

PowerLogic power-monitoring units

PM1000 series power meter

Technical data sheet

2011



PM1000 series

Functions and characteristics

PE86200



PowerLogic™ PM1000 power meter.

PE86201



The PowerLogic PM1000 series power meters are easy-to-use, cost effective meters that offer the basic measurement capabilities required to monitor an electrical installation.

Characterized by their rugged construction, compact size, and low installation costs, these state-of-the-art multi-function meters are ideal for control panels, motor control centers and genset panels.

The PowerLogic PM1000 series power meter is available in two different versions to better fit specific applications:

- PM1000, basic version
- PM1200, basic version plus an RS485 port for Modbus communication.

Applications

- Power monitoring operations.
- Load studies and circuit optimisation.
- Equipment monitoring and control.
- Preventative maintenance.

Main characteristics

Accurate metering

The meter conforms to accuracy class 1.0 as per IEC 62052-11 and IEC 62053-21.

Easy to read display

The bright, alphanumeric, 15mm high LED display provides 3 lines for measurement values with 4 digits per line. The display auto-scales for Kilo, Mega and Giga values. Auto scrolling mode allows for easy reading.

Analogue load bar

The colour-coded analogue load bar indicates the percentage of load through 12 LED segments.

Turbo Key access to information

The Turbo Key button lets you access to the most commonly viewed parameters or enter set up mode with a single push of the button.

Quick and easy installation

Setup is done through the front panel keys. Quick entry to setup during power up by TURBO key. Direct connection for metering voltage inputs up to 480 Vac L-L.

Colour-coded terminal board labeling

The colour-coded label on the terminal board helps ensure accurate wiring.

Secure settings

Safeguard access to setup parameters with unique password protection. A keypad lock lets you display a user selected page by default.

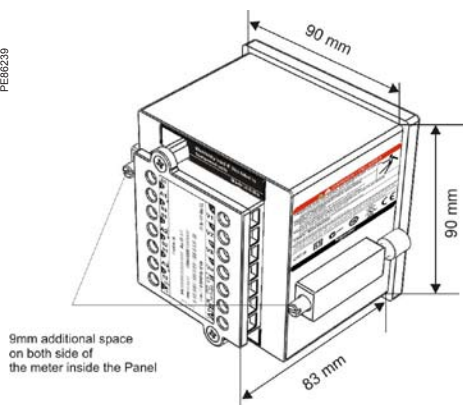
Part numbers

Description	Schneider Electric
PM1000 power meter with basic readings, energy and demand parameters, and summary screens; no communications	METSEPM1000
Same as PM1000 plus an RS485 communication port	METSEPM1200

PM1000 series

Functions and characteristics (cont.)

PE86239



PowerLogic PM1000 series power meter dimensions.

Selection guide		PM1000	PM1200
General			
Use on LV and HV systems		■	■
Current and voltage accuracy		1.0 %	1.0 %
Power accuracy		1.0 %	1.0 %
Energy accuracy		1.0 %	1.0 %
Number of samples per cycle		20 at 50 Hz	20 at 50 Hz
Instantaneous rms values			
Current	Per phase & Neutral	■	■
Voltage	Average, Phase to Neutral & Phase to Phase	■	■
Frequency		■	■
Active, apparent power	Total & per phase	■	■
Power factor	Average & per phase	■	■
Unbalance	Current, voltage	■	■
Phase angle	Between V & I, Ph1, Ph2, Ph3	■	■
RPM	For generator only, speed calculated on generator voltage output and number of machine poles.	■	■
Energy values			
Active, reactive, apparent energy		■	■
Demand values			
Current	Present & max.	■	■
Active apparent power	Present & max.	■	■
Active apparent power settable by user*		■	■
* Client can select one parameter only: A, KW, or KVA			
Power quality measurements			
Total harmonic distortion	Current, voltage, per phase	■	■
Other measurements			
Run hours	Operating time for load in hours	■	■
ON hours	Operating time for meter in hours	■	■
INTR	Number of interruptions	■	■
Display			
LED display		■	■
Communication			
RS-485 port		-	1
Modbus protocol		-	■

PM1000 series

Functions and characteristics (cont.)

