

PowerLogic power-monitoring units

ION7300 series

Technical data sheet



ION7300 Series

Functions and characteristics



PowerLogic™ ION 7300 Series meter.

Used in enterprise energy management applications such as feeder monitoring and sub-metering, ION7300 Series meters offer unmatched value, functionality, and ease of use. ION7300 Series meters interface to PowerLogic StruxureWare software or other automation systems to give all users fast information sharing and analysis.

ION7300 Series meters are an ideal replacement for analogue meters, with a multitude of power and energy measurements, analogue and digital I/O, communication ports, and industry-standard protocols. The ION7330 meter has on-board data storage, emails of logged data, and an optional modem. The ION7350 meter is further augmented by more sophisticated power quality analysis, alarms and a call-back-on-alarm feature.

Applications

Power monitoring and control operations.
Power quality analysis.
Cost allocation and billing.
Demand and power factor control.
Load studies and circuit optimisation.
Equipment monitoring and control.
Preventive maintenance.

Main characteristics

Accurate metering

Ensure metering accuracy with compliance to IEC 60687 class 0,5S standard.

Multiple communications options: Ethernet - Serial - Modem

Gateway functionality simplifies communications architecture and reduces leased line or connection costs. Concurrent, independent ports communicate with a variety of protocols such as ION, DNP 3.0, Modbus RTU, and Modbus TCP.

Easy to read display

An easy-to-read front panel with a back-lit LCD screen supports local data display and basic setup.

Set automatic alarms

Use configurable event priorities, logical operators, and setpoints to define alarm conditions and set alarms.

Integrate with software

Easily integrate ION7300 Series meters with an energy management or SCADA system to provide remote display at a PC workstation, as well as remote configuration and manual control capabilities.

Notification of alarms via email

Alarm notifications sent via email to any workstation, cell phone, pager, or PDA.

Server for custom HTML pages

An on-board Web server combined with an Ethernet port offers quick and easy access to real-time energy and basic power quality information without special software.

Monitor dips and swells (ION7350)

Detect dips and swells on any voltage channel.

Interoperability expands existing networks

The ION7330/ION7350 concurrently communicates via multiple protocols, allowing you to extend an existing Modbus, DNP, or Enterprise network.

Memory

Non-volatile memory (300kB) ensures that valuable information can be preserved between intervals.

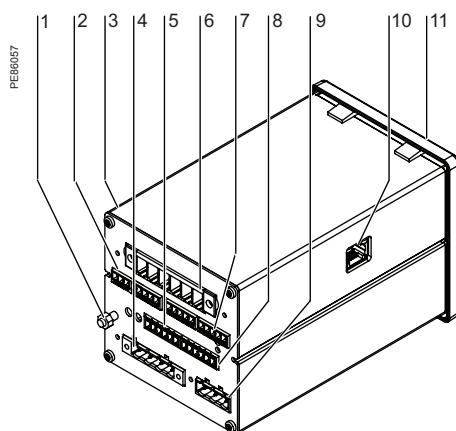
Part numbers

ION7300 series	
ION7330	M7330
ION7350	M7350

Refer to the part number section for further explanations.

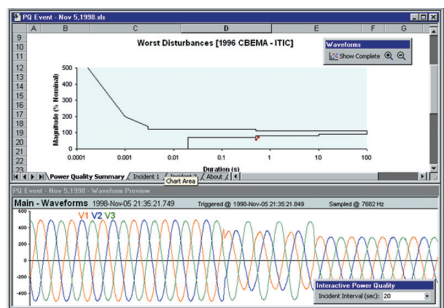
ION7300 Series

Functions and characteristics (cont.)



PowerLogic ION7330/ION7350

- 1 Chassis Ground
- 2 Analogue Inputs
- 3 Internal Modem Port
- 4 Voltage Inputs
- 5 Digital Outputs
- 6 Current Inputs
- 7 Digital Inputs
- 8 RS-485 Bus
- 9 Power Supply
- 10 Ethernet Port
- 11 IR Port



Disturbance waveform capture and power quality report.

