7500 ION
7600 ION

High Visibility Energy and Power Quality Compliance Meters

Used at key distribution points and sensitive loads, the 7500 ION and 7600 ION offer unmatched value, functionality, and ease of use.

The 7500 ION features a large graphical display, high accuracy measurements, 1/2 cycle setpoint response, power quality analysis, energy and demand tracking, historical trending, communications protocol support, and control capabilities.

The 7600 ION has all the above features, plus expanded power quality analysis and compliance reporting to help you quickly characterize your power. Other highlights include transient capture, an increased sampling rate, enhanced harmonics, and more memory.

The 7500 ION and 7600 ION come with an extensive selection of pre-configured data screens and measurements so you can use them right out of the box, or customize either meter to fit your unique requirements.

Integrate them with our PEGASYS® software or other energy management and SCADA systems through multiple communication channels and protocols.

Applications Summary

Compliance Monitoring
Use the 7600 ION to summarize power quality measurements into simple pass/fail indicators. Monitor compliance with international standards such as EN50160, IEC 61000-4-7 (harmonics), and IEC 61000-4-15 (flicker). Or configure the unit for IEEE 519-1992, IEEE 1159 and SEMI F47.

Disturbance Analysis
Unique dynamic-ranging inputs maintain revenue accuracy at the regular measurement range while simultaneously capturing large-scale disturbances other meters can miss. Discover the sources of power quality events, harmonics, and voltage sags/swells. Analyze problems and avoid repeat interruptions.

Cost Allocation & Billing
Determine cost centers, identify demand control opportunities and check energy consumption patterns.

Demand & Power Factor Control
Avoid penalties with automated load shedding, scheduling, peak shaving or capacitor bank control.

Load Studies & Circuit Optimization
Determine the capacity of your electric network and run at peak efficiency. Perform load trending.

Equipment Monitoring & Control
Improve process yields and extend equipment life. Meter utilities including gas, steam and water.

Preventative Maintenance
Set up alarms to warn of pending problems. Log events and alarms for all critical conditions.

Features Summary

Measurements
- Exceeds Class 0.2 revenue accuracy
- Instantaneous 3-phase voltage, current, frequency, power factor
- Energy: bi-directional, absolute, net, time-of-use, loss compensation
- Demand: sliding window, predicted, thermal
- Harmonics: individual & total harmonic distortion up to the 127th
- Transient detection, 65 µs @ 60 Hz, (78 µs @ 50 Hz) & sag/swell recording

Communications
- Optional built-in modem with ModemGate™ to allow modem access for 31 other devices
- 10Base-T or 10Base-FL Ethernet port option with EtherGate™ for direct data transfer from Ethernet to RS-485
- Two RS-485 ports, one switchable to RS-232
- One front panel optical port
- Modbus™ RTU and DNP 3.0 protocol support

On-Board Data Logging
- Scheduled or event-driven logging for hundreds of parameters
- Sequence-of-events & min/max logging

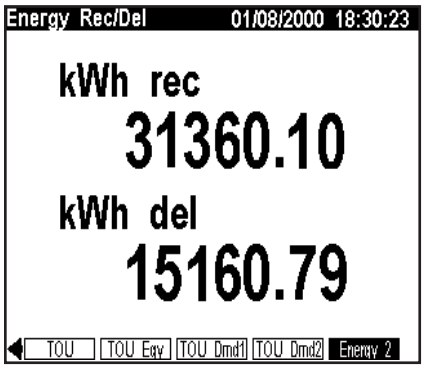
Setpoints for Control and Alarms
- Setpoint on any parameter or condition
- 1 second or ½ cycle operation

Digital Inputs and Outputs
- 8 digital inputs for status/counter functions
- 7 relay outputs for control/pulse functions

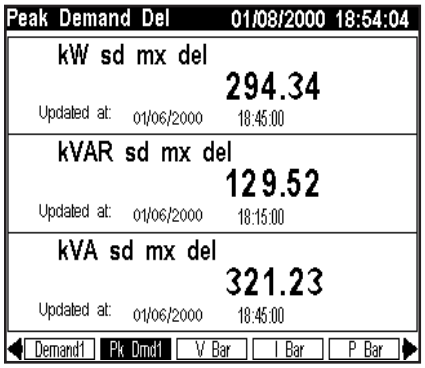
POWER MEASUREMENT

Please refer to the ordering option section for a description of 7500 ION and 7600 ION feature differences

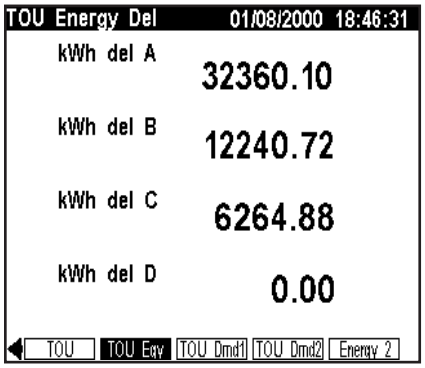
Energy Display



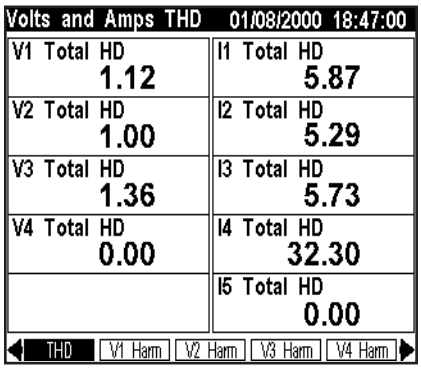
Peak demand with date and time-stamp



View Time-Of-Use data via the front panel



Configurable display screens give you fast access to critical information



Front Panel Display

The meters are equipped with unique, easy-to-read 3½ x 4½ inch, (87 x 112 mm) LCD display screens with bright back lighting and adjustable contrast. They can display TOU, event logs, phasors, harmonics and all instantaneous power parameters.