Electrical characteristics			
Type of measurement		True RMS up to the 9th harmonic 20 samples per cycle at 50 Hz	
Measurement accuracy*	Current and voltage		1.0 % of reading
	Power	Active	1.0 % of reading
		Reactive	2.0 % of reading
		Apparent	1.0 % of reading
	Frequency		0.1 % of reading
	Power factor		1.0 % of reading
	Energy	Active	IEC 62053-21 Class 1
		Reactive	IEC 62053-23 Class 2
		Apparent	1.0 % of reading
* Additional error of 0.05% of full scale, for meter input current below 100 mA			
Data update rate		1 sec	
Input-voltage characteristics	Inputs		V1, V2, V3, Vn
	Measured voltage		80 - 480 V AC L-L without PTs Up to 999 kV with external PTs
	Permissible overload		1.10 Un (480 V L-L)
	Burden		0.2 VA per phase max.
	Impedance		VLL - 4 Mohms, VLN – 2 Mohms
	Frequency range		45 - 65 Hz
Input-current characteristics	CT ratings	Primary	1 A - 99.0 kA
		Secondary	1 A - 5 A
	Measurement range		50 mA - 6 A (5 mA is the starting)`
	Permissible overload		10 A continuous
	Burden		0.2 VA per phase max.
	Impedance		< 0.1 ohm
Power supply	AC		44 - 277 V AC at 50 Hz/60 Hz
	DC		44 - 277 V DC
	Ride-through time		100 ms at 50V
	Burden		3 VA max.
Mechanical characteristics			
Weight		0.500 kg (shipping), 0.400 kg (unpacked)	
IP degree of protection		Front: IP 51; Back: IP 40	
Dimensions		Bezel: 96 x 96 mm Depth: 80 mm behind bezel Panel cutout: 92 x 92 mm	
Environmental conditions			
Operating temperature		-10°C to +60°C	
Storage temperature		-25°C to +70°C	
Humidity rating		5 to 95 % RH non-condensing	
Altitude		2000 m	
Measurement CAT		III	
Pollution degree		2	
Protection class		2	
Electromagnetic compatibility			
Electrostatic discharge		IEC 61000-4-2	
Immunity to electromagnetic RF fields		IEC 61000-4-3	
Immunity to electrical fast transients		IEC 61000-4-4	
Immunity to surge waves		IEC 61000-4-5	
Conducted disturbance immunity		IEC 61000-4-6	
Damped oscillatory waves immunity		IEC 61000-4-12	
Impulse voltage withstand		6kV for 1.2/50 µS per IEC 60060-1	
Conducted and radiated emissions		CISPR11 Class A, FCC Part 15 Class A	
Safety and standards			
Safety construction		Self extinguishable V0 plastic; UL 508	
CE certification IEC61010		Yes	
Complies with Regulation (EC) n° 1907/2006 of Dec 18 2006 named REACH (related to the Registration, Evaluation, Authorization and restrictions applicable to Chemical substances)			

PM1000 series

Functions and characteristics (cont.)

