Eco**Ξ**truxure™
Innovation At Every Level

Advanced Power Quality Meters for a new electric world

PowerLogic™ ION9000 and PM8000 series
Power Quality Meters

se.com/advanced-metering

Life Is On | Schneider Electric

Table of contents

Market challenges and applications

Electrical needs are undergoing unprecedented change

As our world becomes more digital and more electric, our facilities are challenged like never before. Power systems that were once state-of-the-art now struggle to deliver the reliability and efficiency needed today.

The electrical grid is going through fast transformation
Distributed generation, renewables, electrical vehicles and power electronics contribute to the new, dynamic grid.

More players are participating in the energy market
Energy trading transactions are getting more complex, with growing concerns for data accuracy and cybersecurity.

80%
of PQ Disturbance being inside the facility*

50%
Mission-critical power outages due to PQ issues**

*Source: https://www.pge.com/en_US/residential/outages/current-outages/report-view-an-electric-outage/additional-resources/power-quality.page
**Source: According to Electric Light and Power Magazine 30% to 40% of all business downtime is related to Power Quality Issues

PowerLogic advanced meters comply with the most stringent international standards, and perform in all types of power networks.
Watch the video

Discover advanced metering

Explore advanced metering

Perfect for your business

Go further with EcoStruxure

The need for continuous power quality monitoring

Today's power grids and electrical equipment are designed for ideal power quality situations – with voltages at nominal magnitude and frequency – and balanced sinusoidal waveforms. Any disturbances to these conditions will have negative impacts.

Financial impacts of poor power quality can be catastrophic to critical power users and is one of the main drivers for investment in PQ monitoring systems.

Regulatory compliance and the need to adapt to changing regulations can be another important driver for investment.

Improve efficiency by reducing energy usage and costs for greater sustainability.

$150B
Annual cost of power quality issues*

$130k
Potential lost revenue due to facility downtime*

* LPQI Survey. Report summary: https://leonardo-energy.pl/wp-content/uploads/2017/08/Poor-power-quality-costs-european-business-more-than-150-billion-a-year.pdf

Our solution

- Continuous, high-speed monitoring of steady state and short duration disturbances

- Fast root cause analysis in case of power outages

- Compliance reporting to national and international standards which defines allowable power quality limits and durations

Revenue metering

Revenue metering is relevant where large amounts of energy (or money) are exchanged. Revenue meters measure the use of a particular resource such as electricity, gas or other fuel, accurately calculating revenue owed to either the retailer or supplier.

Market deregulation drives change
and creates new interchange points or metering requirements, often in locations that previously were internal to the utility, presenting a new opportunity to upgrade metering infrastructure.

This causes a need for advanced metering that can provide data accuracy, data security and product robustness and longevity in the field.

Our solution

- High-accuracy devices compliant with the latest international standards

- Anti-tamper mechanisms and cybersecurity

- Multiple communication points and protocols

- Extended mission profile

Explore advanced metering

Discover advanced metering

Explore advanced metering

Perfect for your business

Go further with EcoStruxure

PowerLogic advanced meters, enabling the new electric world

True reliability

As electrical infrastructure evolves, data integrity becomes increasingly important; customers can rely on our devices' data to make critical financial & operational decisions

Tangible results

Our customers need our devices to provide actionable and easy to understand power quality information to effectively use data and analytics to their advantage

Wide versatility

Power systems and regulations are constantly evolving, our customers need flexible power quality monitors that can easily adapt to the new electric world

True reliability

Delivering valuable and ongoing business outcomes

No matter the circumstance, data needs to be accurate and reliable to make critical financial and operational decisions. PowerLogic advanced meters have superior accuracy for both energy and power quality monitoring, complying with the latest relevant international standards.

Learn more about:
- Power quality instruments (PQI) like the PowerLogic ION9000 series
- Power quality and energy accuracy standards
- IEC 62443 conformance

Tangible results

Prevent critical asset downtime and increase electrical system reliability

Our advanced meters provide actionable and easy to understand power quality information. Information that leads to tangible results like decreased downtime. These devices demystify complex power quality phenomena with easy-to-understand and actionable information.