A wide selection of character sizes enhance visibility under difficult lighting conditions or at long distances. It provides a user-friendly interface with a screen-based menu system to configure meter settings and an extensive selection of pre-configured display screens, for common applications.

Metering

Both meters offer a comprehensive set of high-accuracy metering and recording functions.

Energy

The units are fully bi-directional and meter energy in four quadrants. They provide active, reactive and apparent energy parameters and can integrate any instantaneous power parameter to supply measurements like Volt-Hours, Amp-Hours, etc. Energy registers can be logged automatically on a programmed schedule.

- kWh delivered
- kWh received
- kWh net (delivered- received)
- kWh total (delivered + received)
- kVARh, kVAh delivered
- kVARh, kVAh received
- kVARh, kVAh net (delivered - received)
- kVARh, kVAh total (delivered + received)
- Volt-hours
- Amp-hours
- Integration of any instantaneous measurement

Demand

The units support all standard demand calculation methods, including block, sliding window (rolling interval), thermal (exponential), and predicted demand. They can be configured to measure demand on any instantaneous value and can record peak (maximum) and minimum demand with accurate date and time stamps to the second. Peak demand registers can be reset manually (password protected) or logged and reset automatically on a programmed schedule.

- kW demand, min/max
- kVAR demand, min/max
- kVA demand, min/max
- Amps demand, min/max
- Volts demand, min/max
- Demand on any instantaneous measurement

Time-Of-Use

The meters offer comprehensive time-of-use (TOU) metering, configurable in accordance with virtually any utility tariff structure. Automatically record TOU register values at user-specified time intervals, at pre-scheduled dates and times, or when internal or external events occur. TOU registers can be reset manually (password protected) or on a pre-programmed schedule.

- Active, reactive and apparent energy time-of-use metering
- Active, reactive and apparent demand time-of-use metering
- Automatic recording of maximum (peak) demand during each tariff period
- 20 year calendar with automatic leap-year and daylight savings time adjustment
- Calendar supports division into 4 seasons
- Support for 5 daily profiles per season
- Support for 4 rate periods per daily profile (A, B, C, D)
- Support for automatic change to mid-season rate structure

Instantaneous

Both units offer a comprehensive array of instantaneous (real-time) measurements, including a choice of high accuracy, 1 second or high-speed, ½ cycle measurements, including true RMS, per phase and total for:

- Voltage
- Current
- Active power (kW)
- Reactive power (kVAR)
- Apparent power (kVA)
- Power factor
- Frequency
- Voltage and current unbalance
- Phase reversal

Transformer & Line Loss Compensation

- Flexible compensation methods
- Easy configuration
- Updated every second
- Available through all supported protocols

Power Quality Metering

Compliance Monitoring*

- EN 50160 compliance monitoring
- IEC 61000-4-7 harmonics & inter-harmonics
- IEC 61000-4-15 flicker
- CBEMA/ITIC
- IEEE 519 and IEEE 1159

Waveform Recording

The meters can simultaneously capture all voltage and current channels.

- Sub-cycle disturbance capture
- Record back-to-back waveforms for up to several seconds
- Display and compare multiple waveforms in PEGASYS software
- Record 7 cycles at 256 samples/cycle to 96 cycles at 16 samples/cycle with the 7600 ION
- Record 14 cycles at 128 samples/cycle to 96 cycles at 16 samples/cycle with the 7500 ION

Outage Detection

Setpoints let you detect, record, and report outages in real-time, including duration, date, time, and relation to other system conditions.

Out-of-Limit Detection

The meters offer accurate and reliable setpoint capabilities for the detection, recording, and real-time reporting of frequency variations, voltage or current phase imbalances, loss of voltage or current phase, power factor variations, etc.

Performance Indicators

The units can be configured to meter a wide range of utility performance indicators, including:

- Total outage time (in seconds)
- Out-of-tolerance duration for total harmonic distortion, voltage, frequency, power factor and hundreds of other definable indices

Harmonic Distortion Metering

Complete harmonic distortion metering, recording and real-time reporting, up to the 63rd harmonic, (127th for 7600 ION via PEGASYS software), for all voltage and current inputs.

- Individual harmonics, (including magnitude, phase and inter-harmonics for the 7600 ION)
- Total even harmonics
- Total odd harmonics
- Total harmonics (even + odd)
- K-factor, Crest factor

Symmetrical Components*

Zero, negative and positive sequences including phase & magnitude for voltage & current inputs. Identify harmful voltage & current unbalances in equipment before they cause damage.

