

PowerLogic power-monitoring units

PM1000 series power meter

Technical data sheet

2011



Schneider
 **Electric**

PE86260



PowerLogic™ PM1000 power meter.

PE86261



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

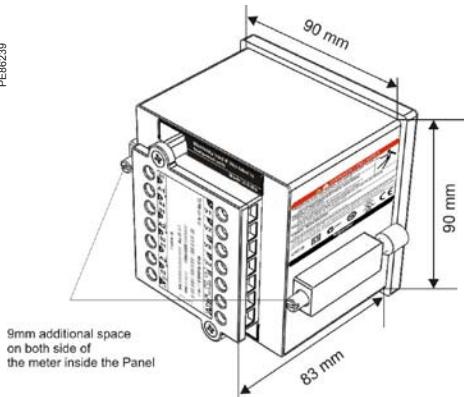
The colour-coded label on the terminal board helps ensure accurate wiring.

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 |



PowerLogic PM1000 series power meter dimensions.

Selection guide

General

| | PM1000 | PM1200 |
|------------------------------|-------------|-------------|
| 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 | ■ | ■ |
|-------------|---|---|

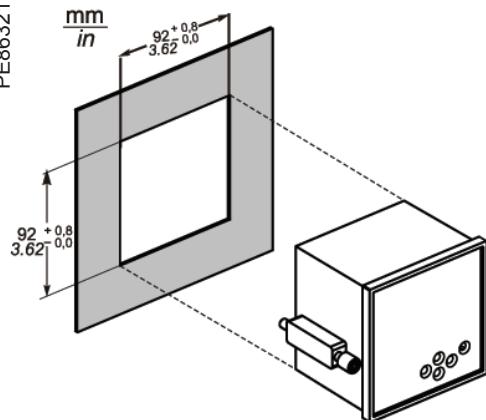
Communication

| | | |
|-----------------|---|---|
| RS-485 port | - | 1 |
| Modbus protocol | - | ■ |

| Electrical characteristics | | | |
|---|---|--|-------------------------------------|
| Type of measurement | | True RMS up to the 9th harmonic 20 samples per cycle at 50 Hz | |
| Measurement accuracy* | Power | Current and voltage | |
| | | Active | 1.0 % of reading |
| | | Reactive | 2.0 % of reading |
| | | Apparent | 1.0 % of reading |
| | Frequency | | 0.1 % of reading |
| | | | 1.0 % of reading |
| | | | |
| | Power factor | 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 | | |
| | 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) | | |
| Input-current characteristics | Burden | | |
| | 0.2 VA per phase max. | | |
| | Impedance | | |
| | VLL - 4 Mohms, VLN - 2 Mohms | | |
| | Frequency range | | |
| 45 - 65 Hz | | | |
| Power supply | 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 μ s 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) | | | |

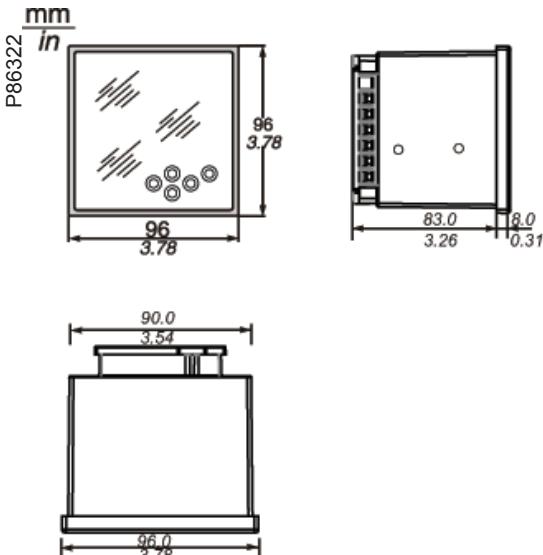
| Communication | |
|-------------------------|---|
| RS-485 port | 2 terminals only Baud rate up to 19,200 bps Protocols: Modbus RTU |
| Display characteristics | |
| Integrated LED display | View 3 parameters together on 3 line, 4 digits per line display. Auto-scaling capability for Kilo, Mega, and 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 |