Selection guide		ION7330	ION7350
General			
Use on LV and HV systems		■	■
Current and voltage accuracy		0.25% + 0.05 % full scale	
Power accuracy	Real (kW)	0.5% reading	
	Apparent (kVA)	0.5% + 0.1%	
	Reactive (kvar)	1.5% reading	
Energy accuracy	Real (kWh)	0.5% reading	
	Apparent (kVAh)	1.0% reading	
	Reactive (kvarh)	1.5% reading	
Number of samples per cycle		32	64
Instantaneous rms values			
Current, voltage, frequency		■	■
Active, reactive, apparent power		■	■
Power factor		■	■
Energy values			
Active, reactive, apparent energy		■	■
Settable accumulation modes		■	■
Demand values			
Current		■	■
Active, reactive, apparent power		■	■
Predicted active, reactive, apparent power		■	■
Synchronisation of the measurement window		■	■
Setting of calculation mode		■	■
Power quality measurements			
Harmonic distortion		■	■
Individual harmonics		15th	31st
Waveform capture		-	■
Detection of voltage dips and swells		-	■
Data recording			
Min/max of instantaneous values		■	■
Historical logs		max. # of channels	32
Waveform logs		max. # of channels	48
Trending / forecasting		-	■
Alarms		■	■
Time stamp resolution (s)		0.001	0.001
300 Kbyte memory		■	■
Display and I/O			
Display		■	■
Wiring self-test		■	■
Analogue inputs / analogue outputs		4/4	4/4
Digital status inputs/counter		4	4
Digital relay outputs		4	4
Communication			
RS-485 port		2	2
Modbus protocol		■	■
Ethernet (Modbus/TCP/IP protocols)		1	1
Ethernet gateway (EtherGate)		■	■
Internal modem		1	1
Modem gateway (ModemGate)		■	■
Infrared optical port		1	1
DNP 3.0 via serial, modem, IR ports		■	■
HTML page web server (WebMeter)		■	■

ION7300 Series

Functions and characteristics (cont.)

PE86236



PowerLogic ION7300 Series remote terminal display.

Electrical characteristics

Type of measurement	True rms up to the 15th harmonic (31st for ION7350) 32 samples/cycle (64 for ION7350)	
Measurement accuracy	Current and voltage	0.25% + 0.05%
	Power	Real: 0.5% reading Apparent: 0.5% + 0.1% Reactive (>5% FS): 1.5% reading
	Frequency	± 0.01 Hz
	Power factor (at Unity PF)	± 1.5% reading
	Energy ⁽¹⁾	kWh: 0.5% reading kVAh: 1.0% reading kvarh: 1.5% reading
Data update rate	1 second	
Input-voltage characteristics	Measured voltage	50 - 347 VAC L-N 3-phase (87-600 L-L) 50 - 300 VAC L-N single phase (100 - 600 L-L)
	Metering over-range	25%
	Overload withstand	1500 VAC continuous 3250 VAC for 1 second non-recurring
	Impedance	>2 M Ω/phase (phase - Vref)
	Frequency range	40 - 70 Hz
Input-current characteristics	CT ratings	5 A nominal / 10 A full scale
	Measurement range	20 mA - 10 A rms (+20%, 300 V rms to ground)
	Overload withstand	20 A continuous 500 A for 1 second non-recurring
	Burden	Worst case (at 10 A): 0.0625 VA
	Impedance	> 2 M Ω/phase (phase-Vref)
Power supply	AC	95 - 240 VAC (± 10%), (47 - 440 Hz)
	DC	120 - 310 VDC (± 10%) 0.2 A worst case loading (12 W) at 100 VAC at 25°C
	P24 option	20 to 60 VDC (± 10%)
Input/outputs	4 Digital status inputs (7330/7350)	Self-excited (internal 30 VDC supply); Min pulse width: 25 msec; Max 40 transitions/sec
	4 digital outputs	Form A Solid State; Max forward current: 80 mA Max voltage: 30 V
	4 optional analogue inputs	0-20 mA (scalable to 4-20 mA) option Input impedance: 24.3 Ohms; Accuracy: < ± 0.3% of full-scale; Update rate: 1 second; Max common mode voltage: 30 V; Sample rate: 16 samples/second 0-1 mA option same as above except: Input impedance: 475 Ohms
	4 optional analogue outputs	0-20 mA (scalable to 4-20 mA) option Max load drive capability: 500 Ohms; Accuracy: ± 0.3% of full-scale; Max common mode voltage: 30 V 0-1 mA option same as above except: Max load drive capability: 10 kOhms

Mechanical characteristics

Weight	1.8 kg	
IP degree of protection	Integrated display: front IP 50; back IP 40 Transducer unit (no display): IP 40	
Dimensions	Standard model	96 x 96 x 162.2 mm
	TRAN model	60 x 100 x 164.5 mm