Disturbance Detection

High-speed setpoints allow the reliable detection and recording of events, sequence-of-events, and alarm conditions, including magnitude, duration and equipment status. Waveform recorders are configurable and can record all voltage and current inputs simultaneously. Control the number of pre-event and post-event cycles recorded. Trigger waveform recording with events, external inputs, or manual control.

Sag/Swell Detection

The 7500 ION and 7600 ION incorporate a dedicated sag/swell capture capability that can be used to analyze the severity and 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

Transient Capture*

- The 7600 ION can detect and record sub-cycle transients as short as 60 µs @ 65 Hz, (78 µs @ 50 Hz)
- Analyze transients by plotting them on a voltage tolerance (e.g. CBEMA) curve using our PC-based PEGASYS software

Data & Event Recording

The 7600 ION offers 4 MB (up to 8 MB optional) of nonvolatile memory for waveform, event and log storage while the 7500 ION is equipped with 1 MB. Memory can be allocated as needed ensuring important data is never lost.

Load Profiling

The 7600 ION incorporates 640 channels via 40 data recorders, the 7500 ION provides 320 channels via 20 data recorders. Channel assignments are configurable for historical trend recording of energy, demand, voltage, current, power quality, or any other measured parameter. Trigger recorders based on time interval, calendar schedule, alarm/event condition, or manually.

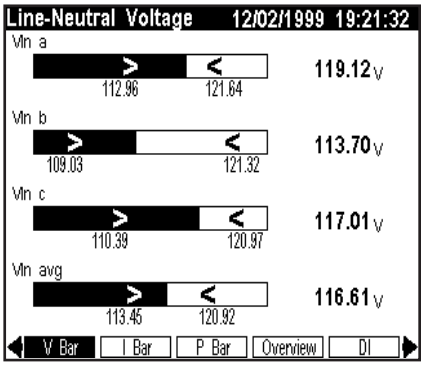
High-Speed Data Recording

High-speed "burst" recording (as fast as 1/2-cycle intervals) stores detailed characteristics of disturbances or outages. Trigger recording by a user-defined setpoint, or from external equipment. Gated recording logs data only during the critical event so that memory is conserved.

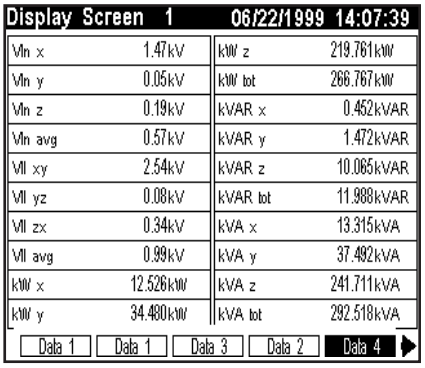
Coincident Min/Max Recording

Log the values of key parameters or equipment conditions coincident with an extreme condition, complete with date/time stamping. For example, record all feeder voltages and currents at the moment a peak demand condition occurs.

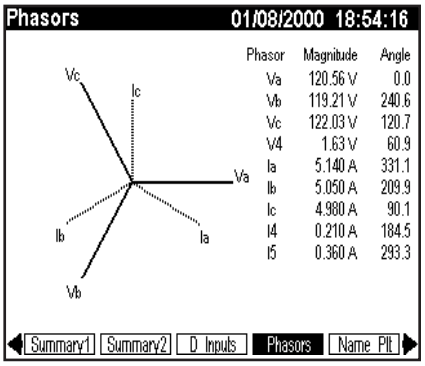
Multiple display formats are available, including bar graphs with min/max indicators



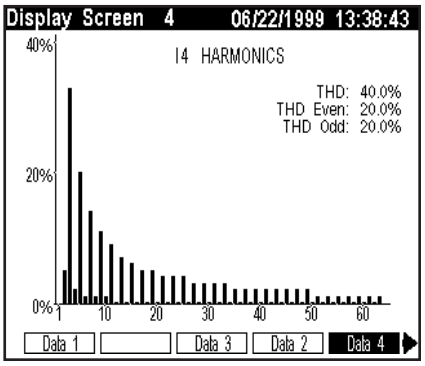
Displays a complete range of power parameters



Unique vector diagram with magnitude and phase angle can help reduce installation time



View THD and individual harmonics through the front panel display screen



* Available only on 7600 ION

Time Synchronization and GPS

A real-time clock allows internal events and data records to be date-stamped and time-stamped to millisecond resolution. The clock can be synchronized to any one of three sources:

- The meter's internal crystal (+/- 50ppm)
- The line frequency of the electrical network being metered
- An external GPS receiver with an accuracy of +/- 1 millisecond

When using GPS time synchronization, either pre-selected serial port is dedicated exclusively as a GPS synchronization input.

Logic, Math & Control

Sophisticated logic and mathematical functions let you perform on-board calculations on any measured value. Calculate true quantities from pulse inputs (e.g. BTU calculations) and transformer loss compensation values. You can also implement real-time billing schemes.