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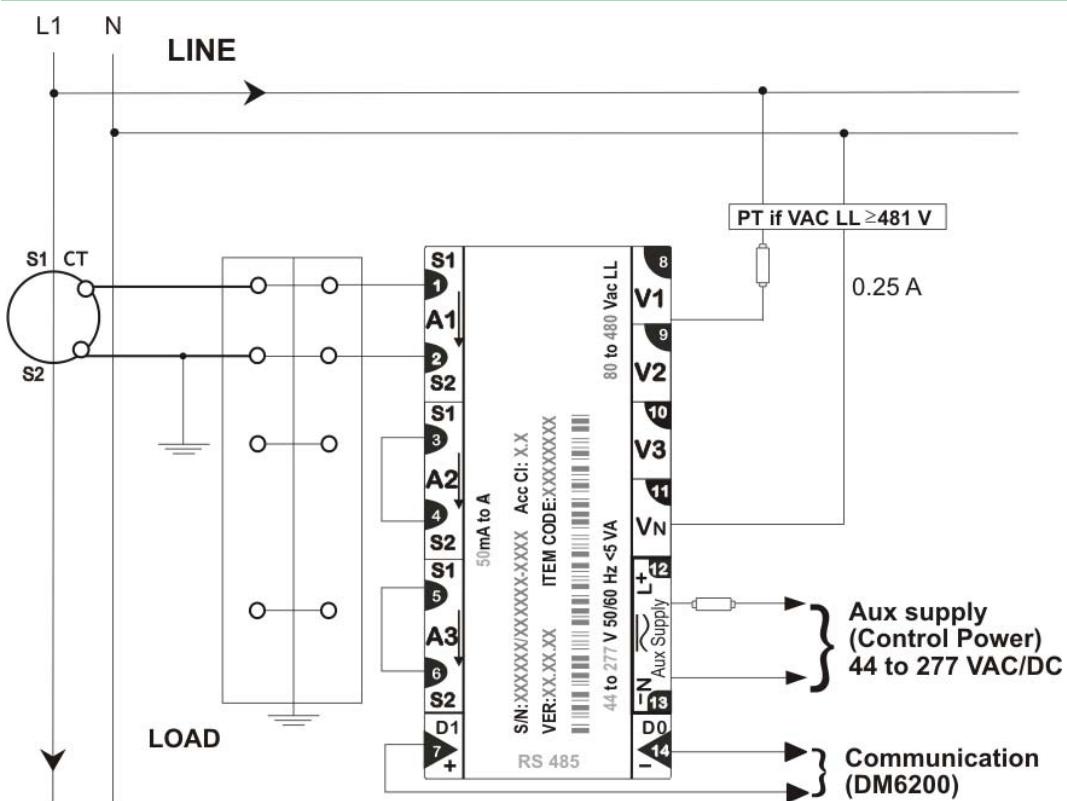