Environmental conditions

Operating temperature	-20 to +60° C ambient air
Storage temperature	-30 to +85°C
Humidity rating	5% to 95% non-condensing
Altitude	Less than 2000 m above sea level
Installation category	III, for distribution systems
Pollution degree	2
Dielectric withstand	As per IEC 61010, UL3111

Electromagnetic compatibility

Electrostatic discharge	EN 60687:1993
Immunity to electromagnetic HF fields	EN 60687:1993
Immunity to fast transients	IEC 61000-4-4
Conducted and radiated emissions	EN 55014-1:1993

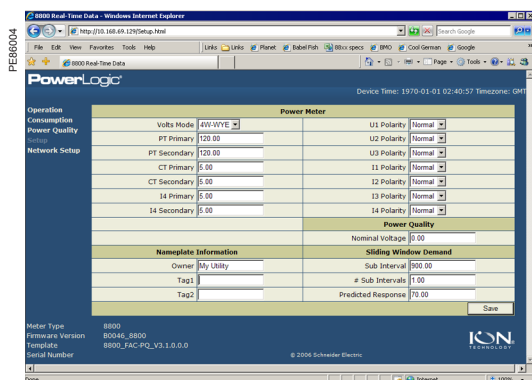
Safety

Europe	IEC 1010-1
USA and Canada	UL 3111 and CSA C22.2 No. 1010-1

⁽¹⁾ Accuracy complies with IEC 687 class 0.5S and ANSI 12.20 class 0.5 at 25°C.

ION7300 Series

Functions and characteristics (cont.)



Example WebMeter page showing realtime values.

Communication

RS-485 ports	Optically isolated Up to 19,200 bauds Protocols: ION, DNP 3.0, Modbus RTU, GPS
Ethernet port (Modbus TCP protocol)	Up to 10 Mbps With EtherGate Optional 10Base-T
Infrared optical port	Front panel ANSI Type 2 Up to 19,200 bauds Protocols: ION, Modbus RTU, DNP 3.0
Internal modem	From 300 to 33,600 bauds ModemGate Call-back feature ⁽¹⁾

Firmware characteristics

Data logs	Scheduled or event driven 7330: Maximum of 2 data logs, 32 parameters 7350: Maximum of 6 data logs, 96 parameters
Harmonic distortion	Individual and total up to the 15th harmonic (31st for 7350)
Sag/swell detection ⁽¹⁾	Detects dips and swells on any voltage channel
Instantaneous	True rms, per phase, and total for: - Voltage and current - Active (kW), reactive (kvar), and apparent (kVA) power - Power factor and frequency - Voltage and current unbalance
Min/max logging	Perform on any parameter, over any time interval Min and max values for all basic power parameters: - Voltage per phase - Current per phase - Active (kW), reactive (kvar), apparent (kVA) power - Power factor & frequency - Rolling block demand for kW, kvar, kVA
Waveform captures	Simultaneous capture of events on all channels. up to 48 cycles each, 64 samples/cycle. Maximum of 6,900 cycles for contiguous waveform capture
Alarms	Single- and multi-condition alarms, call-out on alarms, define alarms conditions with configurable event priorities
Memory	300 kB standard

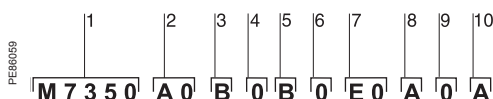
Display characteristics

Integrated display	4-parameter to single parameter large character displays, back-lit LCD with adjustable contrast
Languages	English

⁽¹⁾ Available on ION7350 only.

ION7300 Series

Functions and characteristics (cont.)



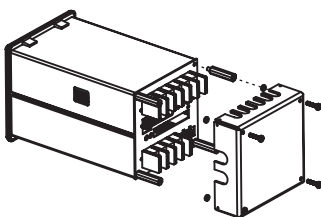
Example and explanation of product part number.