Mathematical Functions

Define formulas using the following operators:

- Arithmetic (+, x, -, ÷)
- Comparison (>, <, =, ≥, ≤, ≠)
- Logical (AND, OR, NOT, TRUE, FALSE, IF)
- Trigonometric (SIN, COS, TAN, ASIN, ACOS, ATAN)
- Math (PI, SQRT, POWER, SUM, SUMSQ, AVG, RMS, LOG10, LN, MAX, MIN)

Programmable Logic and Setpoint Control

24 setpoints can be set for 1-second or ½-cycle operation and can be triggered by any over or under condition. Setpoints can trigger:

- Audible,(through software) and visible alarms
- Modem/pager dial-back
- Data logging
- Waveform recording with control over pre-event and post-event capture
- Relay control
- Clearing and reset functions
- Relative Setpoints

Inputs/Outputs

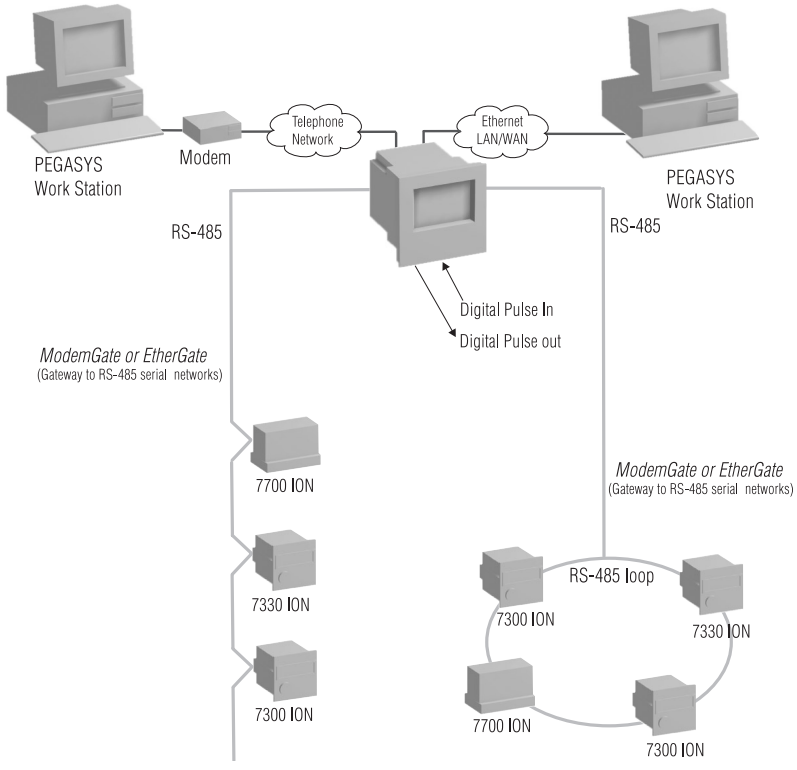
Digital I/O lets you monitor a wide range of conditions, such as flow rates, RPM, fluid levels, oil pressures and transformer temperatures. You can output energy pulses to an RTU or perform equipment control operations.

- 8 digital inputs can monitor status or count pulses from external "volts free" dry contact
- 4 solid state relay output ports and 3 on-board relays can be controlled automatically by internal setpoints or manually via a communications port

Software Integration

With their extensive communication capabilities, either meter can be easily integrated into energy management or distribution control systems.

Multiport Communications



PEGASYS

Both units are compatible with our Windows NT-based PEGASYS power monitoring software. PEGASYS displays real-time and logged data and offers manual control/configuration capabilities. PEGASYS provides enterprise-wide data sharing in a secure networked environment.

Communications

Multi-Port, Multi-Protocol Access

Simultaneous communication on up to 4 ports provides secure, data sharing with a variety of energy management systems using a choice of communication standards and protocols.

RS-232/RS-485 Port

Selectable between RS-232 and RS-485

- Protocols: ION, DNP 3.0, Modbus RTU, or GPS
- Baud rate: 300 bps to 115,200 bps

RS-485 Port

- Protocols: ION, DNP 3.0, Modbus RTU, or GPS
- Baud rate: 300 bps to 57,600 bps

Infrared Data Port:

IrDA compliant front panel infrared data port can download real-time data to a portable PC.

- Protocols: ION, Modbus RTU, DNP 3.0,
- Baud rate: Up to 115,200 bps.

Internal Modem

Available internal telephone modem features fast connect time, and ModemGate™, a gateway letting up to 31 additional devices share a meter's internal modem via the remaining serial ports. (IrDA and Internal Modem cannot be operated simultaneously)

- Protocols: ION, Modbus RTU and DNP 3.0
- Baud rate: Up to 33.6 kbps.

Ethernet Port

Optional 10Base-T or 10Base-FL port offers direct access through an Ethernet LAN/WAN and features EtherGate™, which permits the direct transfer of data between an Ethernet network and up to 62 devices via the meter's 2 serial ports.

- Protocols: TCP/IP, ION, Modbus RTU, Telnet
- Baud rate: Up to 10 Mbps.

Interoperability

Concurrent communications ability via multiple protocols allows you to use the meter's advanced features to extend an existing Modbus, DNP or PEGASYS network. In addition, both meters are fully supported by UTS MV-90™.

