ION8800 series Technical Datasheet

Providing high accuracy and a wide range of features for transmission and distribution metering, the PowerLogic™ ION8800 advanced revenue and power quality meter has the flexibility to change along with your needs. The meter provides the tools necessary to:

- Manage energy procurement and supply contracts
- · Perform network capacity planning and stability analysis
- · Monitor power quality compliance, supply agreements, and regulatory requirements

Applications

- Transmission and distribution metering
- Revenue metering
- Extensive power quality monitoring and analysis
- · Power quality compliance monitoring
- Digital fault recording
- · Instrument transformer correction





ION8800

The solution for

Markets that can benefit from a solution that includes PowerLogic™ ION8800 series meters:

- Transmission networks
- Distribution network

Benefits

- Reduce operations costs
- Improve power quality
- · Improve continuity of service

Competitive advantages

- · Integrated into existing wholesale settlement system
- Able to use EcoStruxure[™] software for data analysis or share operation data with SCADA systems through multiple communication channels and protocols
- Transformer/line loss compensation
- Instrument transformer correction

Power management solutions

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

Conformity of standards

- IEC 62053-22/23 IEC 61000-4-3
- IEC 61000-4-30 IEC 61000-4-4
- EN 50160 IEC 61000-4-5
- IEC 61000-4-7
 IEC 61000-4-6
- IEC 61000-4-15
 IEC 61000-4-12
- CISPR 22
- IEEE 519 IEC 62052-11
- IEC 61000-4-2 IEC 60950

Main characteristics

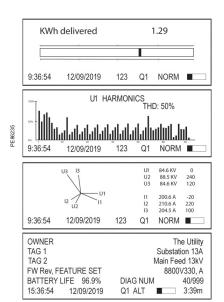
- IEC 19-inch rack mount design to DIN 43862 standard
 - Use Essailec connectors with common measurement and energy pulsing pin-out to easily retrofit into existing systems.
- Accurate metering
 - Interconnection points on medium, high, and ultra-high voltage networks are in compliance with IEC 62053-22/23 Class 0,2S.
- Power quality compliance monitoring
- Monitor compliance with international quality-of-supply standards (IEC 61000-4-30 Class A/S, EN50160, IEC 61000-4-7, IEC 61000-4-15, IEEE 1159, IEEE 519).
- Power quality summary
- Consolidate power quality characteristics into easily viewable reports indices.
- Digital fault recording
 - Capture voltage and current channels simultaneously for sub-cycle disturbances.
- Complete communications
 - Use the IEC1107 optical port or the optional communications module that supports concurrent Ethernet, serial, and modem communications.
- Multiple tariffs and time-of-use
 - Apply tariffs and seasonal rate schedules to measure energy and demand values for time periods with specific billing requirements.
- Alarms and I/O functions
- Use up to 65 setpoints for single/multi-condition alarms and I/O functions with response times down to 1/2 cycle.
- Alarm notification via email
 - High-priority alarms, data logs sent directly to the user's PC. Instant notification of power quality events by email.
- Software integration
 - Easily integrate the meter with EcoStruxure[™] Power Monitoring Expert, EcoStruxure[™] Power Operation, or other utility software; MV-90, Pacis and third-party SCADA packages.
- Transformer/line loss compensation
 - Compensate for system losses in real time directly in the meter.
- Instrument transformer correction
 - Save money and improve accuracy by correcting for less accurate transformers.

Version: 1.0 - 14/10/2021 PLSED306009EN



PowerLogic™ ION8800 meter

- Optional communications module.
- Essailec connectors.
- 4 5
- Internal modem.
 Optional Ethernet communications.
 Selectable RS-485 serial port.
 Selectable RS-232 or RS-485 serial port.
- Ground terminal.



Display screen examples: KWh disk simulator, voltage harmonics histogram, phasor diagram, and name plate1.

