

PowerLogic™ PM8000 Series Technical Datasheet

The PowerLogic™ PM8000 series meters are compact, cost-effective multifunction power meters that will help you ensure reliability and efficiency of your power-critical facility.

Reveal and understand complex power quality conditions. Measure, understand and act on insightful data gathered from your entire power system. Designed for key metering points throughout your energy infrastructure, the PowerLogic™ PM8000 series meter has the versatility to perform nearly any job you need a meter to do, wherever you need it!

Applications

Ideal for low to high voltage applications in industrial facilities, data centers, infrastructure and other critical power environments.

PB113887



METSEPM8240

PM8000 series

The solution for

Markets that can benefit from a solution that includes PowerLogic™ PM8000 series meters:

- Industry
- Data centers
- Infrastructure
- Healthcare
- Buildings

Benefits

- Makes understanding power quality simple to help operations personnel avoid downtime and helps ensure increased productivity and equipment life.
- Makes energy and power quality immediately relevant and actionable to support your operational and sustainability goals.

Competitive advantages

- Modular, flexible patented ION technology architecture enables a simple building block approach.
- Disturbance Direction Detection, modularity and compliance with latest power quality standards.
- Color screen.
- Multiple communication options.
- Excellent accuracy.

Power management solutions

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

Conformity of standards

- | | |
|------------------|----------------|
| • EN 50160 | • IEC 62053-22 |
| • EN 50470 | • IEC 62053-23 |
| • IEC 61000-4-30 | • IEC 62053-24 |
| • IEC 61010-1 | • IEC 62586-2 |
| • IEC 61326-1 | • IEEE 519 |
| • IEC 61557-12 | • UL 61010-1 |
| • IEC 62052-11 | |
| • IEC 62053-11 | |

PB113696



PowerLogic™ PM8000 DIN rail meter- underside

PB113668



PowerLogic™ PM8000 series meter - rear view

PB113692



PowerLogic™ PM8000 DIN rail mounted meter

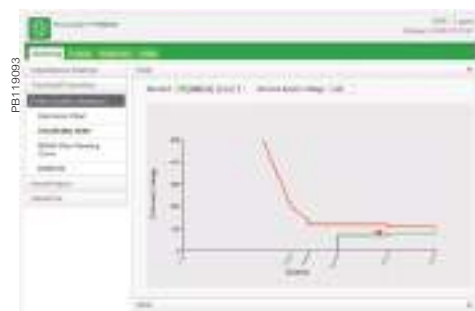
PM8000 series



PowerLogic™ PM8000 series meter



PowerLogic™ PM8000 series waveform web page sample



PowerLogic™ PM8000 series CBEMA web page sample



PowerLogic™ PM8000 series PQ harmonics web page sample

Feature selection

| Commercial reference number | PM8000 meters |
|-----------------------------|-----------------------|
| PM81XX | Essential Feature Set |
| PM82XX | Standard Feature Set |
| PM83XX | Advanced Feature Set |

Main characteristics

- Precision metering:
 - IEC 61557-12 PMD/SD/K70/0.2 and PMD/SS/K70/0.2 3000m (performance measuring and monitoring functions).
 - Class 0.2S accuracy IEC 62053-22, ANSI C12.20 Class 0.2 (active energy).
 - Industry leading Class 0.5S accuracy for reactive energy (IEC 62053-24).
 - Cycle-by-cycle RMS measurements updated every ½ cycle.
 - Full 'multi-utility' WAGES metering support.
 - Net metering.
 - Anti-tamper protection seals and hardware metrology lock.
- PQ compliance reporting and basic PQ analysis:
 - Monitors and logs parameters in support of international PQ standards,
 - IEC 61000-4-30 Class A/S (test methods as per IEC 62586-2).
 - Generates onboard PQ compliance reports accessible via onboard web pages:
 - Basic event summary and pass/fail reports, for EN 50160 for power frequency, supply voltage indication, supply voltage dips, short and long interruptions, temporary over voltages, voltage unbalance and harmonic voltage.
 - ITIC (CBEMA) and SEMI curves, with alarm categorization to support further analyses.
 - NEMA Motor Derating curve.
 - Pass/fail report for IEEE 519 for voltage and current harmonic limits.
 - Harmonic analysis:
 - THD on voltage and current, per phase, min/max, custom alarming.
 - Individual harmonic magnitudes and angles on voltage and current, up to the 63rd harmonic.
 - High resolution waveform capture: triggered manually or by alarm, captured waveforms available directly from the meter via SFTP in a COMTRADE format.
 - Disturbance detection and capture: sag/swell on any current and voltage channel, alarm on disturbance event, waveform capture with pre-event information.
 - Patented Disturbance Direction Detection: provides indication of the captured disturbance occurring upstream or downstream of the meter; timestamped results provided in the event log, with degree of certainty of disturbance direction.
- Used with Schneider Electric's sophisticated software tools, provides detailed PQ reporting across entire network:
 - EN 50160 report.
 - IEC 61000-4-30 report.
 - IEEE 519 harmonic compliance report.
 - PQ compliance summary.
 - Display of waveforms and PQ data from all connected meters.
 - Onboard web-based waveform viewer.
 - Energy reports for consumption analysis and cost management.
 - WAGES dashboards and reports.
 - EcoStruxure™ Power Events Analysis, including alarm management, sequence of events, and root cause analysis.
- Cybersecurity:
 - Security events logging with Syslog protocol support.
 - HTTPS secure protocol.
 - Ability to enable or disable any communication port and any protocol per port.
 - Anti-tamper protection seals and hardware metrology lock.
 - User accounts with strong passwords.
- Data and event logging:
 - Onboard data and event logging.
 - 512 MB storage.