The Power of ION

The meters are based on our patented object-oriented ION® technology, which ensures the longevity of your metering solution because it can adapt as your needs change and lets you take advantage of our ongoing advances in technology.

The measurements and other functions of both units are provided by ION modules. You can quickly add or rearrange functions with drag-and-drop icons and a few clicks of a mouse. Imagine new features and build them with ION.

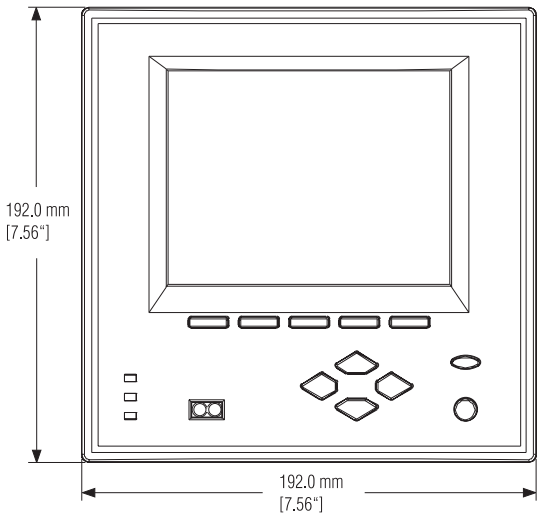
Mounting

The 7500 ION and 7600 ION can be panel-mounted in a single DIN standard 184 mm X 184 mm cutout.

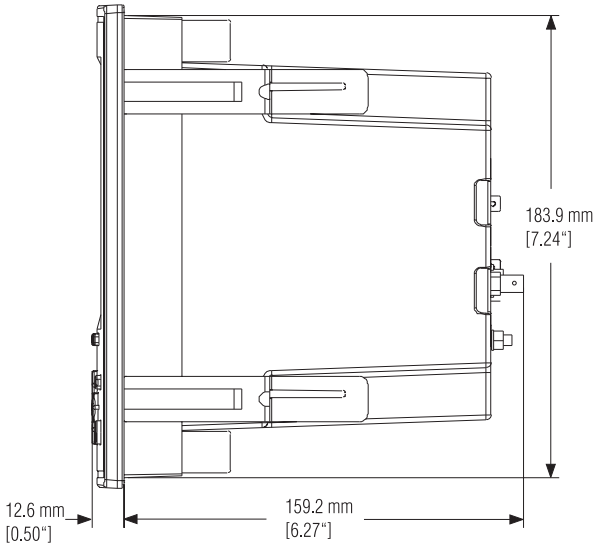
- Bezel size: 192 x 192 mm (DIN)
- A distance of 160 mm (6-½ inches) clearance is required behind the panel
- An adapter plate is available to facilitate the conversion from our 3000 series meters to the 7600 ION and 7500 ION. Please contact us for more information.

Dimensions

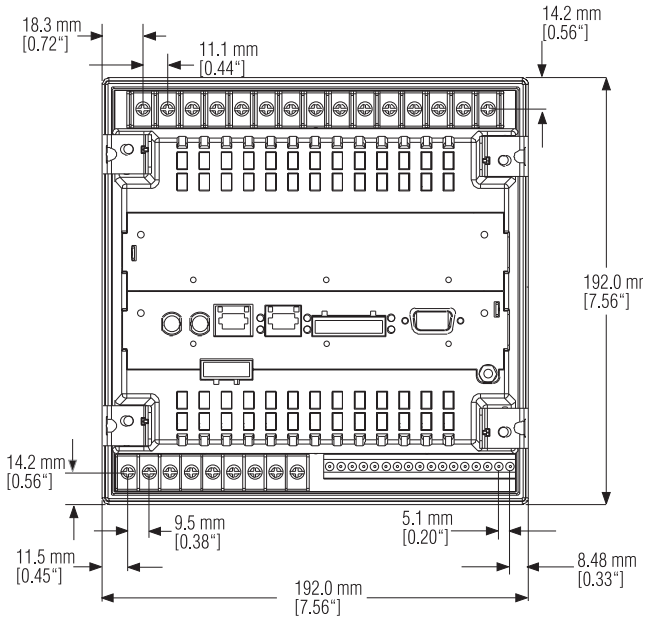
Front view



Side view

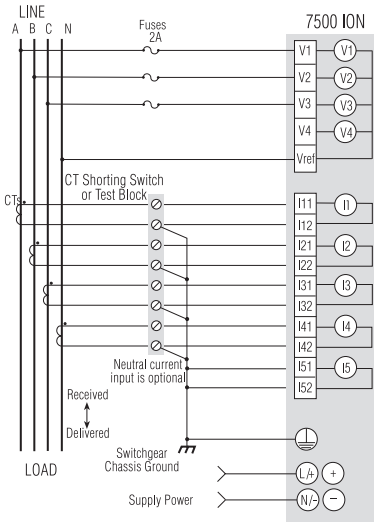


Rear view

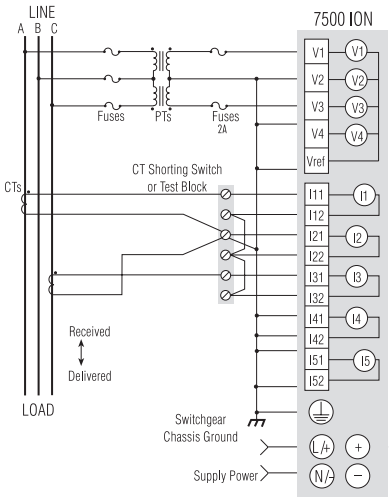


Example Connections

4-Wire Wye (Direct Connection)



3-Wire Delta (2 PTs and 2 CTs)



Connections

Installation

- 4-wire Wye, 3-wire Wye, 3-wire Delta, Direct Delta and Single Phase systems
- 4 voltage and 5 current inputs
- All inputs pass ANSI/IEEE C37.90-1989 surge withstand and fast transient tests.