Communication

RS-485 port	2 terminals only Baud rate up to 19,200 bps Protocols: Modbus RTU
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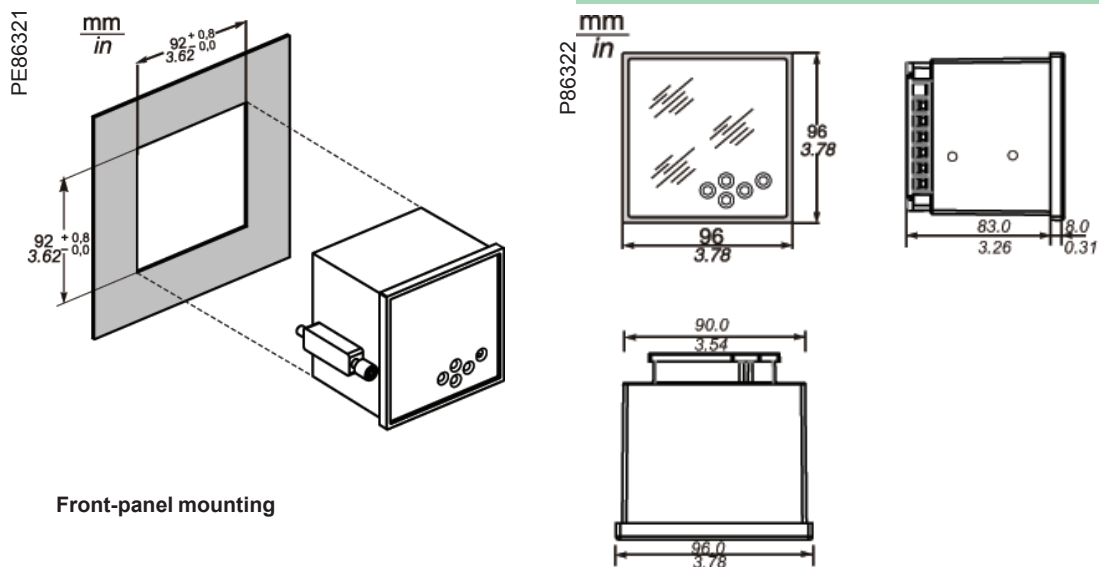
Display characteristics

Integrated LED display	View 3 parameters together on 3 line, 4 digits per line display. Auto-scaling capability for Kilo, Mega, and Giga values. User-selectable default display page. Password protection for setup parameters.
Analogue load bar	Colour-coded analogue indicator provides an option to select the full scale of the load bar based on the sanctioned power limit