Learn more about:
- EN50160 power quality standards
- IEEE519 harmonic standards
- Disturbance direction detection
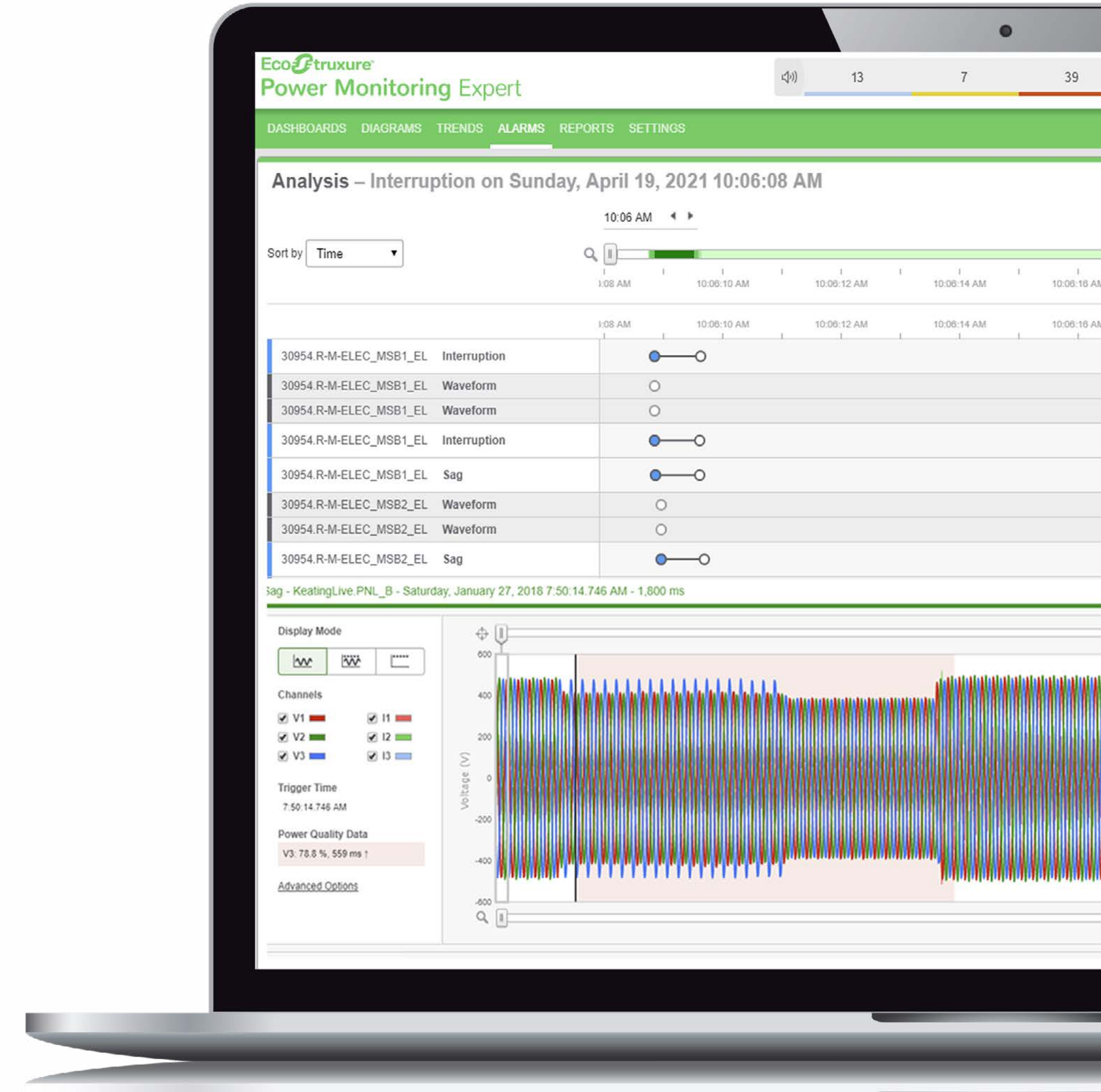
Smart power quality analysis and advanced system forensics available with EcoStruxure™ Power Monitoring Expert

Wide versatility

Tailor to your operations and business requirements

Schneider Electric considers customer challenges and translates its findings into innovation that reflects customer needs. With a fast-changing electrical world, customers need flexible and modular PQ meters that can easily adapt and evolve to changing business missions.