PM8000 series



PowerLogic™ PM8000 series meter with remote display



PowerLogic™ PM8000 series meter with option modules



PowerLogic™ PM8000 series with RS-485 4-Wire module



PowerLogic™ PM8000 series with Fiber-Ethernet Module

Main characteristics (contd.)

- No data gaps due to network outages or server downtime.
- Min/Max log for standard values.
- Up to 64 user definable data logs, recording up to 16 parameters on a cycle-by-cycle or other user definable interval.
- Continuous logging or 'snapshot' triggered by setpoint and stopped after defined duration.
- Trend energy, demand and other measured parameters.
- Forecasting via web pages: average, minimum and maximum for the next four hours and next four days.
- Advanced time-of-use capability.
- Security / event log: alarm conditions, metering configuration changes, power outages, firmware download, and user login/logout all timestamped to ± 1 millisecond.

Alarming and control:

- 50+ definable alarms to log critical event data, trigger waveform recording, or perform control function.
- Trigger on any condition, with 1/2-cycle and 1-second response time.
- Combine alarms using Boolean logic and to create alarm levels.
- Alarm notification via email.
- In conjunction with Schneider Electric's EcoStruxure™ software, alarms, software alarms, and alarm frequency are categorized and trended enabling sequence of events and root cause analyses.

Usability

Easy installation and setup:

- Panel and DIN rail mounting options, remote display option.
- Pluggable connectors.
- Free setup application simplifies meter configuration.
- Auto-discovery using DPWS (Device Profile Web Services).
- DHCP for automatic IP address configuration.

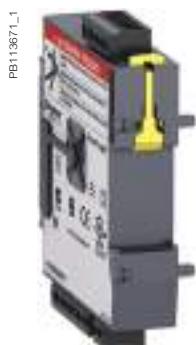
Front panel:

- Easy to read color graphic display.
- Simple, intuitive menu navigation with multi-language (8) support.

Flexible remote communications:

- Multiple simultaneously operating communication ports and protocols allow interfacing with other automation systems; (e.g. waveforms, alarms, billing data, etc.) can be uploaded for viewing/analysis while other systems access real-time information.
- Supports Modbus, ION, DNP3, IEC 61850.
- Dual port Ethernet: 10/100BASE-TX; supports IPV4 and IPV6; daisy-chaining capability removes need for additional switches.
- Fiber-Ethernet option module: Multi-mode 100Base-FX with SC duplex connector
- Secure web interface with HTTPS and TLS 1.2 with support for user-provided certificates.
- Create redundant network loop using Rapid Spanning Tree Protocol (RSTP) and managed Ethernet switches.
- Customize TCP/IP port numbers and enable/disable individual ports.
- RS-485 2-wire connection, up to 115,200 baud, Modbus RTU, ION and DNP3 protocols.
- 4-Wire RS-485 option module: Up to 115,200 baud, Modbus RTU, ION and DNP3 protocols.
- Ethernet to serial gateway with Modbus Master functionality, connecting to 31 downstream serial Modbus devices. Also supports Modbus Mastering over TCP/IP (Ethernet) network.
- Full function web server with factory and customizable pages to access real-time and PQ compliance data.