Part numbers		
Item	Code	Description
1 Model	M7350	ION7350: Advanced power meter with basic sag/swell detection, waveform recording, harmonics (up to the 31st), high-speed data logging and automatic modem dial-out, multi-port communications, 4 digital inputs and 4 digital outputs.
	M7330	ION7330: Advanced power meter with over 200 high-accuracy, 3-phase measurements, data logging, multiport communications, 4 digital inputs and 4 outputs
2 Form factor	A0	Integrated display, with front optical port
	R0	Transducer with RMD (remote display), with front optical port. DOES NOT support Analogue Input and/or Analogue Output options. Not available with Security options RMICAN or RMICAN-SEAL.
	R1	Same as R0, but with DIN rail mounts on the transducer. DOES NOT support Analogue Input and/or Analogue Output options.
	T0	Transducer (no display). Note you cannot use an RMD on this meter if you order the Analogue Input and/or Analogue Output options. Not available with Security options RMICAN or RMICAN-SEAL.
	T1	Transducer (no display) with DIN rail mount. Note you cannot use an RMD on this meter if you order the Analogue Input and/or Analogue Output options. Not available with Security options RMICAN or RMICAN-SEAL.
3 Current inputs	B	5 Amp nominal, 10 Amp full scale current input
4 Voltage inputs	0	Autoranging (50 to 347 VAC +25%)
5 Power supply	B	P240 power supply (95-240 VAC/47-4f40 Hz/120-310 VDC)
	C	P24 power supply (20 to 65 VDC)
6 System frequency	0	Autoranging (50 and 60 Hz)
7 Communications	Z0	No communications.
	A0	Two RS-485 ports
	C1	One RS-485 EtherGate port, one RS-485 ModemGate port, 10Base-T Ethernet (RJ45), 33.6k universal internal modem. DOES NOT support Analogue Input and/or Analogue Output options.
	M1	One 33.6k universal internal modem (RJ11) port, one RS-485 port, one RS-485 ModemGate port.
	E0	One RS-485 port, one 10Base-T Ethernet (RJ45)
8 Inputs/Outputs	A	No analogue inputs/outputs. You must choose this option if ordering Display-only or RMD remote display options (Form Factor types "D" or "R"), or Ethernet option (Communications options "E0").
	M	Four 0 to 1 mA analogue inputs & four 0 to 1 mA analogue outputs. NOT AVAILABLE with RMD or Ethernet options
	N	Four 0 to 20 mA analogue inputs & four 0 to 20 mA analogue outputs. NOT AVAILABLE with RMD or Ethernet options
9 Security	0	Password protected, no hardware lock
	2	Password protected with hardware lock enabled
	3	(ION7330 model only) RMICAN Measurement Canada approved
	4	(ION7330 model only) RMICAN-SEAL Measurement Canada approved, factory sealed ⁽¹⁾
	6	Password protected with security lock enabled, terminal cover and UK OFGEM labels
10 Special order	A	None
	B	Pre-set to MODBUS (available for Form Factor T0, T1, T2 and T3 only). Not available with Security options RMICAN or RMICAN-SEAL.
	C	Tropicalisation treatment applied
	D	Tropicalisation treatment applied and pre-set to MODBUS (available for Form Factor T0, T1, T2 and T3 only). Not available with Security options RMICAN or RMICAN-SEAL.

⁽¹⁾A completed ION7300 series RMICAN-SEAL checklist must accompany each RMICAN-SEAL meter order.

ION7300 Series

Functions and characteristics (cont.)



Terminal strip cover.

Part numbers (cont'd)

Transducer unit

ION7330 TRAN	No display	T0
	With DIN rail mount	T1
ION7350 TRAN	No display	T0
	With DIN rail mount	T1

Communications

ION7330	Two RS-485 ports	A0
	One RS-485 EtherGate port, one RS-485 ModemGate port, 10Base-T Ethernet (RJ45), 33.6k universal internal modem ¹	C1
	One 10Base-T Ethernet (RJ45) port, one RS-485 port, one RS485 EtherGate port ¹	E0
	One 33.6k universal internal modem (RJ11) port, one RS-485 port, one RS-485 ModemGate port	M1
ION7350	Two RS-485 ports	A0
	One RS-485 EtherGate port, one RS-485 ModemGate port, 10Base-T Ethernet (RJ45), 33.6k universal internal modem (RJ11) ¹	C1
	One 10Base-T Ethernet (RJ45) port, one RS-485 port, one RS-485 EtherGate port ¹	E0
	One 33.6k universal internal modem (RJ11) port, one RS-485 port, one RS-485 ModemGate port	M1

Remote modular display

Remote Modular Display with 6 foot DB25 cable	RMD-7330
Remote Modular Display with 6 foot DB25 cable	RMD-7350

Terminal strip cover

Terminal strip cover	TERMCVR-73XX
----------------------	---------------------

DB9 optical probe

Optical probe (DB-9) for use with ION7300 Series meters	OPTICAL-PROBE
---	----------------------