Voltage and Current Inputs

- Autoranging 57 through 347 l-n/600 l-l inputs
- No PTs needed for Wye systems up to 347/600 VAC
- Standard 5 to 20 Amp current inputs

Control Power

The 7500 ION and 7600 ION standard power supply has a voltage range of 85 to 240 VAC and 110 to 330 VDC, and can be powered from a dedicated fused feed.

Measurement Specifications

Parameter	Accuracy ± (%reading)	Register Bounds
	1 second	1 second
Voltage (l-l) (l-n)	0.1%	0 to $1x10^6$ V
Frequency	0.01%	47 to 63 Hz
Current (I1, I2, I3)	0.1%	0 to $1x10^6$ A
Current (I4, I5)	0.4%	0 to $1x10^6$ A
kW, kVAR, kVA*	class 0.2*	0 to ± $3.3x10^7$
kWh, kVARh, kVAh*	class 0.2*	0 to ± 10^{37}
KW, KVA Demands	class 0.2*	
Power Factor @ Unity PF	0.5%	-0.01 to -100.00, 100.00 to 0.01
Harmonics (to 63rd)	1% Full Scale	0.0001 to 100.00
K Factor	5% Full Scale	0 to $1x10^6$
Crest Factor	1% Full Scale	0 to 10

*Refer to Compliance section on page 7

Display resolution meets or exceeds accuracy.

User Programmable Log Capacity

Example Configurations:

	7500 ION				7600 ION (equipped with 8MB memory)			
Event	500 Events				500 Events			
Data	74 days [A]	300 days [B]	35 days [A]	140 days [B]	1.8 years [A]	7.5 years [B]	1.3 years [A]	5.4 years [B]
Waveform	6 [C]	6 [C]	24 [D]	24 [D]	24 [C]	24 [C]	100 [D]	100 [D]

[A] 16 parameters recorded every 15 minutes

[B] 16 parameters recorded hourly

[C] 6 channels @ 128 samples per cycle for 14 cycles

[D] 6 channels @ 16 samples per cycle for 22 cycles

Specifications

Voltage Inputs

- Inputs:V1, V2, V3, V4, VREF
- Rated Input: 347 LN/600 LL VAC RMS
- Overload: 1500 VAC RMS continuous
- Dielectric Withstand: 3250 VAC RMS, 60Hz for 1 minute
- Impedance: 5 MΩ/phase
- Fault Capture: 1400 Vpeak

Current Inputs

- Inputs: I1, I2, I3, I4, I5
- Rated Inputs: 20A RMS, Max voltage: 600V RMS
- Fault capture: 50A RMS/70A pk.
- Overload: 500 A RMS for 1 second, non-recurring
- Dielectric Withstand: 3250 VAC RMS, 60Hz for 1 minute
- Starting current: 0.005 A RMS
- Burden: 0.15 VA

Waveform Recording

- Sampling Rate: 7600 ION, 256 samples/cycle from 47-63 Hz
- Dynamic range: Voltage Inputs: 14 bits effective (V1, V2, V3)
- Current Inputs: 18 bits effective (I1, I2, I3)
- Sampling Rate: 7500 ION, 128 samples/cycle
- Wave for recording options range from 16 samples/cycle (96 cycles) to 128 samples/cycle (14 cycles)

Digital Inputs

- 8 Inputs:S1-S8, SCOM Self-excited, dry contact sensing, no external voltage required.
- Minimum pulse width: 1msec
- Maximum pulse rate: 20 pulses/sec.
- Scan Time: ½ cycle
- Timing resolution: 1 ms
- Isolation: 300 Vpeak for 10s, 60 Hz.

Relays

- 3 Relays: R1 - R3
- Contacts: Form C
- Rated voltage: 250 VAC / 30 VDC
- Max. voltage: 380 VAC, 125 VDC
- Rated load @ 10 A AC/DC resistive, Rated voltage: 7.5 A (AC) / 5 A (DC) Inductive (p.f. =0.4)
- Max. switching load:2500 VA resistive, 1875 VA inductive (p.f. = 0.4)
- Turn-on time: 15 ms max
- Turn-off time: AC: 10ms max, DC: 5 ms max
- Isolation: 5,000 VAC for 1 minute
- Lifetime: 10,000,000 operations (no load),100,000

operations (rated voltage and load)
- Update Time: ½ cycle or 1-second

Solid State Outputs
- 4 Solid State Outputs: D1-D4
- Contacts: Form A
- Maximum voltage: 30 V
- Maximum current: 100 mA
- Isolation: Optically isolated. Max 5000 Vrms isolation (UL:E64380)
- Scan Time: ½ cycle or 1-second