PM8000 series



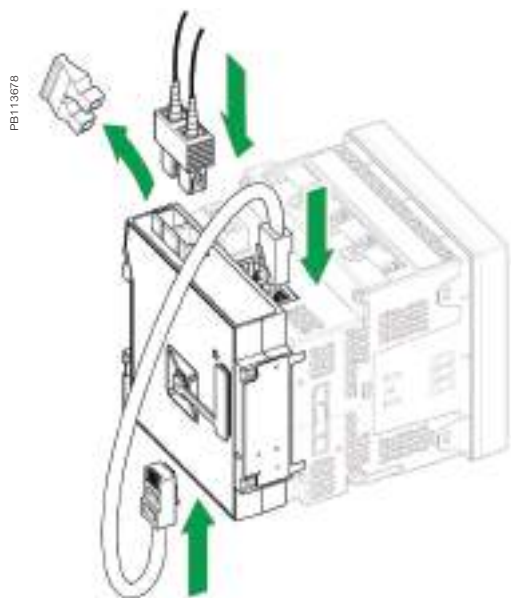
PowerLogic™ I/O module



4-Wire RS-485 Option Module



Fiber-Ethernet Option Module



PowerLogic™ PM8000 connection with Fiber-Ethernet module

- Time synchronization via:
 - GPS clock (RS-485) or IRIG-B (digital input) to ± 1 millisecond.
 - Network Time Protocol (NTP/SNTP).
 - Precision Time Protocol (PTP - IEEE 1588 / IEC 61588).
 - Time set function from Schneider Electric software server.

Adaptability

- ION™ frameworks are customizable, scalable applications with object-oriented programming that compartmentalizes functions, and increases flexibility and adaptability.
- Applications include: accessing and aggregating data from downstream Modbus devices over serial or across the network (Modbus TCP/IP), logging and/or processing data through totalization, unit conversion or other calculations, applying complex logic for alarming or control operations, and visualization via webpages.

Standard meter I/O

- 3 digital status/counter inputs.
- 1 KY (form A) energy pulse output for interfacing with other systems.

Advanced Metering Option Modules

- Expanding meter's flexibility with communication and I/O option modules
- Powered from meter base

I/O Expansion Option Modules

Option modules include:

- Digital module:
 - 6 digital status/counter inputs.
 - 2 Form C relay outputs, 250 V, 8 A.
- Analog module:
 - 4 analog inputs (4-20 mA; 0-20 mA; 0-30 V).
 - 2 analog outputs (4-20 mA; 0-20 mA; 0-10 V) for interfacing with building management sensors and systems.

Communication Option Modules

Option modules include:

- 4-Wire RS-485 Module ⁽⁺¹⁾:
 - Adds 4-wire support to the meter i.e. eliminating the cost and efforts of rewiring while replacing/retrofitting legacy 4-Wire RS-485 systems
 - Pluggable screw terminal connector
- Fiber-Ethernet Module ⁽⁺²⁾:
 - Provides isolated data transmission through fiber optics up to 2000 m length
 - Supports multi-mode 100Base-FX type
 - SC duplex connector

⁽⁺¹⁾ Onboard 2-Wire RS-485 port is disabled with the optional module.

⁽⁺²⁾ Connected to the meter base using Ethernet patch cable (included with the module)

Maximum of 4 optional modules in total (Fiber-Ethernet, 4-Wires RS-485, I/O modules) can be connected to the meter. Only 1 Fiber-Ethernet and 1 4-Wire RS-485 option module is supported per meter.

Please refer to the option module **Installation Guides** for more details.