Water resistant gasket

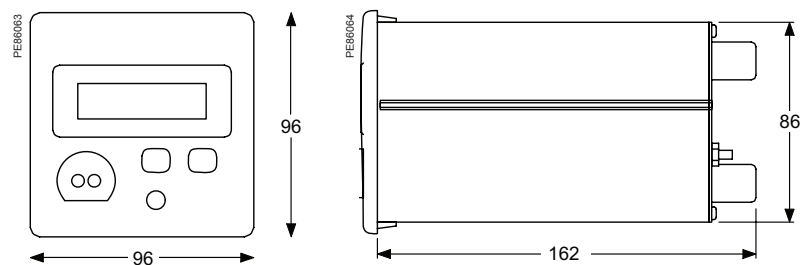
Water resistant gasket	GSKT
------------------------	-------------

⁽¹⁾ Does NOT support Analogue Input and/or Analogue Output options.

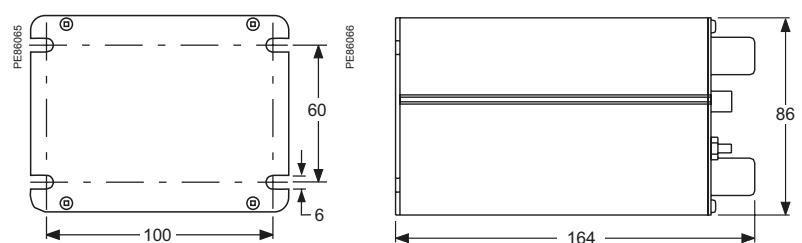
ION7300 Series

Dimensions and connection

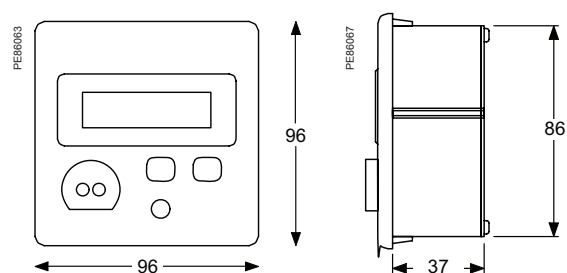
ION7300 Series dimensions



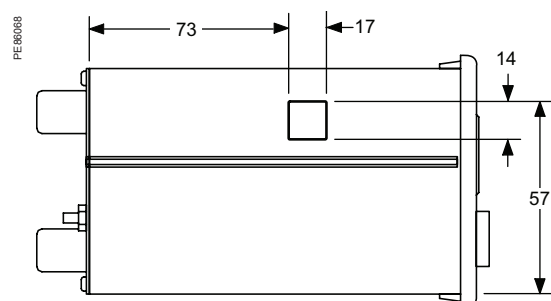
ION7300 Series TRAN dimensions



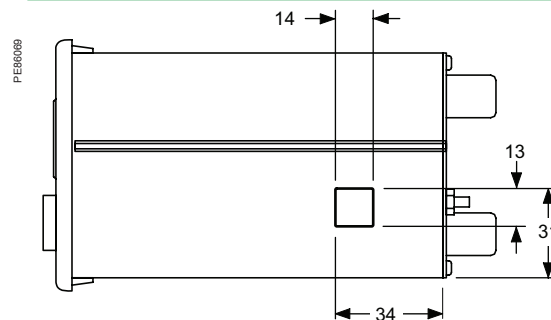
ION7300 Series RMD dimensions



Ethernet port location (if equipped)



Internal modem port location (if equipped)

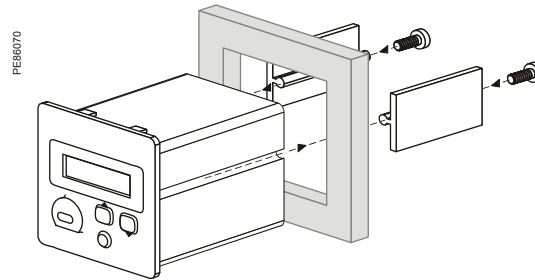




ION7300 Series

Dimensions and connection (cont.)

Front panel mounting





Schneider Electric Industries SAS
35, Rue Joseph Monier,
CS 30323
F - 92506 Rueil Malmaison Cedex

RCS Nanterre 954 503 439
Capital social 896 313 776
www.schneider-electric.com

PLSED306010EN

As standards, specifications and designs develop from time to time, please ask for confirmation of the information given in this document.



This document has been printed on recycled paper

Design: Schneider Electric
Photos: Schneider Electric



ART / © 2013 - Schneider Electric - All rights reserved

07-2013