Power Supply
- Rated Inputs: AC: 85 – 240 VAC (+/-10%), 47-63 Hz DC: 110 – 330 VDC (+/10%)
- Dielectric Withstand:2000 VAC RMS, 60Hz for 1 minute
- Burden: Typical: 10 VA, Max: 20 VA
- Ride-through: Min: 100ms (6 cycles @ 60 Hz @ 96 VAC) 200ms (12 cycles @ 60 Hz @ 120 VAC), 800ms (48 cycles @ 60 Hz @ 240 VAC)

Communications
COM 1
- Interface: RS-232E DTE (male DB9 connector) or RS-485 (captured wire connector)
- Duplex: Full (RS232E), Half (RS485)
- Isolation: Optical

COM 2
- Interface: RS-485 (captured wire connector)
- Duplex: Half
- Isolation: Optical

COM 3
- Interface: IrDA Compliant, or 33.6 kbps internal modem
- Duplex: Half
- Distance: 0 - 1 meter
- Optical range: +/- 15 degrees (min), +/- 30 degrees (max)
- Location: Front of Meter (IrDA), Com Card (MODEM)

COM 4 (NETWORK)
- Interface: IEEE 802.3-1993, ISO/IEC 8802-3:1993 (Ethernet) 10Base-T or 10Base-FL (optional)
- Cabling: 10Base-T Unshielded twisted-pair cable, 0.5 mm (24 AWG). Max. length: 100 meters 10Base-FL Fiber optic cable, 62.5/125 um nominal, wavelength: 820 nm Max. length: 2000 meters
- Connectors: RJ45 10Base-T, ST 10Base-FL
- Isolation: 10Base-T: Transformer isolated. Min. isolation voltage: 1500 VAC RMS/2250 VDC 10Base-FL: Optical
- Protocols: TCP/IP, Telnet, ION, Modbus RTU

Internal Modem
- Data Rate: 300 bps-33.6 kbps (V.34, V.32 bis, V.32, V.22 bis, V.22 A/B, V.23, V.21, Bell 212A, Bell 103) Automatic data rate detection is supported
- Error Correction: V.42 LAPM, MNP 2-4, MNP 10
- Data Compression: V.42 bis/MNP 5
- Interface: RJ11 (Tip & Ring)
- Governmental Approvals: FCC Modem: FCC P68 (USA), Industry Canada CS-03 (CAN)
- CE Modem: CTR21 (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, UK)

Environmental Conditions
- Operating Temp:-20 to +70 C (no formation of ice) (-4°F to 158°F)
- Storage: -40 to +85 C (-4°F to 185°F)
- Humidity: 5 to 95% non-condensing

Shipping
- 7.1 lbs / 3.2 kg
- 17 x 10 x 11 inches (0.98 cu. ft.)
  40.8 x 24 x 27.9 cm (0.0235 cu. m)

Display
- Type: FSTN Liquid Crystal Display (LCD)
- Resolution: 320 x 240 pixels (1/4 VGA)
- Temperature: Display operational -20 to +60 C
- Backlight: Cold Cathode Fluorescent (CCFT)

Standards Compliance

IEC687 Compliance: *
- Complies with IEC687 S0.2

ANSI Compliance: *
- Complies with ANSI C12.20 CA0.2

* Products meet or exceed the accuracy requirements of the standards listed. All products tested internally by Power Measurement. Some products tested by third-party laboratory. Due to form factor of some meters, not all ANSI/IEC compliance tests may apply. Contact Power Measurement for further clarification.

Safety/Construction
- IEC1010-1 (EN61010-1) Safety requirements for electrical equipment for measurement, control and laboratory use
- CSA C22.2 No 1010-1 Canadian Standards Association
- UL3111-1 Measuring, Testing and Signal Generation Equipment

Electromagnetic Immunity
- IEEE C.37-90.1-1989 IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems (ANSI) (All inputs except for the network communication port)
- IEC1000-4-2 (EN61000-4-2/IEC801-2) Electrostatic Discharge (B)
- IEC1000-4-3 (EN61000-4-3/IEC801-3) Radiated EM Field Immunity (A)
- IEC1000-4-4 (EN61000-4-4/IEC801-4) Electric Fast Transient (B)
- IEC1000-4-5 (EN61000-4-5/IEC801-5) Surge Immunity (B)
- IEC1000-4-6 (EN61000-4-6/IEC801-6) Conducted Immunity
- ANSI C62.41 Surge Immunity
- IEC1000-3-2 (EN61000-3-2) Limits for harmonic currents emissions (equipment input current < 16 amps per phase).
- IEC1000-3-3 (EN61000-3-3) Limitation of voltage fluctuations and flicker in low voltage supply systems for equipment with rated current < 16 amps.
- ENV51040 Radiated EM Field Immunity (A)
- ENV51041Conducted EM Field Immunity (A)
- EN50082-2 Electromagnetic Compatibility, immunity