Front-panel mounting

PM1000 series meter dimensions

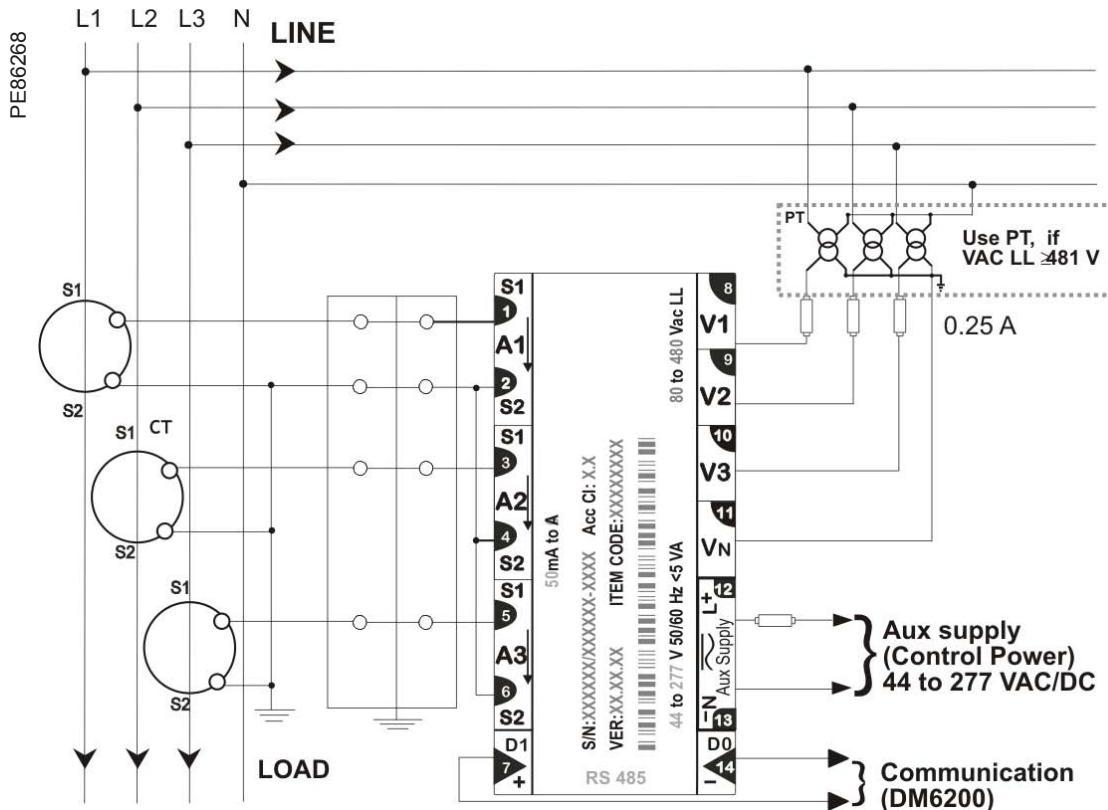


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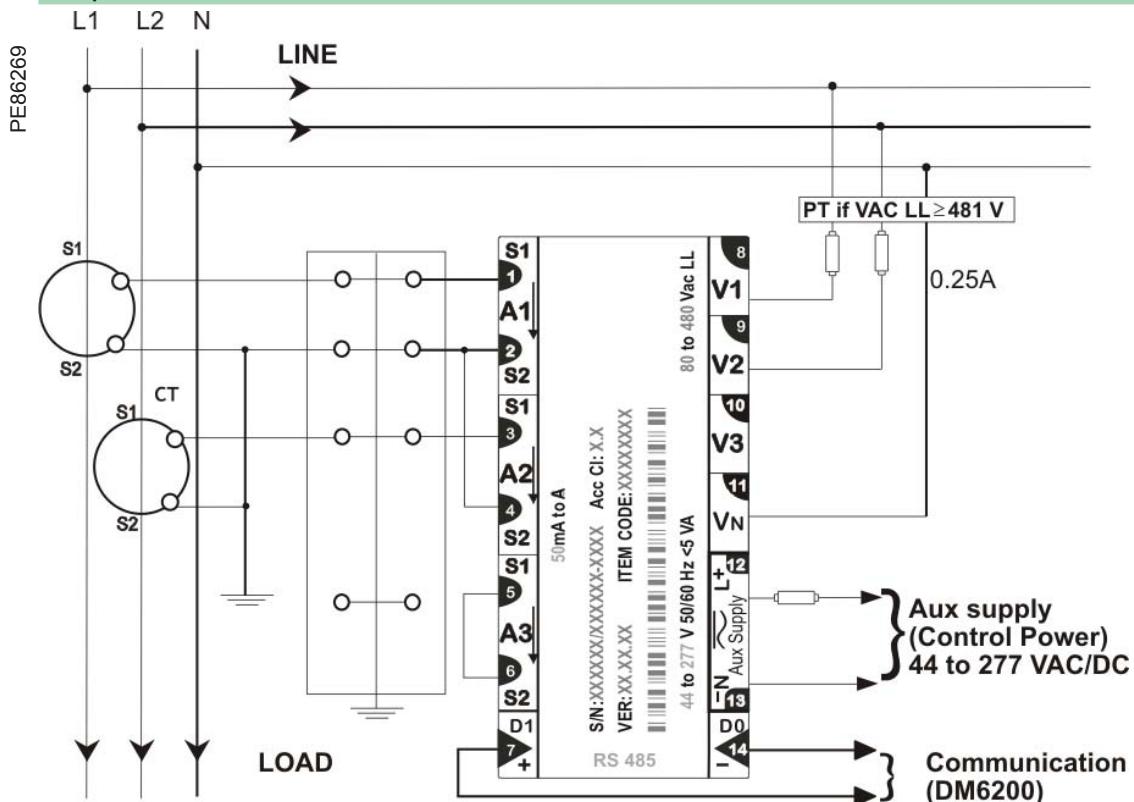
Connection representation only. Other types of connection are possible.
Refer to the PM1000 series Quick Start Guide for details.

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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