PM8000 series

Feature guide

| | | PM8000 Essential | PM8000 Standard | PM8000 Advanced |
|--|------------------------------|---------------------|--------------------|--------------------|
| General | | | | |
| Use on LV, MV, and HV systems | | ■ | ■ | ■ |
| Current accuracy | | 0.1 % reading | 0.1 % reading | 0.1 % reading |
| Voltage accuracy | | 0.1 % reading | 0.1 % reading | 0.1 % reading |
| Active energy accuracy | | 0.2 Class | 0.2 Class | 0.2 Class |
| Number of samples/cycle or sample frequency | | 256 ⁽⁺³⁾ | 256 | 512 |
| ION programability | | ■ | ■ | ■ |
| Instantaneous rms values | | | | |
| Current, voltage, frequency | | ■ | ■ | ■ |
| Active, reactive, apparent power | Total and per phase | ■ | ■ | ■ |
| Power factor | Total and per phase | ■ | ■ | ■ |
| Current measurement range (autoranging) | | 0.05 - 10 A | 0.05 - 10 A | 0.05 - 10 A |
| Energy values | | | | |
| Active, reactive, apparent energy | | ■ | ■ | ■ |
| Settable accumulation modes | | ■ | ■ | ■ |
| Demand values | | | | |
| Current | Present and max.values | ■ | ■ | ■ |
| Active, reactive, apparent power | Present and max.values | ■ | ■ | ■ |
| Predicted active, reactive, apparent power | | ■ | ■ | ■ |
| Synchronization of the measurement window | | ■ | ■ | ■ |
| Setting of calculation mode | Block, sliding | ■ | ■ | ■ |
| Power quality measurements | | | | |
| Harmonic distortion | Current and voltage | ■ | ■ | ■ |
| Individual harmonics | Via front panel and web page | 31 | 63 | 63 |
| | Via EcoStruxure™ software | - | 127 | 127 |
| Waveform capture | | ■ ⁽⁺³⁾ | ■ | ■ |
| Detection of voltage swells and sags | | ■ | ■ | ■ |
| Fast acquisition | 1/2 cycle data | ■ | ■ | ■ |
| IEC 61000-4-30 Class A/S | | - | S | A |
| EN 50160 Interharmonic | | - | - | ■ |
| IEC 61000-4-15 | | - | - | ■ |
| EN 50160 compliance checking | | - | ■ | ■ |
| IEEE 519 compliance checking | | - | ■ | ■ |
| Disturbance Direction Detection | | - | ■ | ■ |
| Rapid Voltage Change | | - | ■ | ■ |
| Customizable data outputs (using logic and math functions) | | ■ | ■ | ■ |
| Data recording | | | | |
| Min/max of instantaneous values | | ■ | ■ | ■ |
| Event logs | | ■ | ■ | ■ |
| Trending/forecasting | | - | ■ | ■ |
| SER (Sequence of event recording) | | ■ | ■ | ■ |
| Time stamping | | ■ | ■ | ■ |
| GPS synchronization (±1 ms) | | ■ | ■ | ■ |
| Data Recorder | | 10 | 50 | 64 |
| Memory Channels | | 160 | 800 | 1024 |
| Storage (in Mbytes) | | 64 | 512 | 512 |

⁽⁺³⁾ Waveform capture is limited to 128 Samples/cycle recording.

PM8000 series

Feature guide (Contd.)

| | PM8000 Essential | PM8000 Standard | PM8000 Advanced |
|---|----------------------------------|----------------------------------|----------------------------------|
| Display and I/O | | | |
| Front panel display | ■ | ■ | ■ |
| Wiring self-test | ■ | ■ | ■ |
| Pulse output | 1 | 1 | 1 |
| Digital or analog inputs (max) | 27 digital 16 analog | 27 digital 16 analog | 27 digital 16 analog |
| Digital or analog outputs (max, including pulse output) | 1 digital 8 relay 8 analog | 1 digital 8 relay 8 analog | 1 digital 8 relay 8 analog |
| Communication | | | |
| 2-Wire RS-485 port | 1 | 1 | 1 |
| Ethernet port | 2 | 2 | 2 |
| Serial port (Modbus, ION, DNP3) | ■ | ■ | ■ |
| Ethernet port (Modbus/TCP, ION TCP, DNP3 TCP, DHCP, DNS, IPv4, IPv6, IEC 61850) | ■ | ■ | ■ |
| Ethernet gateway | ■ | ■ | ■ |
| Alarm notification via email | ■ | ■ | ■ |
| HTTP/HTTPs web server with waveform viewer | ■ | ■ | ■ |
| SNMP with custom MIB and traps for alarms | ■ | ■ | ■ |
| SMTP email | ■ | ■ | ■ |
| PTP and NTP time synchronization | ■ | ■ | ■ |
| FTP file transfer | ■ | ■ | ■ |
| Option module with 4-Wire RS-485 port | ■ | ■ | ■ |
| Option module with Fiber-Ethernet port | ■ | ■ | ■ |