ION Technology in 60 Seconds

Life Is On | Schneider Electric

ION technology lives inside our advanced power meters. It lets you create the power management applications you need. The possibilities are endless. Watch the video

Discover advanced metering

Explore advanced metering

Perfect for your business

Go further with EcoStruxure

Technical specifications

Features	PM8000 Essential	PM8000	PM8000 Advanced	ION9000	ION9000T
Energy accuracy class	0.2S			0.1S	
Sampling rate	256 samples/cycle	256 samples/cycle	512 samples/cycle	1024 samples/cycle	10 MHz
Logging memory	64 MB	512 MB	512 MB	2GB	
Communication ports	Dual Ethernet + 1 x RS485			Dual Ethernet + 2 x RS485 + USB* + optical	
Optional communication port*	4-Wire RS485 and Fiber-Ethernet (1 Fiber Ethernet and 1 4-Wire RS485 option module supported per meter)				
Communication protocols	Modbus RTU and TCP, ION, DNP3, IEC 61850			Modbus RTU and TCP, ION, DNP3, IEC 61850, DLMS	
Time synchronization	PTP, GPS, IRIG-B, NTP/SNTP				
Onboard I/O	3DI / 1DO			8DI / 4DO / 2RO	
Expansion I/O modules	6DI / 2 RO or 2 AO / 4 AI (up to four modules can work simultaneously)				
PQ measurements	THD, individual harmonics (31), sag/swell, waveform capture up to 128 samples/cycle	THD, individual harmonics (63), sag/swell, DDD, waveform capture	THD, individual harmonics (63), sag/swell, DDD, flicker, waveform capture	THD, individual harmonics (63), sag/swell, DDD, extended waveform recording, flicker, transients	THD, individual harmonics (63), sag/swell, DDD, extended waveform recording, flicker, high-speed transients
PQ compliance: IEC 61000-4-30, IEC 62586-1, IEC 62586-2	No / No / No	Class S / No / Yes	Class A / No / Yes	Class A / Yes / Yes	
Hardware lock	Yes				
Cybersecurity	Secure protocol support (HTTPS, SFTP, SSH); user-based access control; ability to enable / disable physical comm ports, TCP ports; audit logging; digital signature, secure password storage				

* Maximum of 4 option modules (Fiber-Ethernet, 4-wire RS485, Expansion I/O) can be connected to the meter's option bus

