

CLASS 0.2S ACCURACY

AS/IEC 62053-22 COMPLIANT

ANSI C12.20

EN 50160 REPORTS

1 MB LOG MEMORY

MV90xi COMPATIBLE

[View the PM175 product page on satec-global.com.au ↗](#)
SUPERSEDED

This meter has been superseded by the PRO Series PM175. This datasheet is kept for existing installations and support. For new projects see the [PM175 PRO product page ↗](#)

PM175

Power Quality Analyser and Revenue Meter with Detachable LED Display

The **PM175** is a compact multifunction three-phase AC power meter and power quality analyser. It was designed for users ranging from electrical panel builders to substation operators who need revenue-grade energy data and EN 50160 power quality reporting in one instrument.

A bright three-row LED display gives clear local readings. The display module is detachable and can be mounted up to 1000 m from the meter. Two communication ports support local and remote meter reading and setup over serial lines, LAN and the internet.



5A CT Input

5A secondary current inputs with a 10A continuous operating range.

1A CT Input

1A secondary current inputs with a 2A continuous operating range.

Remote Display

Detachable 3-row LED module. An LCD colour touch screen was optional.

Main Features

- Class 0.2S revenue accuracy per AS/IEC 62053-22
- 128 samples per cycle true RMS measurement
- Fast real-time cycle-by-cycle measurements
- Four-quadrant energy and power measurement
- Built-in EN 50160 power quality reports
- Harmonics and inter-harmonics to the 50th order
- Two simultaneous waveform recorders
- Time-of-Use metering with 8 tariffs and 4 seasons
- 1 MB of non-volatile log memory
- 2 relay outputs and 4 digital inputs
- Optional analogue inputs and outputs
- Two communication ports including Ethernet

Feature Capabilities

Measurements

- Class 0.2S revenue accuracy
- 128 samples per cycle true RMS measurements
- Fast real-time cycle-by-cycle measurements
- Four-quadrant measurements
- Min/Max values for instantaneous and demand readings
- Accepts all wiring configurations, selectable from the front panel or via communications

Energy and Time-of-Use

- Class 0.2S active and apparent energy per AS/IEC 62053-22:2003
- 8 totalisation and tariff energy/demand registers x 8 tariffs
- 4 seasons x 4 types of day with 8 tariff changes per day
- Easily programmable tariff schedule
- Automatic daily profile of energy and maximum demand readings for total and tariff registers

EN 50160 Power Quality Recorder

- EN 50160 compliance statistics and harmonics survey statistics
- Onboard power quality analyser with programmable thresholds and hysteresis
- Ready-to-use reports
- Customisable EN 50160 power quality recorder
- IEEE 519 power quality evaluation
- Flicker measurement per IEC 61000
- Sag/swell detection and automatic reporting

Full Harmonic Analyser

- Individual voltage and current harmonics up to the 50th order
- Voltage inter-harmonics up to the 50th order
- Voltage and current THD, current TDD and K-factor
- Power harmonics and harmonic flow (direction of harmonics)
- Voltage and current harmonic spectrum and angles
- Conforms with harmonic standards IEEE 1159 and G5/4

Waveform and Transient Recording

- Two independent simultaneous waveform recorders
- Each records complete three-phase voltage and current waveforms
- Recording resolution from 32 up to 128 samples per cycle
- Up to 16 pre-fault and up to 2000 post-fault cycles
- Transient recording with a minimum width of 156 μ s at 50 Hz
- Programmable memory partition

Event and Data Logging

- Programmable event log with 1 ms time stamp
- 16 programmable data log tables with up to 16 parameters each
- Record intervals from 1 to 9999 seconds
- 1 MB of non-volatile log memory
- Fully programmable memory partition for event, data and waveform logs

Real-Time Clock

- Real-time clock for time-stamped event, data and waveform logs
- Typical error of 15 seconds per month at 25°C
- Synchronisation with a GPS pulse input

Control and I/O

- 2 relay outputs
- 4 digital inputs
- 4 analogue inputs (optional)
- Up to 16 analogue outputs (optional)

Communications

- Two independent communication ports
- COM1: RS232/422/485 or Ethernet 10/100BaseT
- COM2: RS422/485
- Modbus RTU, Modbus ASCII, Modbus TCP/IP, DNP3 and Profibus DP
- MV90xi compatible

Software Support

- **PAS Power Analysis Software** for setup, data retrieval and analysis
- **Expertpower™** web platform via the Ethernet port
- **eXpertConnect™ App** for mobile access to energy data

Specifications

CONSTRUCTION

Dimensions	Height 114 mm, width 127 mm, length 114 mm
Weight	1.23 kg (2.7 lb)
Display	Bright 3-row LED display, detachable and mountable up to 1000 m from the meter
Optional display	LCD colour touch screen graphical display