Selection guide

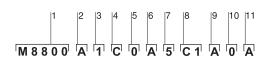
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Digital inputs (optional) 3 3 Communications RS-232/485 port 1 1 RS-485 port 1 1 Ethernet port 1 1 1 IEC 1107 optical port 1 1 1 Internal modem 1 1 1 3-port DNP 3.0 through serial, modem, Ethernet and I/R ports ■ ■ Modbus RTU master / slave (serial, modem and I/R ports) ■ / ■ -/ ■ Modbus TCP master / slave (via Ethernet port) ■ / ■ -/ ■ DLMS/COSEM RS-485 port or Ethernet ■ ■ Data transfer between Ethernet and RS-485 ■ ■ (EtherGate) ■ ■ Data transfer between internal modem, RS-485 ■ ■ (ModemGate) ■ ■ Alarms, single or multi-condition ■ ■ Alarm notification & logged data via email ■ ■ Embedded web server (WebMeter) ■ ■	Min/max logging for any parametric Historical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional	Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB	80 64 0.001 ½ cycle 65 10 MB		
RS-232/485 port	Min/max logging for any parametric Historical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB	80 64 0.001 ½ cycle 65 10 MB		
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Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, modem, Ethernet and I/R ports Modbus RTU master / slave (serial, modem and I/R ports) Modbus TCP master / slave (via Ethernet port) DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarm, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional)	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB	80 64 0.001 ½ cycle 65 10 MB		
IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, modem, Ethernet and I/R ports Modbus RTU master / slave (serial, modem and I/R ports) Modbus TCP master / slave (via Ethernet port) DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB	80 64 0.001 ½ cycle 65 10 MB 8 4 1 3		
Internal modem 3-port DNP 3.0 through serial, modem, Ethernet and I/R ports Modbus RTU master / slave (serial, modem and I/R ports) Modbus TCP master / slave (via Ethernet port) DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB	80 64 0.001 ½ cycle 65 10 MB 8 4 1 3		
3-port DNP 3.0 through serial, modem, Ethernet and I/R ports Modbus RTU master / slave (serial, modem and I/R ports) Modbus TCP master / slave (via Ethernet port) DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB	80 64 0.001 ½ cycle 65 10 MB 8 4 1 3		
I/R ports Modbus RTU master / slave (serial, modem and I/R ports)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port Ethernet port	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 3	80 64 0.001 ½ cycle 65 10 MB 8 4 1 3		
Modbus RTU master / slave (serial, modem and I/R ports) Modbus TCP master / slave (via Ethernet port) DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 3	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1		
ports) Modbus TCP master / slave (via Ethernet port) DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 3	80 64 0.001 ½ cycle 65 10 MB 8 4 1 3 1 1 1 1 1		
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DLMS/COSEM RS-485 port or Ethernet Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, m I/R ports Modbus RTU master / slave (ser	Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1		
Data transfer between Ethernet and RS-485 (EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, m I/R ports Modbus RTU master / slave (serports)	Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1		
(EtherGate) Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametric Historical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, mI/R ports Modbus RTU master / slave (serports) Modbus TCP master / slave (via	Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1		
Data transfer between internal modem, RS-485 (ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametric Historical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, m I/R ports Modbus RTU master / slave (ser ports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or E	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1		
(ModemGate) Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, m I/R ports Modbus RTU master / slave (serports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or Educations)	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Alarms, single or multi-condition Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, mI/R ports Modbus RTU master / slave (serports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or E Data transfer between Ethernet (EtherGate)	Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 -/ -/ -/ -/ -/ -/ -/ -/ -/ -/ -/ -/ -/		
Alarm notification & logged data via email Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, m I/R ports Modbus RTU master / slave (ser ports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or ED Data transfer between Ethernet (EtherGate) Data transfer between internal memory of the parameter of the content	Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 -/ -/ -/ -/ -/ -/ -/ -/ -/ -/ -/ -/ -/		
Embedded web server (WebMeter)	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response to Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, mI/R ports Modbus RTU master / slave (ser ports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or Education Data transfer between Ethernet (ModemGate)	Maximum # of records Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, mI/R ports Modbus RTU master / slave (ser ports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or ED ata transfer between Ethernet (EtherGate) Data transfer between internal medical conditions (ModemGate) Alarms, single or multi-conditions)	Maximum # of records Maximum # of records Maximum # of records ds me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C and Ethernet and lial, modem and l/R Ethernet port) Ethernet and RS-485 modem, RS-485	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
	Min/max logging for any parametristical logs Waveform logs Timestamp resolution in second Setpoints, minimum response ti Number of setpoints GPS time synchronisation (IRIG Could add transient logs. COM' User configurable log memory Display and I/O Front panel display Active/reactive energy pulser, L port Digital pulse outputs, optional Digital pulse outputs Alarm relay output Digital inputs (optional) Communications RS-232/485 port RS-485 port Ethernet port IEC 1107 optical port Internal modem 3-port DNP 3.0 through serial, m I/R ports Modbus RTU master / slave (ser ports) Modbus TCP master / slave (via DLMS/COSEM RS-485 port or Educations) Data transfer between Ethernet (EtherGate) Data transfer between internal re (ModemGate) Alarms, single or multi-condition Alarm notification & logged data	Maximum # of records Maximum # of records Is me -B) TRADE fault records. ED and IEC 1107 style Solid state Form A Solid state Form C Form C Todem, Ethernet and iial, modem and I/R Ethernet port) Ethernet and RS-485 modem, RS-485 modem, RS-485	960 (+3) 800 (+4) 96 (+3) 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1	80 64 0.001 ½ cycle 65 10 MB 8 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		

⁽⁺³⁾ ION8800A only.

