

# Power Meter Series 200

## Functions and characteristics



The PowerLogic Power Meter Series 200 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 PM200 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 demand summary screen displays real, reactive, and apparent demand. Current demand and voltage summary screens provide the per-phase and peak values needed to understand circuit performance and loading.

The Power Meter Series 200 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.

#### 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

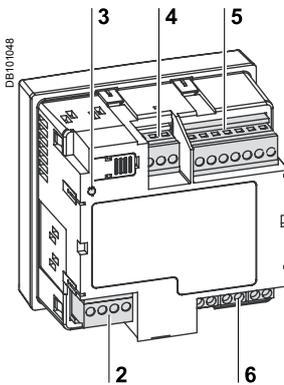
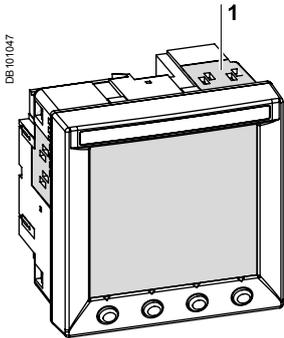
#### Description

##### Power Meter with Integrated Display

Power Meter PM200 with basic readings, demand, and summary screens	<b>PM200MG</b>
Power Meter PM200P with basic readings, demand, and summary screens, plus two digital outputs	<b>PM200PMG</b>
Power Meter PM210 with basic readings, demand, and summary screens, plus an RS485 communication port	<b>PM210MG</b>

#### Parts and accessories

The PM200 series does not have any options or accessories.



- Power Meter Series 200.
- 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
<b>General</b>				
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
<b>Instantaneous rms values</b>				
Current, voltage, frequency		■	■	■
Active, reactive, apparent power Total		■	■	■
Power factor Total		■	■	■
<b>Energy values</b>				
Active, reactive, apparent energy Total		■	■	■
Configurable accumulation mode		■	■	■
<b>Demand values</b>				
Current Present and max. values		■	■	■
Active, reactive, apparent power Present and max. values		■	■	■
<b>Display and outputs</b>				
Green backlit LCD display		■	■	■
IEC or IEEE menu mode		■	■	■
Digital output pulse		-	2	-
<b>Communication</b>				
RS485 (one port)		-	-	2-wire
Modbus protocol		-	-	■



Rear view of Power Meter Series 200.

Electrical characteristics			
Type of measurement		True rms up to the 15 <sup>th</sup> harmonic on single- or three-phase (3P, 3P + N) AC systems 32 samples per cycle	
Measurement accuracy	Current and voltage	0.5 % of reading from 20 % to 120 %	
	Power	1 %	
	Frequency	+0.01 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 1600 kV AC (with external VT)	
		Metering over-range	1.2 Un
	Impedance	2 MΩ (Ph-Ph) / 1 MW (Ph-N)	
	Frequency range	45 to 65 Hz	
Input-current	CT ratings	Primary	Adjustable from 5 A to 32767 A
		Secondary	5 A starting at 10 mA
	Measurement input range	0 to 6 A	
	Permissible overload	10 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	115 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 output (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 W 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	0 °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

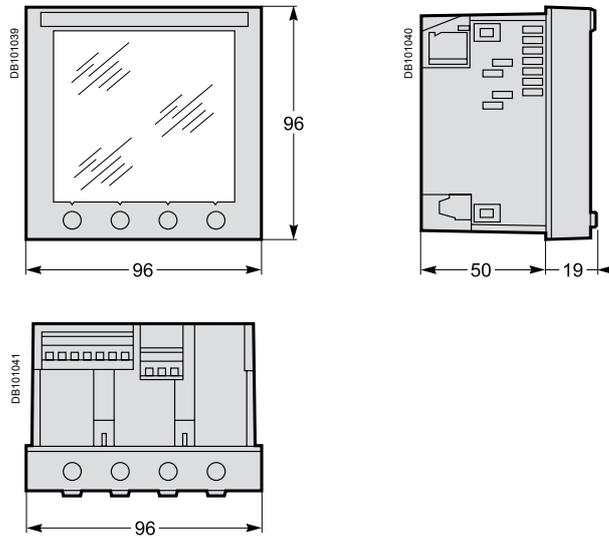
Electromagnetic compatibility	
Electrostatic discharge	Level III (IEC 61000-4-2)
Immunity to radiated fields	Level III (IEC 61000-4-3)
Immunity to fast transients	Level III (IEC 61000-4-4)
Immunity to impulsive waves	Level III (IEC 61000-4-5)
Conducted immunity	Level III (IEC 61000-4-6)
Immunity to magnetic fields	Level III (IEC 61000-4-8)
Immunity to voltage dips	Level III (IEC 61000-4-11)
Conducted and radiated emissions	CÉ 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

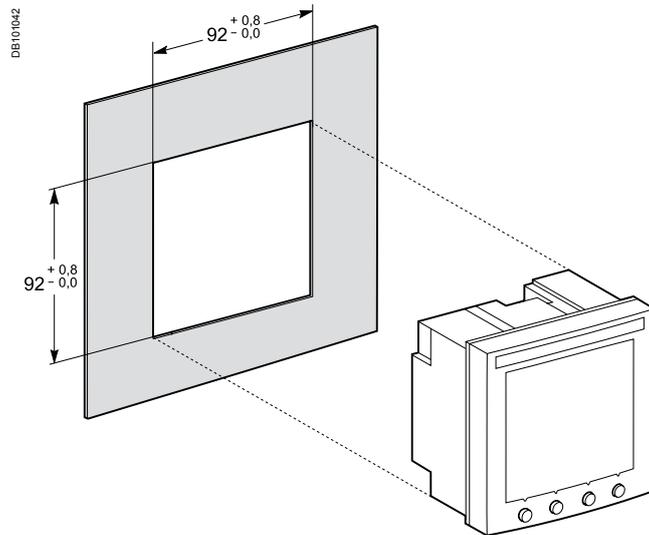
Communication	
RS485 port (PM210)	2-wire, up to 19200 bauds, Modbus RTU, SELV circuit, 6 kV impulse (double insulation)