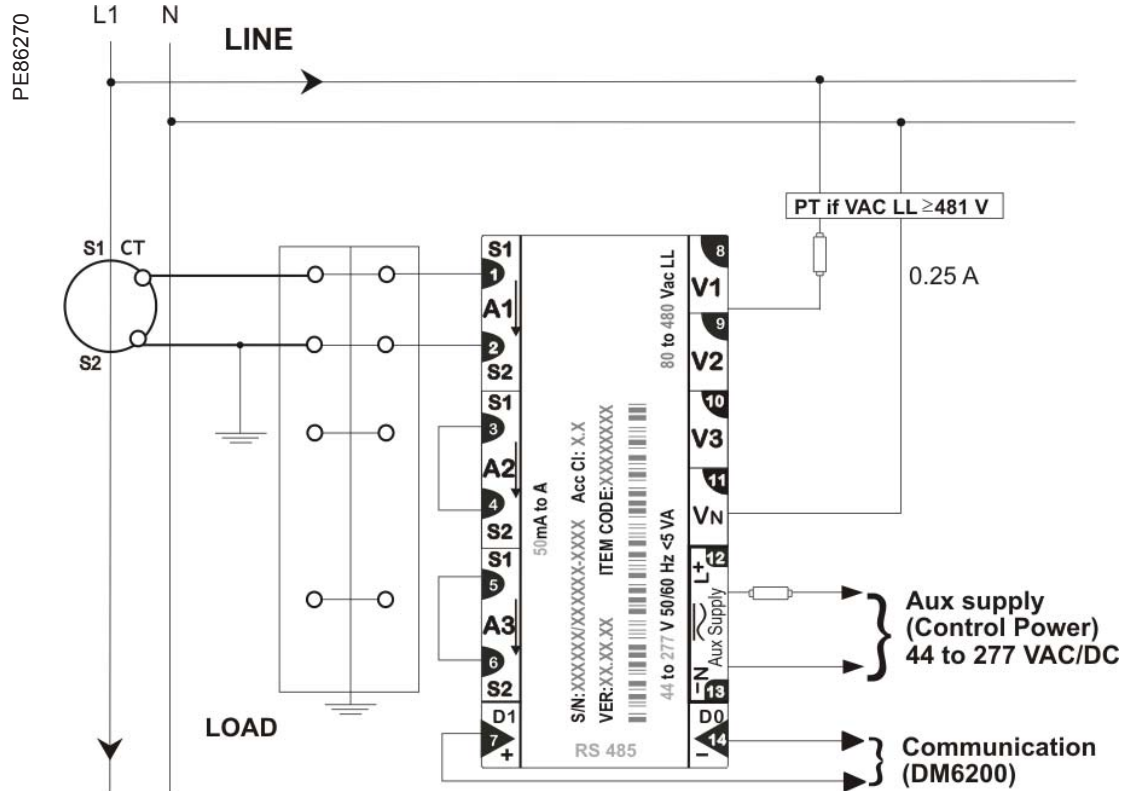
PM1000 series

Installation and connections

PM1000 series meter dimensions



Single phase connection

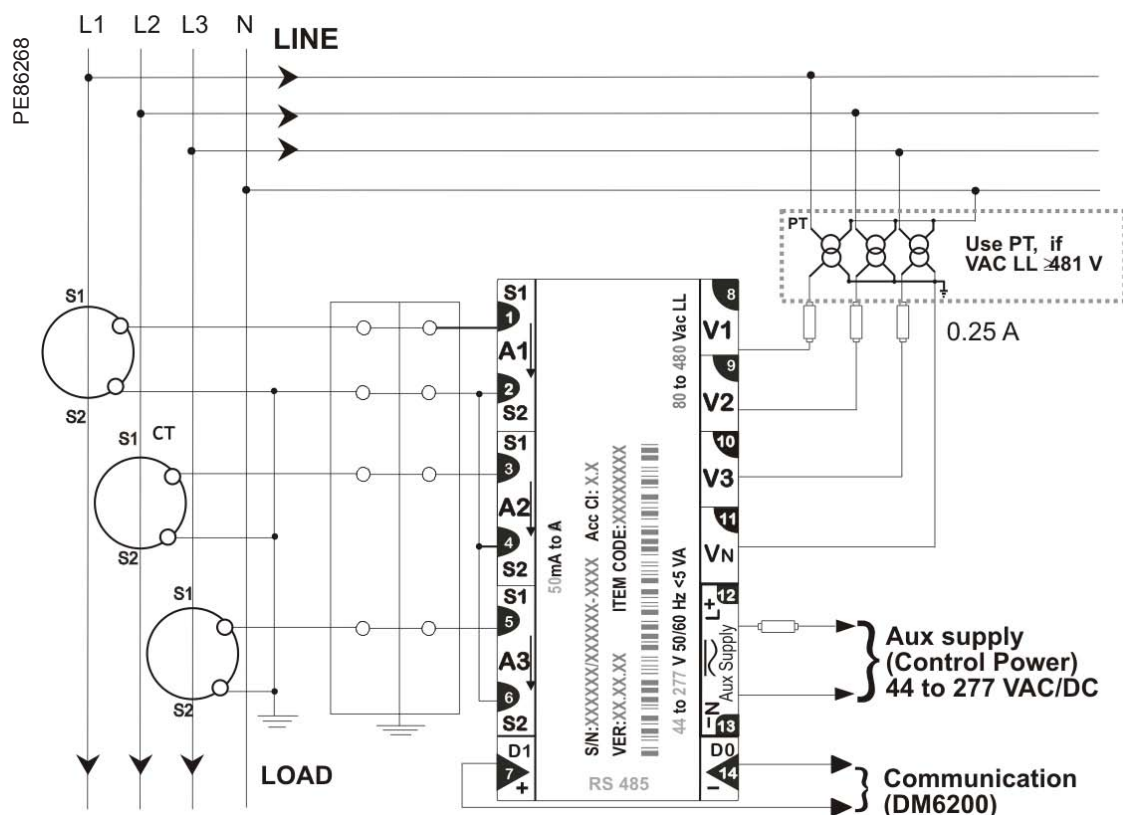


Connection representation only. Other types of connection are possible.
Refer to the PM1000 series Quick Start Guide for details.