⁽⁺⁴⁾ ION8800B only.

Part numbers

Item	1	Code	Description
1	Model	M8800	ION8800 IEC/DIN 43862 19" rack mount energy and power quality meter
2	Feature Set	А	Class A power quality analysis, waveforms and transient capture with 1024 samples/cycle
		В	Energy meter Class S EN50160 power quality monitoring
		С	Basic tariff/energy revenue meter with sag/swell monitoring
	Memory/Form	1	10 MB logging memory, Essailec connectors
	Factor	2	5 MB logging memory, Essailec connectors, with IEC61850 protocol
4	Current Inputs	С	(I1-I3): Configured for 5 A nominal, 10 A full scale, 14 A fault capture, 0.001 A starting current
		E	(I1-I3): Configured for 1 A nominal, 10 A full scale, 14 A fault capture, 0.001 A starting current
5	Voltage Inputs	0	(V1-V3): Autoranging (57-288 VAC L-N or 99-500 VAC L-L)
6	Power Supply	В	Single phase power supply: 85-240 VAC ±10% (47-63 Hz) or 110-270 VDC
7	System	5	Calibrated for 50 Hz systems
	Frequency	6	Calibrated for 60 Hz systems
8	Communications	Z0	No communications module - meter includes Base Onboard I/O and comms (see below for details)
	module (field serviceable)	A0	Standard communications: 1 RS 232/RS-485 port, 1 RS-485 port (COM2) (+5)
		C1	Standard communications plus 10BASE-T Ethernet (RJ45), 56 k universal internal modem (RJ11)
		D1	Standard communications plus 10BASE-T/100BASE-TX Ethernet (RJ45) / 10Base-FL/100BASE-FX Ethernet Fiber, 56 k universal internal modem (RJ11)
		E0	Standard communications plus 10BASE-T/100BASE-TX Ethernet (RJ45)
		F0	Standard communications plus 10BASE-T/100BASE-TX Ethernet (RJ45) / 10Base-FL/100BASE-FX (ST male Fiber Optic connection)
		M1	Standard communications plus 56k universal internal modem (RJ11)
9	Onboard	А	Base option AND 8 Form A digital outputs (+6), 1 RS-485 (COM2) port (+5)
	I/O and communications	В	Base Option AND 8 Form A digital outputs (+6), 3 digital inputs (20-56 VDC/AC)
	(not field serviceable, part of base unit)	С	Base Option AND 8 Form A digital outputs (+6), 3 digital inputs (80-280 VDC/AC)
		D	Base Option AND 1 IRIG-B time sync port (+6), 1 RS-485 port (COM2), 3 digital inputs (20-56 V DC/AC) (+5)
		E	Base Option AND 1 IRIG-B time sync port (+6), 1 RS-485 port (COM2), 3 digital inputs (80-280 V DC/AC) (+5)
10	Security	0	Password protected, no security lock
		1	Password protected with security lock enabled
11	Special Order	A	None
		С	Tropicalisation treatment applied



Example product part number.

- Model
- Model
 Feature set
 Memory | form factor
 Current Inputs
 Voltage inputs

- Voltage inputs
 Power supply
 System frequency
 Communications
 Onboard inputs/outputs
- 10 Security 11 Special order

⁽⁺⁵⁾ Channel COM2 is available on the port at the back of the meter OR on the Comm Module (if installed). You must select which connectors your communications wiring is connected to during meter setup.

(*6) All Onboard I/O and Comms (Base Option) options include: 4 Form C solid-state digital outputs, 1 Form C mechanical relay output, one IEC 1107 optical

communications port, two IEC 1107 style optical pulsing ports.

