



POWER QUALITY MEASUREMENT · PRODUCT BRIEF

PM1

Single-Phase Energy Monitoring & Load Control

Rev A · August 2026 | **Category:** Power Quality Measurement | **Interface:** Modbus / Cellular / G3-PLC

277VAC 0.1% 4 DIN rail

OVERVIEW

The PM1 measures active, reactive, and apparent power, RMS current and voltage, power factor, line frequency, and cumulative energy on any single-phase 277VAC circuit — with 0.1% accuracy across a 4000:1 dynamic range. Add contactor control and you have a complete single-phase energy management node.

From the meter to the cloud — measurement, control, communications, and security in one DIN rail module.

Revenue-grade 277VAC single-phase energy metering and scheduled load control — with flexible Wi-Fi, cellular, Modbus, or power line communications.

TECHNICAL SPECIFICATIONS

Voltage Input	80–277VAC, single-phase (L-N), 50/60Hz
Metering Accuracy	0.1% across a 4000:1 dynamic range (IEC 62053-22 Class 0.2 equivalent)
Measured Parameters	Active, reactive & apparent power; RMS voltage & current; power factor; line frequency; cumulative energy
Current Input	External CT connection (1 CT) via cage clamp terminals
Reporting Interval	1 second to 1 day (configurable); local storage when offline, auto-sync on reconnect
Load Control	External contactor: 80–600VAC coil, 1.2A max, independent of line voltage
Real-Time Clock	On-board RTC with 48-hour power backup; non-volatile schedule storage
Communication	Wi-Fi 6 (2.4/5GHz) — or — Modbus TCP/IP — or — Cellular LTE-M/NB-IoT (Onomondo eSIM) — or — Hybrid PLC+RF (CENELEC-B)
Security	EAP-PSK, 256-bit ECC (factory-configured); TLS/SSL cloud & on-premises
Dimensions	2.66 × 2.95 × 4.21 in (68 × 75 × 107 mm)
Mounting	35mm DIN rail
Operating Temperature	-40°C to +85°C

KEY CAPABILITIES

Revenue-Grade Metering. 0.1% accurate across a 4000:1 dynamic range. Active, reactive, and apparent power. RMS voltage and current. Power factor, line frequency, and cumulative energy.

Flexible Communications. Wi-Fi 6 (2.4/5GHz), Modbus TCP/IP, Cellular LTE-M with Onomondo eSIM, or Hybrid Power Line & RF mesh. One protocol selected at order — no network installer required.

Scheduled Load Control. External contactor control up to 600VAC / 1.2A, independent of line voltage. Built-in RTC with 48-hour power backup. Non-volatile load schedule storage.

Enterprise Security. EAP-PSK with 256-bit ECC encryption, configured at the factory. TLS/SSL for all cloud and on-premises connections. Only whitelisted nodes can join the network.

FROM THE CIRCUIT TO THE CLOUD.

Sub-Metering & Cost Allocation. Monitor individual circuits, machines, or tenant spaces. Granular energy visibility at the circuit level, with interval data logging and cost allocation by load.

Demand Response & Load Control. Automate load shedding and scheduled switching without a separate PLC. Time-of-use scheduling, peak demand management, contactor control up to 600VAC.

Remote & Distributed Sites. Deploy in locations without network infrastructure using cellular or PLC mesh. LTE-M for remote sites, PLC mesh with no new wiring, cloud or on-premises dashboard.

Building Energy Management. Integrate PM1 into building management systems via Modbus TCP/IP or Wi-Fi. Real-time circuit visibility, automated reporting, and load scheduling in commercial buildings.