Commercial references

| Essential | Standard | Advanced | Description |
|----------------|--|--------------|---|
| METSEPM8140 | METSEPM8240 | METSEPM8340 | 96 x 96 panel mount meter, AC/DC power |
| METSEPM8110 | METSEPM8210 | METSEPM8310 | 96 x 96 panel mount meter, LV DC power |
| METSEPM8143 | METSEPM8243 | METSEPM8343 | DIN rail mount meter, AC/DC power |
| METSEPM8113 | METSEPM8213 | METSEPM8313 | DIN rail mount meter, LV DC power |
| METSEPM8144 | METSEPM8244 | METSEPM8344 | DIN rail mount meter with remote display, AC/DC power |
| METSEPM8114 | METSEPM8214 | METSEPM8314 | DIN rail mount meter with remote display, LV DC power |
| METSEPM81401 | METSEPM82401 | METSEPM83401 | MID approved panel mount meter ⁽⁺⁴⁾ |
| - | METSEPM82403 | - | RMICAN approved panel mount meter ⁽⁺⁵⁾ |
| METSEPM81404 | METSEPM82404 | METSEPM83404 | RMICAN sealed panel mount meter ⁽⁺⁵⁾ |
| Accessories | | | |
| METSEPM89RD96 | Remote display, 3 metre cable, mounting hardware for 30 mm hole (nut & centering pin), mounting hardware for DIN96 cutout (92 x 92 mm) adapter plate | | |
| METSEPM89M2600 | Digital I/O module (6 digital inputs & 2 relay outputs) | | |
| METSEPM89M0024 | Analog I/O module (4 analog inputs & 2 analog outputs) | | |
| METSECAB10 | Display Cable, 10 m | | |
| METSEPM8HWK | Replacement hardware kit (connectors, screws, retainer clips, mounting template) | | |
| METSEPMRS4854W | 4-Wire RS 485 option module | | |
| METSEPMFIBER | Fiber-Ethernet option module | | |
| METSEPM8000SK | Sealing kit | | |

⁽⁺⁴⁾ For UK + EU only.

⁽⁺⁵⁾ For Canada only.

PM8000 series

Technical Specifications

| Electrical characteristics | | |
|--|--|---|
| Type of measurement | | True rms to 512 samples per cycle |
| Measurement accuracy | Current & voltage | Class 0.2 as per IEC 61557-12 |
| | Active Power | Class 0.2 as per IEC 61557-12 |
| | Power factor | Class 0.5 as per IEC 61557-12 |
| | Frequency | Class 0.02 as per IEC 61557-12 |
| | Active energy | Class 0.2S IEC 62053-22 Class 0.2 IEC 61557-12, ANSI C12.20 Class 0.2 |
| | Reactive Energy | Class 0.5S IEC 62053-24* |
| MID Directive | | EN 50470-1, EN 50470-1, AnnexB & AnnexD (optional model) |
| Display refresh rate | | 1/2 cycle or 1 second |
| Input-voltage characteristics | Specified accuracy voltage | 57 - 400 V L-N / 100 - 690 V L-L |
| | Impedance | 5 M Ω per phase |
| | Specified accuracy frequency - Frequency | 42 to 69 Hz (50/60 Hz nominal) |
| | Limit range of operation - frequency | 20 to 450 Hz |
| Input-current characteristics | Rated nominal current | 1 A (0.2S), 5 A (0.2S) , 10 A (0.2 ANSI) |
| | Specified accuracy current range | Starting Current: 5 mA Accurate Range: 50 mA - 10 A |