ION8800 Accessories

Ordering reference	Communication Card for ION8800	
P880CA0A	Std. comms: 1 RS-232/RS-485 port, **1 RS-485 port (COM2)	
P880CA0C	Std. comms: 1 RS-232/RS-485 port, **1 RS-485 port (COM2), tropicalisation treatment applied	
P880CC1A	Std. comms AND 10/1000BASE-TX Ethernet (RJ45), 56k universal internal modem (RJ11)	
P880CC1C	Std. comms AND 10/1000BASE-TX Ethernet (RJ45), 56k universal internal modem (RJ11), tropicalisation treatment applied	
P880CD1A	Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX Ethernet Fiber, 56k universal internal modem (RJ11)	
P880CD1C	Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX Ethernet Fiber, 56k universal internal modem (RJ11), tropicalisation treatment applied	
P880CE0A	Std. comms AND 10/1000BASE-TX Ethernet (RJ45)	
P880CE0C	Std. comms AND 10/1000BASE-TX Ethernet (RJ45), tropicalisation treatment applied	
P880CF0A	Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX (ST Fiber Optic connection)	
P880CF0C	Std. comms AND 10/1000BASE-TX Ethernet (RJ45) / 10/100BASE-FX (ST Fiber Optic connection), tropicalisation treatment applied	
P880CM1A	Std. comms AND 56k universal internal modem (RJ11)	
P880CM1C	Std. comms AND 56k universal internal modem (RJ11), tropicalisation treatment applied	
Ordering reference	ng reference ION8800 related items	
BATT-REPLACE-8XXX Replacement batteries for the ION8600 or ION8800, quantity 10		
RACK-8800-RAW	IEC/DIN 34862 19" Rack with female mating voltage/current and I/O blocks unassembled.	
IEC-OPTICAL-PROBE	IEC 61107 compliant Optical Probe (DB-9) for use with ION8800 meters	

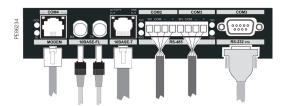


Optional ION8800 communications module

Technical Specification

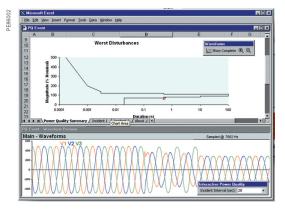
recrimical	Specification	
Electrical cha	racteristics	
Type of measurement		True rms 1024 samples per cycle
	Current and voltage	0.1 %
	Power	0.2 %
Measurement accuracy	Frequency	±0.005 Hz
accuracy	Power factor	0.1%
	Energy	IEC 62053-22/23 Class 0.2 S
Data update rate	е	½ cycle or 1 second
	Inputs	U1, U2, U3, Uref
Input-voltage	Measurement range	57-288 L-N V AC rms (99-500 L-L V AC rms)
characteristics	Dielectic withstand	3320 V AC rms
	Impedance	5 MΩ per phase (phase-Uref/Ground)
	Rated nominals	5 A, 1 A, 2 A
Input-current	Permissible overload	200A rms for 0.5s, non-recurring (IEC 62053-22)
characteristics	Impedance	10 mW /phase
	Burden	0.01 VA per phase (1A), 0.25 VA per phase (5 A)
	AC	85 - 240 V AC (+/- 10 %), 47-63 Hz
	DC	110 - 270 V DC (+/- 10 %)
	DC	†
Power supply	Burden	Typical (without comm module): 13 VA, 8 W Typical (with comm module): 19 VA, 12 W Max (without comm module): 24 VA, 10 W Max (with comm module): 32 VA, 14 W
	Ride-through time	Typical: 0.5 s to 5 s depending on configuration Min: 120 ms (6 cycles @ 50 Hz)
	Dielectric withstand	2000 V AC
	Mechanical alarm relay	1 Form C digital output (250 V AC / 125 V DC, 1 A AC / 0.1 A DC max)
	Digital outputs (Form C)	4 Solid state relay outputs (210 V AC / 250 V DC) 100 mA AC/DC
Input/outputs	Digital outputs (Form A)	8 Solid state relay outputs (210 V AC / 250 V DC) 100 mA AC/DC
	Digital inputs	3 Solid state digital inputs (low-voltage inputs 15 to 75 V AC/DC; high-voltage inputs 75 to 280 V AC/DC; 3 mA max.)
	Pulse rate	20 Hz maximum
Mechanical ch	naracteristics	
Weight		6.0 kg (6.5 kg with optional communications module)
IP degree of pro	otection (IEC 60529)	IP51
Dimensions		202.1 x 261.51 x 132.2 mm
Environmental	conditions	
Mounting location		Indoor
Maximum altitud		2000 metres above sea-level
Limit range of o	<u> </u>	-25 °C to 70 °C
	ting temperature	-10 °C to 45 °C (as per 62052-11)
Display operating range		-10 °C to 60 °C
Storage temperature		-25 °C to 70 °C
Humidity rating		5 to 95 % RH non-condensing
Pollution degree		2
Installation category		Power supply (II) Metering inputs (III)
Electromagnet	tic compatibility	
Electrostatic discharge		IEC 61000-4-2
Immunity to radiated fields		IEC 61000-4-3
Immunity to fast transients		IEC 61000-4-4
Immunity to surge waves		IEC 61000-4-5
Conducted immunity		IEC 61000-4-6
Damped oscillatory waves immunity		IEC 61000-4-12
Conducted and radiated emissions		CISPR 22 (class B)
Safety		
		A
Europe		As per IEC 62052-11
International		As per IEC 60950

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Ports on the optional communications module.