PowerLogic PM8000 series

Control power

Digital inputs

Voltage inputs

Digital outputs
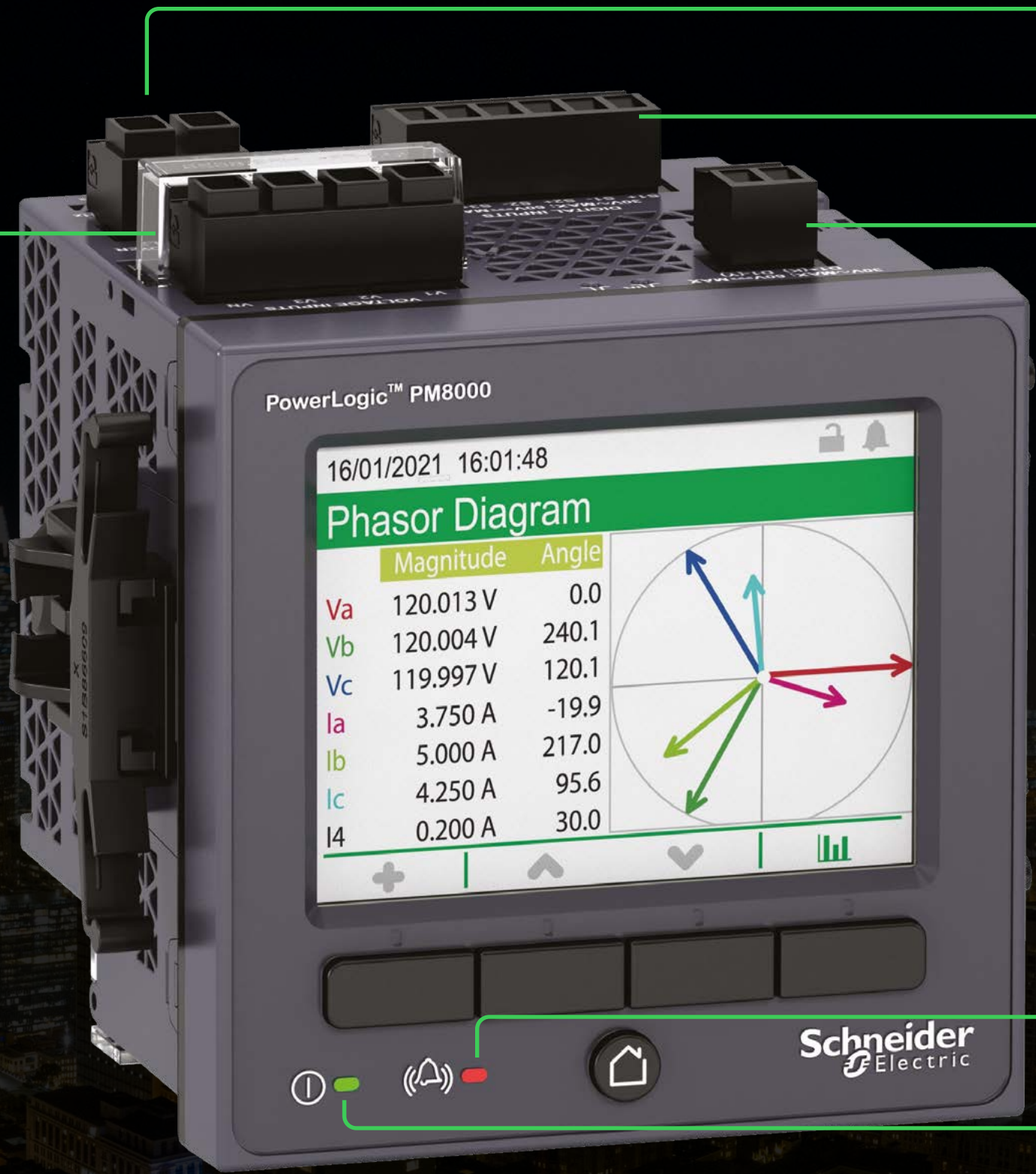
Expansion ports

Dual port Ethernet

RS-485

Current inputs

Mounting clips

Alarm LED

Status LED

Discover advanced metering

Explore advanced metering

Perfect for your business

Go further with EcoStruxure

PowerLogic ION9000 series

Onboard I/O

Sealable covers for voltage, current, and control power

Calibration pulses
• KWh and kVARh

Sealable door
• Memory expansion
• Clock battery
• Hardware lock

Current inputs

Onboard comms
• 2 Ethernet
• 2 RS-485

IP65 / UL certified to resist:
• Water and dust
• Oils and flame

High quality touchscreen
• Guaranteed in harsh temperature/humidity ranges
• 85 viewing angle
• Easily readable in bright or dim conditions

Discover advanced metering

Explore advanced metering

Perfect for your business

Go further with EcoStruxure

Perfect for your business

Perfect for your business

Choose a segment below to see what advanced metering can do for your facility.

Critical Buildings

Includes: data centers, hospitals, universities, large commercial buildings and campuses.

On average, a one-hour power loss event costs a data center $1 million* and a compromised reputation. Plus, in hospitals issues can arise from non-linear loads, inadvertent injection of harmonics and interaction between medical equipment.

Our advanced power meters provide precision accuracy, the ability to quickly locate disturbances, help predict maintenance needs, and aid in monitoring ongoing operations like battery health and runtime variations.

* Source: ITIC 2021 Hourly Cost of Downtime Survey https://techchannel.com/Enterprise/02/2019/cost-enterprise-downtime?microsite=HA-DR-For-Your-Business

Perfect for your business

Choose a segment below to see what advanced metering can do for your facility.

Industry

Includes: automotive, food & beverage, pulp & paper, pharmaceuticals, and semiconductors.

For site managers, facility operators, and head electricians looking to improve availability and uptime, both the PM8000 and ION9000 provide key real-time, historical and PQ information dashboards, and reporting and control.

Combine with EcoStruxure Power edge control software and solutions for detailed preventative views into the electrical infrastructure to help mitigate the events that put your whole business at risk and can also help quickly pinpoint the root cause of power system failures.

Discover how industry is optimizing its power consumption.

Perfect for your business

Choose a segment below to see what advanced metering
can do for your facility.

Energy & Infrastructure

Includes: electrical utilities, renewables, MMM, oil & gas,
airports and telecommunications.

New and diverse industries are appearing and their products
and services require either much finer voltage supply tolerances
or very enhanced reliability, or both. Our advanced meters
deliver the most revealing network picture ever. Combined with
EcoStruxure Power edge control software, your power network
will discover new levels of reliability, efficiency and compliance.