Display characteristics	
Dimensions 73 x 69 mm	Back-lit green LCD (6 lines total, 4 concurrent values)

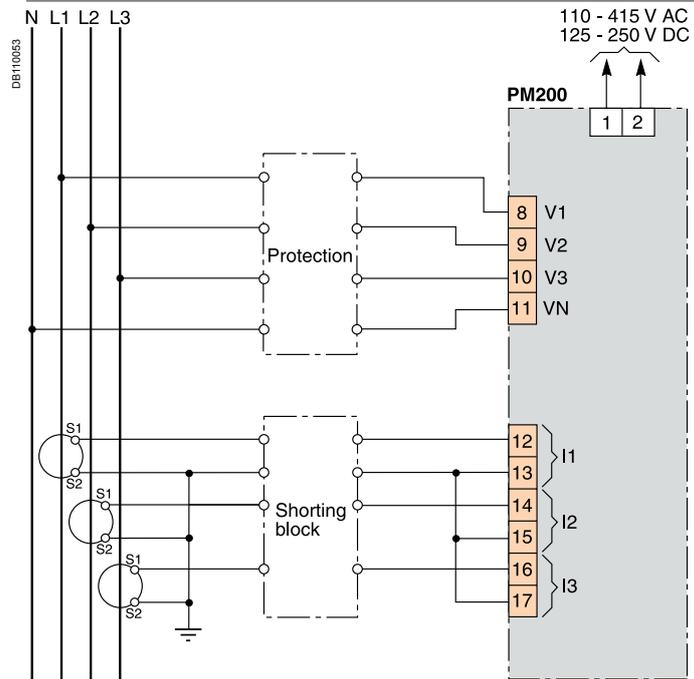
### Dimensions



### Front-panel mounting

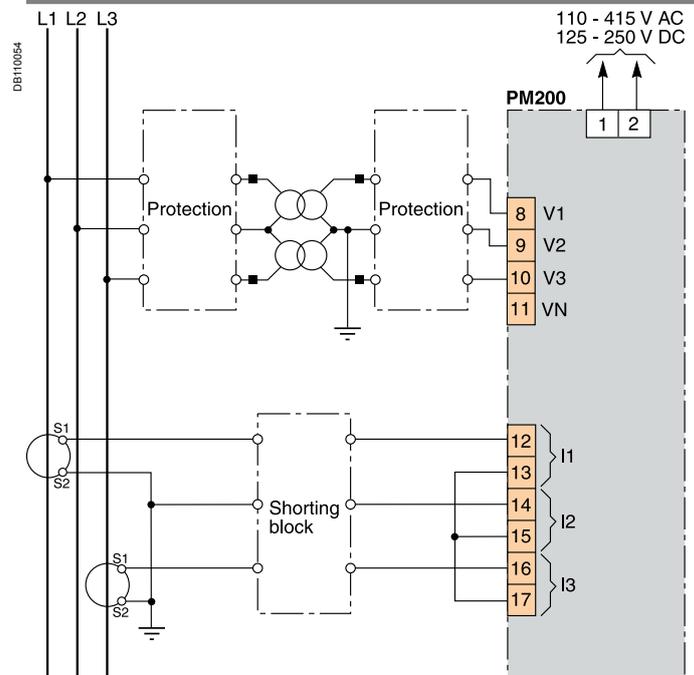


### 4-wire connection with 3 CTs and no PT



Connection example.

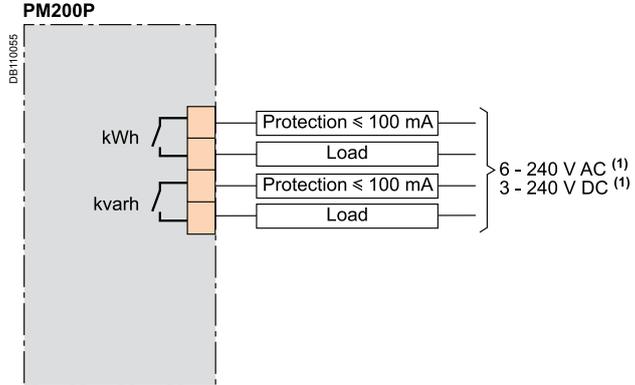
### 3-wire connection with 2 CTs and 2 PTs



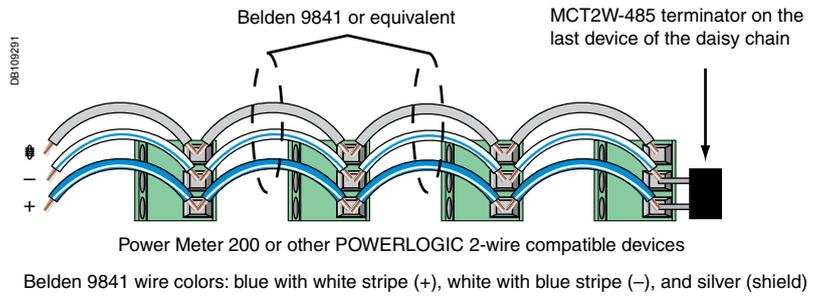
Connection example.

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

**PM200P : pulse outputs connection**



**Meter (2-wire)**



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