PM1000 series

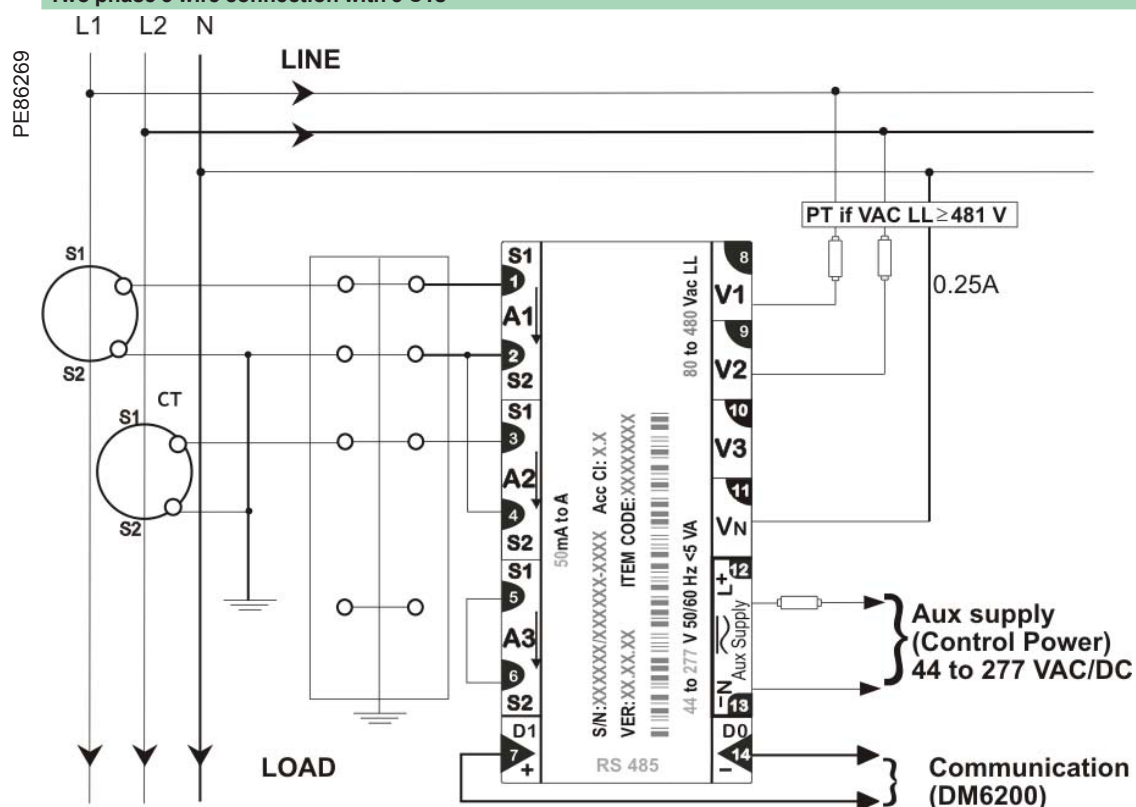
Installation and connections

Three phase 4 wire WYE connection with 3 CTs and 3 PTs



Connection representation only. Other types of connection are possible.
Refer to the PM1000 series Quick Start Guide for details.

Two phase 3 wire connection with 3 CTs



Connection representation only. Other types of connection are possible.
Refer to the PM1000 series Quick Start Guide for details.

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