| | Permissible overload | 200 A rms for 0.5 s, non-recurring |
| | Impedance | 0.0003 Ω per phase |
| | Burden | 0.01 VA max at 5 A |
| Power supply AC/DC | AC | 90-415 V AC $\pm 10\%$ (50/60 Hz $\pm 10\%$) 90-120 V AC $\pm 10\%$ (400 Hz) |
| | DC | 110-415 V DC $\pm 15\%$ (20-60 V DC $\pm 10\%$ for PM8210) |
| | Ride-through time | 100 ms (6 cycles at 60 Hz) min., any condition 200 ms (12 cycles at 60 Hz) typ., 120 V AC 500 ms (30 cycles at 60 Hz) typ., 415 V AC |
| | Burden | Typical: 7.7 W / 16 VA at 230 V (50/60 Hz) Fully optioned: max. 18 W / 40 VA at 415 V (50/60 Hz) |
| Power supply LV DC | DC | 20 to 60 V DC $\pm 10\%$ |
| | Burden | Fully optioned: max. 18 W at 18 to 60 V DC |
| Input/outputs | Meter Base Only | 3 digital inputs (30 V AC/60 V DC) 1 form A (KY) solid state digital output (30 V AC/60 V DC, 75 mA) |
| | Optional | Digital - 6 digital inputs (30 V AC / 60 V DC) wetted + 2 form C relay outputs (250 V AC, 8 A) Analog - 4 analog inputs (4-20 mA, 0-30 V DC) + 2 analog outputs (4-20 mA, 0-10 V DC) |
| Mechanical characteristics | | |
| Weight | | Integrated Display Model 0.581 kg DIN rail mounted Model 0.528 kg IO modules 0.140 kg Remote display 0.300 kg |
| IP degree of protection | | IP 54, UL type 12: Panel mount and Remote display, front IP 30: Panel mount rear, DIN rail mount, I/O modules |
| Excellent quality | | ISO 9001 and ISO 14000 certified manufacturing |
| Dimensions | Panel mount model | 96 x 96 x 77.5 mm |
| | DIN model | 90.5 x 90.5 x 90.8 mm |
| | Remote display | 96 x 96 x 27 mm |
| | IO modules | 90.5 x 90.5 x 22 mm |
| Environmental conditions | | |
| Operating temperature | | -25 °C to 70 °C |
| Remote Display Unit | | -25 °C to 60 °C |
| Storage temperature | | -40 °C to 85 °C |
| Humidity rating | | 5 % to 95 % non-condensing |
| Installation category | | III |
| Operating altitude (maximum) | | 3000 m above sea-level |
| Electromagnetic compatibility | | |
| EMC standards | | IEC 62052-11 and IEC 61326-1 |
| Immunity to electrostatic discharge | | IEC 61000-4-2 |
| Immunity to radiated fields | | IEC 61000-4-3 |
| Immunity to fast transients | | IEC 61000-4-4 |
| Immunity to surges | | IEC 61000-4-5 |
| Immunity to conducted disturbances | | IEC 61000-4-6 |
| Immunity to power frequency magnetic fields | | IEC 61000-4-8 |
| Immunity to conducted disturbances, 2-150kHz | | CLC/TR 50579 |
| Immunity to voltage dips & interruptions | | IEC 61000-4-11 |
| Immunity to ring waves | | IEC 61000-4-12 |
| Conducted and radiated emissions | | EN 55022, EN 55011, FCC part 15 Class B, EN55011, EN55022 Class B, ICES-003 Class B |
| Surge withstand Capability (SWC) | | IEEE / ANSI C37.90.1 |