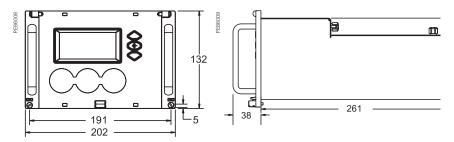


Example embedded page showing realtime values.

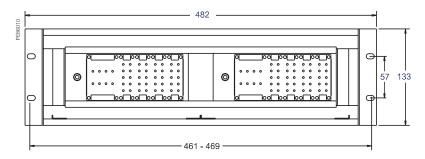
Technical Specification

Communication				
IEC 1107 optical port	2/4 wires, up to 19200 baud			
RS-485 port	Up to 57600 baud, direct connection to a PC or modem, protocols: ION, Modbus RTU, Modbus Master, DNP 3.0, GPSTRUETIME/DATUM, DLMS/COSEM			
Communications module (option	onal)			
RS-232/485 port	300 - 115,200 baud (RS-485 limited to 57,600 baud); protocols: same as RS-485 port			
Internal modem port	300 baud - 56000 baud, RJ11 connector			
Ethernet port	10/100BASE-TX, RJ45 connector, 100 m link; protocols: DNP TCP, ION, Modbus TCP, Modbus Master, DLMS/ COSEM, IEC 61850			
Fiber-optic Ethernet link	10/100BASE-FX, ST connector, 1300 nm, FO multimode with gradient index 62.5/125 μ m or 50/125 μ m, 2000 m link; protocols: same as Ethernet port			
EtherGate	Communicates directly with up to 62 slave devices via available serial ports			
ModemGate	Communicates directly with up to 31 slave devices			
Firmware characteristics				
High-speed data recording	Up to ½-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 63 rd harmonic for all voltage and current inputs			
Dip/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 or control operations			
Instantaneous	High accuracy measurements with 1s or 1/2 cycle update rate for: voltage and current active power (kW) and reactive power (kvar) apparent power (kVA) power factor and frequency voltage and current unbalance phase reversal			
Load profiling	Channel assignments (800 channels via 50 data recorders) are configurable for any measureable 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.			
Modbus Master	Master up to 32 slave devices per serial channel and store their data at programmable intervals. Use this data to aggregate and sum energy values and perform complex totaling.			
Waveform captures	Simultaneous capture of all voltage and current channels sub-cycle disturbance capture maximum cycles is 214,000 (16 samples/cycle x 96 cycles, 10 MB memory) 1024 samples/cycle			
Alarms	Threshold alarms: adjustable pickup and dropout setpoints and time delays, numerous activation levels possible for a given type of alarm user-defined priority levels boolean combination of alarms possible			
Advanced security	Up to 50 users with unique access rights. Perform resets, time syncs, or meter configurations based on user privileges.			
Transformer correction	Correct for phase / magnitude inaccuracies in current transformers (CTs), potential transformers (PTs)			
Memory	5 -10 MB(specified at time of order)			
Firmware update	Update via the communication ports			
Display characteristics				
Type	FSTN transreflective LCD			
Backlight Languages	LED English			

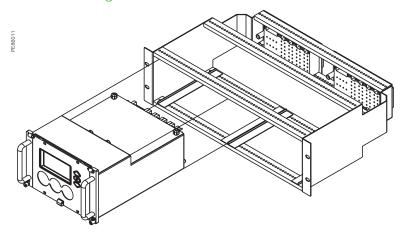
ION8800 dimensions



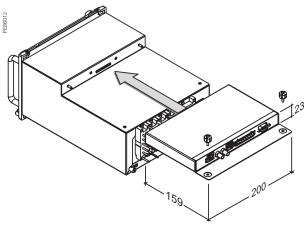
ION8800 Essailec rack dimensions



Rack mounting the ION8800



ION8800 communication module dimensions



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



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PowerLogic™ ION8800 Series

PLSED306009EN

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