Electromagnetic Emission
- FCC Part 15 Subpart B, Class A Digital Device, Radiated Emissions2
- EN55011 (CISPR 11) Radiated/Conducted Emissions2 (Group 1, Class A)
- EN55022 (CISPR 22) Radiated/Conducted Emissions (Class A)
- EN50081-2 Electromagnetic Compatibility, emissions2

Electromagnetic Emission
- FCC Part 15 Subpart B, Class A Class A Digital Device, Radiated Emissions
- EN55011 (CISPR 11) Radiated/Conducted Emissions(Group 1, Class A)
- EN55022 (CISPR 22) Radiated/Conducted Emissions (Class A)
- EN50081-2 Electromagnetic Compatibility, emissions

Markings
ISO 9002-94
Registration Cert# 002188

Miscellaneous
Quality Assurance: ISO 9002-1994

Warranty
3 years parts and labor

Ordering Information

P.O. line#	Qty	Meter Type	Code 1	Code 2	Code 3	Code 4	Code 5	Code 6	Code 7
			Frequency	Form F.	Power S.	Comm.	Optical	Security	Memory

Meter Type	**P75**	7500 ION, with: 1MB recording memory, 10 data recorder modules (160 channels), 128 sample/cycle waveform recording and harmonics to the 63rd order.
	P760	7600 ION, with all the features of the 7500 ION plus: 4MB of standard recording memory, 20 data recorder modules (640 channels), 256 sample/cycle waveform recording, harmonics to the 127th order, symmetrical components, transient detection and power quality compliance monitoring.
Code 1	**A**	60 Hz operating frequency
	B	50 Hz operating frequency
Code 2	**0**	Standard model with integrated display
Code 3	**A**	Standard power supply (85 to 240 VAC, 110 to 330 VDC)
Code 4	**0**	Standard Comm Card includes: RS-232/RS-485 port, RS-485 port, optical communications port
	1	Comm Card plus: 10 Base-T Ethernet with RJ45
	2	Comm Card plus: 33.6 kbps modem with RJ11[1]
	3	Comm Card plus: 33.6 kbps modem with RJ11[1] and10 Base-T Ethernet with RJ45
	4	Comm Card plus: 10 Base-T and 10 Base-FL Ethernet connections
	5	Comm Card plus: 33.6 kbps modem with RJ11[1] and 10 Base-T and 10 Base-FL connections
	6	Comm Card plus: CTR21 compliant modem[2]
	7	Comm Card plus: CTR21 compliant modem[2] and 10 Base-T connections
	8	Comm Card plus: CTR21 compliant modem[2] and 10 Base-T and 10 Base-FL connections
Code 5	**A**	Standard (No tropicalization)
	B	Tropicalization Treatment
Code 6	**0**	Standard
	1	RM - Revenue locked at the factory
Code 7	**A**	Standard 4 MB Logging Memory (7600 ION only)
	B	8 MB of Logging Memory (7600 ION only)

Ordering Example

A standard 7500 ION calibrated for 60 Hz, with integrated display, standard power supply, communications card and optional 10 Base-T Ethernet with RJ45 connector, tropicalization treatment and without Revenue locks: P75A0A1B0

Retrofit Communications Options

P.O. line #	Qty	Card Type	Code 1	Code 2
Card	COM-UCI			

Code 1	**A**	Compatible with 7600 ION and 7500 ION Universal Communications interface slot
Code 2	**0**	Standard Comm Card includes: RS-232/RS-485 port, RS-485 port
	1	Comm Card plus: 10 Base-T Ethernet with RJ45
	2	Comm Card plus: 33.6 kbps modem with RJ11[1]
	3	Comm Card plus: 33.6 kbps modem with RJ11[1] and10 Base-T Ethernet with RJ45
	4	Comm Card plus: 10 Base-T and 10 Base-FL Ethernet connections
	5	Comm Card plus: 33.6 kbps modem with RJ11[1] and 10 Base-T and 10 Base-FL connections
	6	Comm Card plus: CTR21 compliant modem[2]
	7	Comm Card plus: CTR21 compliant modem[2] and 10 Base-T connections
	8	Comm Card plus: CTR21 compliant modem[2] and 10 Base-T and 10 Base-FL connections

Ordering Example

A standard 7500 ION Com card with 33.6K internal modem, 10Base-T and 10Base-FL connectors COM-UCI-A5

[1] FCC Part 68 (USA), Industry Canada CS03 (CAN) approved

[2] CTR21 Compliant - · Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Norway, Portugal, Spain, Sweden, Switzerland, Netherlands, United Kingdom. The CTR21 compliant modem will operate in the above listed countries. The 7500 ION is fully certified to the requirements of the CE standard. In some countries, legal requirements may differ from CE. Please check your local requirements to ensure the product is certified for use in your country.

Meet the World Leader

For over two decades, Power Measurement has been providing cost-effective power monitoring, analysis, and control systems to customers around the globe including power utilities, commercial and industrial facilities, and major electrical OEMs. We are dedicated to delivering the highest levels of quality and are officially registered to the ISO 9002 Standard. Let our experience and proven track record give you an end-to-end energy management solution that exceeds your expectations.

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Revision Date: August 31, 2000

Printed in Canada 70100-0132

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