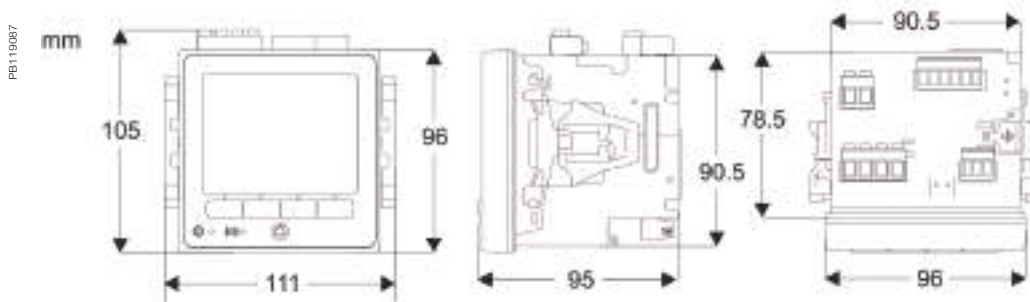
PM8000 series

Technical Specifications(Contd.)

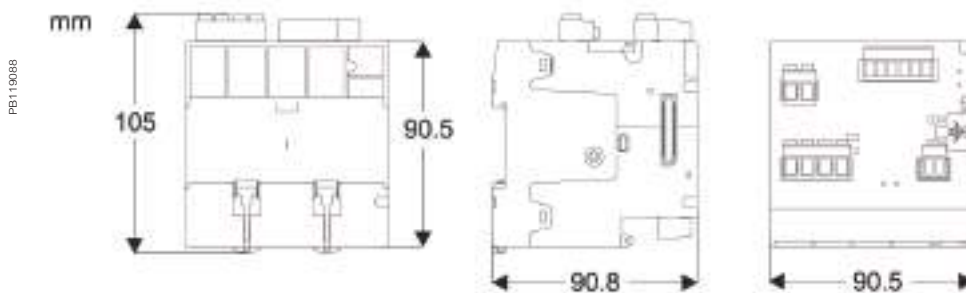
| Safety | |
|------------------------------------|--|
| Safety Construction | IEC/EN 61010-1 ed.3, CAT III, 400 V L-N / 690 V L-L UL 61010-1 ed.3 and CSA-C22.2 No. 61010-1 ed.3, CAT III, 347 V L-N / 600 V L-L IEC/EN 62052-11, protective class II |
| Communication | |
| Ethernet to serial line gateway | Communicates directly with up to 31 unit load devices |
| Web server | Customisable pages, new page creation capabilities, HTML/XML compatible |
| Serial port RS-485 | Baud rates of 2400 to 115200, pluggable screw terminal connector |
| Ethernet port(s) | 2x 10/100BASE-TX, RJ45 connector (UTP) |
| Protocol | Modbus, ION, DNP3, IEC 61850, HTTPS, FTP, SNMP, SMTP, DPWS, RSTP, NTR, PTR, NTP/SNTP, GPS, IPv4 /IPv6, DHCP, Syslog protocols |
| Communication Option Modules | |
| Optional 4-Wire RS-485 serial port | Baud rates of 2400 to 115200, pluggable screw terminal connector |
| Optional Fiber-Ethernet port | Ethernet patch cable from base meter, multi-mode 100Base-FX, SC duplex connector |
| Firmware characteristics | |
| High-speed data recording | Down to 1/2 cycle interval burst recording, stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment |
| Harmonic distortion | Up to 63rd harmonic (127 th via Schneider Electric software) for all voltage and current inputs |
| Sag/swell detection | Analyse severity/potential impact of sags and swells: magnitude and duration data suitable for plotting on voltage tolerance curves per phase triggers for waveform recording, control |
| Disturbance direction detection | Determine the location of a disturbance more quickly and accurately by determining the direction of the disturbance relative to the meter. Analysis results are captured in the event log, along with a timestamp and confidence level indicating level of certainty |
| Instantaneous | High accuracy of standard speed (1s) and high-speed (1/2 cycle) measurements, including true rms per phase and total for: voltage, current, active power (kW), reactive power (kvar), apparent power (kVA), power factor, frequency, voltage and current unbalance, phase reversal |
| Load profiling | Channel assignments (Up to 1024 Channels via 64 data recorders) configurable for any measurable parameter, including historical trend recording of energy, demand, voltage, current, power quality, or any measured parameter. Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually |
| Trend curves | Historical trends and future forecasts to better manage demand, circuit loading, and other parameters. Provides average, min, max and standard deviation every hour for last 24 hours, every day for last month, every week for last 8 weeks and every month for last 12 months |
| Waveform captures | Simultaneous capture of all voltage and current channels, sub-cycle disturbance capture, ability to record from 320 cycles at 512 sample per cycle to over 2880 cycles at 16 points per cycle with user selectable sampling speed as well as pre- and post-trigger length |
| Alarms | Threshold alarms: adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm, user-defined or automatic alarm threshold settings, user-defined priority levels (optional automatic alarm setting) |
| Advanced Time of Use (TOU) | 6 seasons; 3 different day types: weekend, weekday, and holiday; up to 8 tariffs per day type |
| Advanced security | Up to 50 users with unique access rights. Perform resets, time sync, or meter configurations based on user privileges |
| Storage | 512 MB |
| Firmware update | Update via the communication ports |
| Display characteristics | |
| Integrated or Remote display | 320 x 240 (1/4 VGA) Color LCD, configurable screens, 5 buttons and 2 LED indicators (alarm and meter status) |
| Languages | English, French, Spanish, Russian, Portugese, German, Italian, Chinese |
| Notations | IEC, IEEE |
| The HMI menu includes | |
| Alarms | Active alarms, historic alarms (50+ alarms) |
| Basic Reading | Voltage, current, frequency, power summary |
| Power | Power summary, demand, power factor |
| Energy | Energy total, delivered, received |
| Events | Timestamped verbose event log |
| Power Quality | EN 50160, IEEE 519, harmonics, phasor diagrams |
| Inputs/Outputs | Digital inputs, digital outputs, analog inputs, analog outputs |
| Nameplate | Model, serial and FW version |
| Custom Screens | Build your own metrics |
| Setup Menu | Meter setup, communications setup, display setup, date/time/clock setup, alarm setup, language setup, time of use setup, resets, password setup |