Read our whitepaper on how advanced metering helps optimize
power reliability, energy costs and operational efficiency in a
rapidly changing world of energy.

Discover advanced
metering

Explore advanced
metering

Perfect for your
business

Go further with
EcoStruxure

Take it further with
EcoStruxure

Discover advanced metering

Explore advanced metering

Perfect for your business

Go further with EcoStruxure

A network of certified innovators

Partners that provide cutting-edge solutions

Working with partners we trust is as important to us as it is to our customers. EcoXperts deliver innovative and sustainable solutions, through integrated technology and digitization, to our shared customers. Trained and certified by Schneider Electric, our ecosystem of EcoXpert partners provide best-in-class services and digital solutions that will exceed your expectations.

Digital Services

Reduce maintenance costs and maximize system uptime with real-time data on infrastructure performance. Get actionable predictive maintenance information that protects your customers, safeguards your reputation and minimizes financial impact.

- Optimize energy efficiency and reduce energy-related costs

- Reduce downtime from network issues or equipment failure

- Improve predictive maintenance and reduce reactive maintenance issues

Field Services

Site safety

- Reduce risks during operations

- Maximize site availability and utilization

- Reduce insurance cost

New installations

- Certify the reliability and safety of your equipment

- Fully understand your new installation

- Have a single point of contact during on-site work

Infrastructure maintenance

- Fast replacement of obsolete components with newer, more efficient equipment

- Enhance cybersecurity and safety

- Have access to the right parts at the right time

EcoStruxure innovation at every level

EcoStruxure is Schneider Electric's IoT-enabled, plug-and-play, open, interoperable architecture and platform that unites Power and Building Management with connected devices, edge control software and digital services for enhanced productivity and improved resilience.
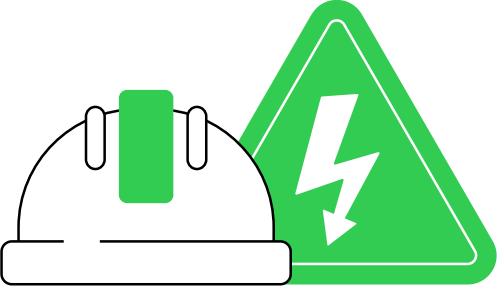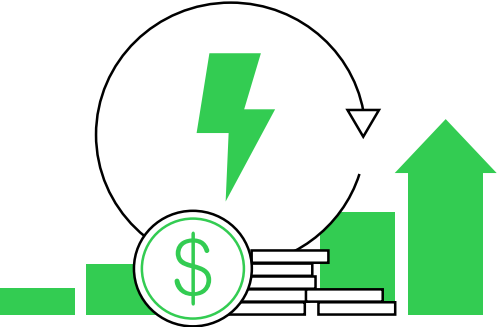
Safe
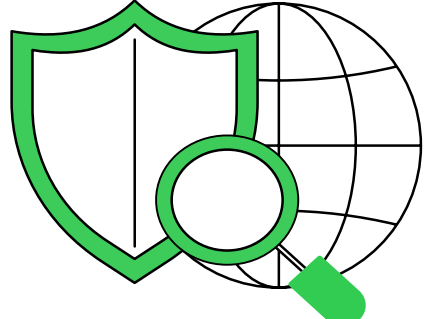Helps ensure safe delivery and operation of clean, reliable power systems

Available
Enhance electrical asset management and avoid electrical downtime.

Efficient
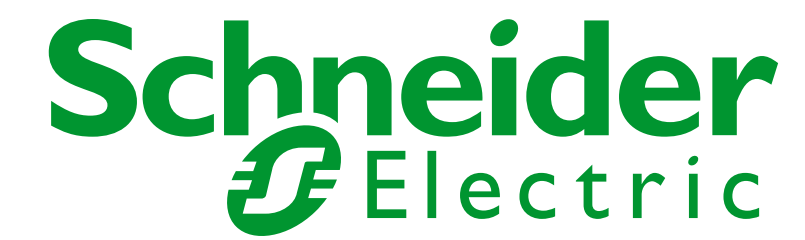Reduce energy usage and costs, and improve sustainability and compliance.

Cybersecure
Helps ensure resilience to cyber threats that impact business operations.

Life Is On | Schneider Electric

To learn more information about Schneider Electric
Advanced Metering, visit