VOLTAGE INPUTS

Operating range	690V AC line-to-line, 400V AC line-to-neutral
Connection	Direct or via PT (up to 828V AC line-to-line, up to 480V AC line-to-neutral)

CURRENT INPUTS · 5A SECONDARY

Operating range	10A RMS continuous
Burden	<0.1 VA
Overload withstand	15A RMS continuous, 300A RMS for 1 second

CURRENT INPUTS · 1A SECONDARY

Operating range	2A RMS continuous
Burden	<0.02 VA
Overload withstand	6A RMS continuous, 80A RMS for 1 second

GENERAL

Frequency	15 Hz to 480 Hz
Burden	8 VA
Operating temperature	-20°C to +60°C
Humidity	0 to 95% non-condensing
Real-time clock	Typical error 15 seconds per month at 25°C

INPUTS AND OUTPUTS

Relay outputs	2 relays rated 3A/250V AC and 3A/30V DC, 2 contacts (SPST Form A)
Digital inputs	4
Analogue inputs	4 (optional)
Analogue outputs	Up to 16 (optional)
Analogue ranges	±1 mA, 0-1 mA, 0-20 mA, 4-20 mA

ENERGY AND ACCURACY

Accuracy class	Class 0.2S per AS/IEC 62053-22:2003
Revenue accuracy	Per ANSI C12.20-1998
Time-of-Use	8 totalisation and tariff energy/demand registers x 8 tariffs, 4 seasons x 4 types of day, 8 tariff changes per day
Daily profile	Automatic daily profile of energy and maximum demand readings

COMMUNICATIONS

Ports	Two independent communication ports
COM1	RS232/422/485 or Ethernet 10/100BaseT
COM2	RS422/485
RS485	Up to 32 devices
Protocols	Modbus RTU, Modbus ASCII, Modbus TCP/IP, DNP3, Profibus DP

MEMORY AND LOGGING

Log memory	1 MB non-volatile
Data logs	16 tables, up to 16 parameters each, 1 to 9999 s intervals
Waveform logs	2 recorders, 32 to 128 samples per cycle
Event log	1 ms time stamp

WARRANTY

Product warranty	3 years
Warranty of accuracy	10 years

Measurement Accuracy

Parameter	Accuracy (Reading)
Voltage (10–120% FS)	0.2%
Current (10–200% FS), starting current 0.1% FS	0.2%
Neutral current	0.4%
Frequency	0.02%
Power factor	0.2%
Active power (W)	0.2%
Reactive power (var)	0.3%
Apparent power (VA)	0.2%
Active energy (Wh)	Class 0.2S per AS/IEC 62053-22:2003
Reactive energy (varh)	Class 0.2S under conditions per AS/IEC 62053-22:2003, $ PF < 0.9$
Apparent energy (VAh)	Class 0.2S per AS/IEC 62053-22:2003
Total harmonic distortion (THD)	0.1%
Total demand distortion (TDD)	1.5%
Temperature coefficient	0.008%/°C
Input circuit consumption	Less than 0.1 VA
Measured current range	1% to 200%

Standards Compliance

Accuracy

- AS/IEC 62053-22:2003 Class 0.2S
- ANSI C12.20-1998

Emission

- EN 55011:1991
- EN 55022:1994 Class A
- EN 50081-2 Generic Emission Standard, Industrial Environment

Safety

- EN 61010-1:1993/A2:1995

Power Quality

- EN 50160
- IEC 61000-4-7 harmonics and inter-harmonics
- IEC 61000 flicker
- CBEMA/ITIC
- IEEE 519 and IEEE 1159

Immunity

- EN 50082-1:1992
- EN 50082-2 Generic Immunity Standard, Industrial Environment
- EN 61000-4-2, EN 61000-4-4:1995, EN 61000-4-8:1993
- ENV 50140:1983, ENV 50141:1993, ENV 50204:1995 (900 MHz)

Directives

- EMC: 89/336/EEC as amended by 92/31/EEC and 93/68/EEC
- LVD: 72/23/EEC as amended by 93/68/EEC and 93/465/EEC

Ordering Information

SUPERSEDED

The PM175 with LED display is no longer offered for new orders. It has been superseded by the PRO Series PM175, which adds Class A power quality measurement per IEC 61000-4-30. See the [PM175 PRO product page](#) ↗ for current ordering options.

SATEC Australia continues to support existing PM175 installations. Contact our team for configuration help, firmware and software support or advice on replacing a PM175 with the PRO Series PM175.



Place an Order or Get Support

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DOCUMENT VERSION

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