PM8000 series

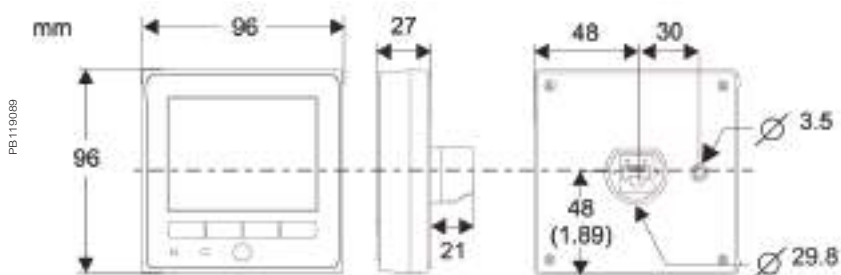
PM8000 panel mount meter dimensions



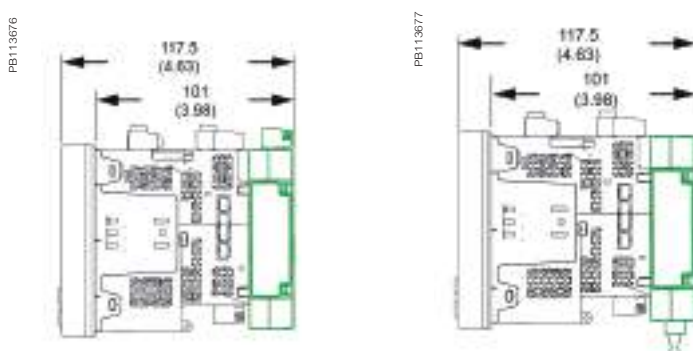
PM8000 DIN rail mount meter dimensions



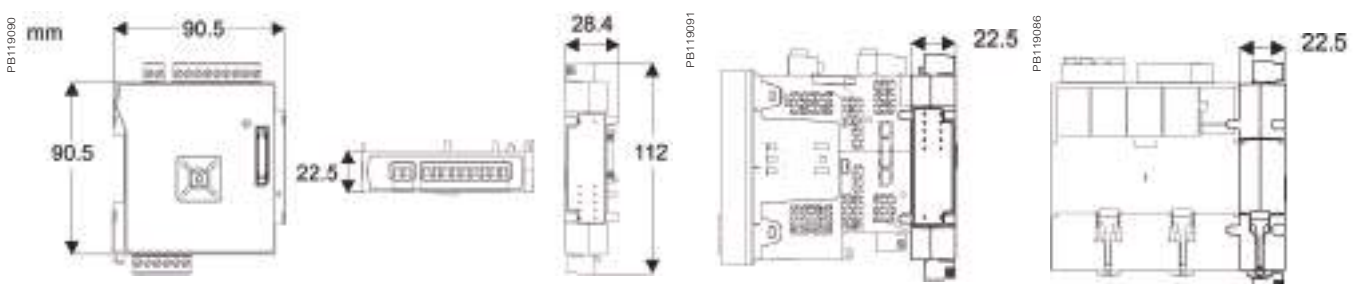
PM8000 remote display dimensions



PM8000 with communication option modules



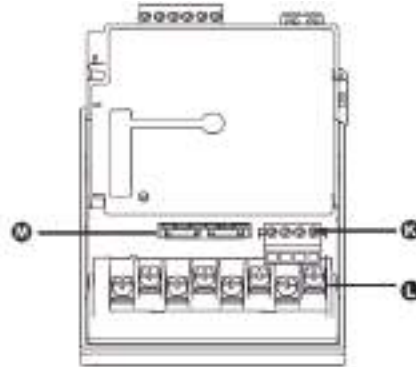
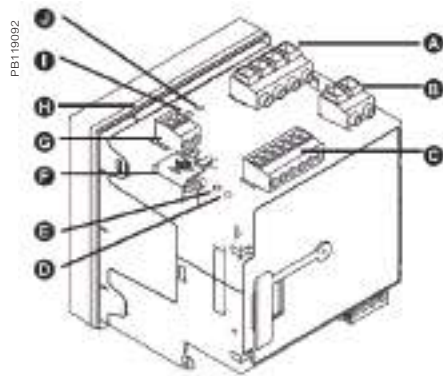
PM8000 with I/O modules dimensions



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

PM8000 series

PM8000 series parts



- A** Voltage inputs
- B** Control power
- C** Digital inputs
- D** Revenue lock LED (green)
- E** Status LED (green/red)
- F** Revenue lock switch
- G** Digital output
- H** Sealing gasket
- I** Infrared energy pulsing LED
- J** Energy pulsing LED
- K** RS-485
- L** Current inputs
- M** Ethernet (2)
- N** Date/time
- O** Revenue lock icon

- P** Alarm icon
- Q** Display
- R** Navigation icons
 - ▲ Up
 - ▼ Down
 - ⏏ Select
 - ⏏ Cancel
 - ⚙ Edit
 - ⛶ More
- S** Navigation buttons
- T** Home button
- U** Alarm LED (red)
- V** Bar graph



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