTs and 2 PTs



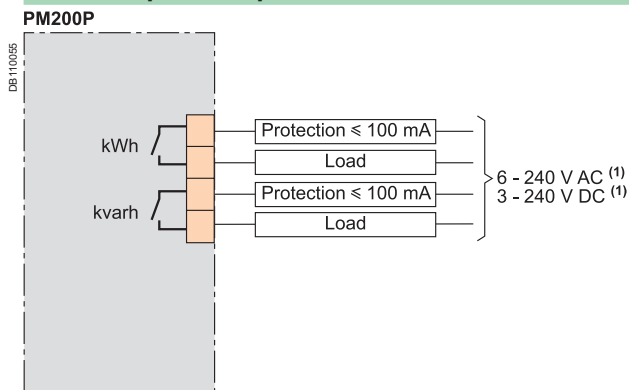
Connection example.

Note: Other types of connection are possible. See product documentation.

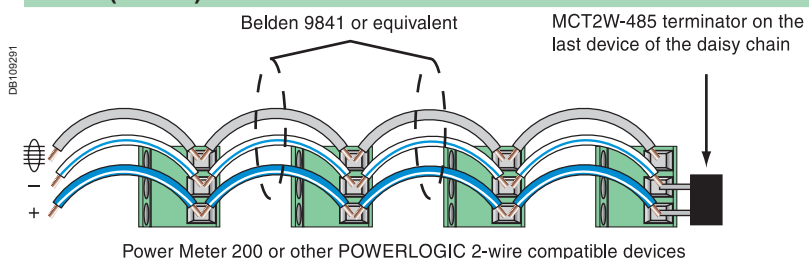
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Installation and connection (cont.)

PM200P : pulse outputs connection



Meter (2-wire)



Belden 9841 wire colors: blue with white stripe (+), white with blue stripe (-), and silver (shield)