

Nexus 1250

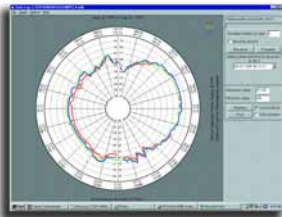
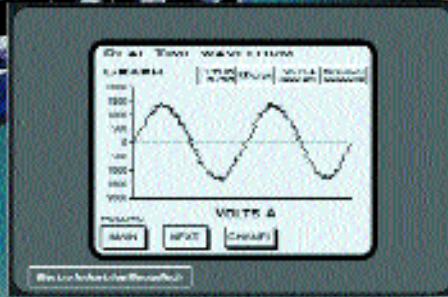
For Industry and Utilities

Accu-Measure®
Technology

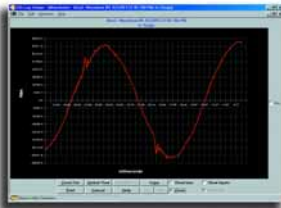
Performance Power Meter

& Data Acquisition Node

- Power Quality Recorder
- Billing Grade Revenue Meter
- RTU with I/O & Control
- Internal 10/100 Base-T Web Access



0.04% Billing
Grade Power Metering



Performance Power
Quality Monitoring



XML Web Server

New! Total Web Solutions

WebExplorer WebReacher
WebXML WebAlarm WebMod



INDUSTRY
CANADA
MC#AE-1069



ELECTRICAL & ELECTRONIC
MEASURING & TEST EQUIP.
64JA

A Quantum Leap in Metering Technology

From today's utility giants to Fortune 100 companies to local electrical municipals, an effective energy management and power monitoring program is critical to success. The Nexus 1250, the most advanced monitoring product ever designed, provides the total picture of power usage and power quality for any metered point within a power distribution network allowing users to make power related decisions quickly and effectively. With EIG's exclusive Total Web Solutions, monitor your Nexus 1250 anytime and from anywhere via the Internet.

TECHNOLOGY DESIGNED FOR UTILITIES AND INDUSTRIAL USERS

FOR ENERGY PROVIDERS

(Utilities, Municipals, ESPs, Independents, etc.)

- Improve Substation Automation Solutions
- Increase Power Distribution Reliability
- Record Faults/Time Protective Equipment
- Monitor Reliability of Breakers and Relays
- Shed or Shift Loads Quickly
- Identify and Manage Peak Demand
- Heighten Response Time to PQ Events
- Enhance Levels of Communication and Data Transmission
- Provide Real Time Data on the Web

FOR ENERGY CONSUMERS

(Industrial, Commercial, Government, Etc.)

- Real-Time PQ Monitoring and Analysis
- Efficiently Control/Manage Energy Consumption
- Improve Operational Efficiencies
- Increase Productivity/Reduce Downtime
- Optimize Loads/Extend Equipment Life
- Identify and Respond to PQ Events Quickly
- Avoid High Utility Penalties for Exceeding Usage
- View Energy Usage and Power Quality through the Web

OBTAIN HIGH-END POWER QUALITY & ACCURATE BILLING MEASUREMENTS

High performance usage and power quality data is always available on-line in the Nexus power meter to provide the needed power system assessment immediately. Use Nexus' precision accuracy for primary metering, sub-metering or to check an installed utility meter.



EXPANDABLE I/O & TRENDING CUSTOMIZE NEXUS FOR EVERY APPLICATION

Nexus offers virtually unlimited I/O capability in conjunction with all metering functions. Expandable I/Os enable the meter to be used for every metering and data gathering application. Nexus' modular plug-in design allows you to add Analog and Digital I/Os to specifically meet your application.



Access Meter Data Directly Through The Web

Accu-Measure® Technology

MULTI-PART APPROACH TO PRECISION IN ACCURACY

The Nexus 1250 is the first meter of its kind to utilize EIG's patent pending Accu-measure® Technology. Accu-measure® is a technique based on a multi-part approach allowing a field-mounted metering device to achieve laboratory accuracy.

DUAL HIGH POWERED 16 BIT A/D CONVERTERS

Dual 16 Bit A/D converters provide supreme sampling accuracy and resolution.

DUAL INTERNAL REFERENCES ACCURATE TO 1 PPM

The unit auto-adjusts to dual internal references accurate to 1 part per million. These references ensure that the monitoring equipment maintains its calibration.

AUTO-CALIBRATION WITH TEMPERATURE COMPENSATION

The Nexus uses an auto-calibration technique that recalibrates the unit on the fly when the temperature changes more than 5 degrees Centigrade monitoring for accuracy over temperature.

PRECISION ACCURACY SPECIFICATIONS

With Accu-measure®, this unit far exceeds all ANSI C-12 and IEC 687 accuracy specifications. The unit offers 0.04% watt-hour accuracy.

REVENUE METERING FEATURES

TRANSFORMER LOSS AND LINE LOSS COMPENSATION

The unit compensates for transformer and line losses. Power reading compensation is conducted for both iron and copper losses.

LOAD AGGREGATION / UNIVERSAL METERING

Using the status inputs, Nexus has the ability to count pulses and aggregate different loads providing a total picture of the load and its component parts. The pulse inputs can be used to accumulate and aggregate all other utility values such as water and gas.

TIME OF USE CAPABILITY

Nexus offers comprehensive time of use capability. Standard features include:

- **Bidirectional Consumption and Demand Quantities**
- **20 Year Calendar**
- **4 Seasons/Yr**
- **12 Holidays/Yr**
- **4 TOU Schedules/Seasons**
- **Prior Month, Prior Season Storage**
- **Present Month, Present Season Storage**

MAX/MIN INTEGRATION AND RECORDING

The unit offers time stamped max and min values for every measured reading. A time stamp is associated with each max and min. KW readings are integrated using:

- **Block (Fixed) Window**
- **Thermal Window**
- **Rolling (Sliding) Window**
- **Predictive Window**

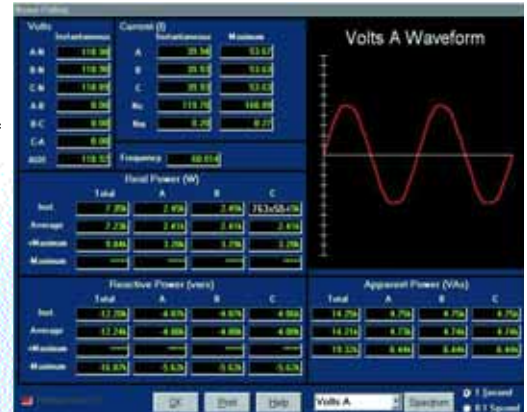
Any integration period is allowed. The default is 15 minutes.

COINCIDENTAL READINGS

When logging max Watt readings, the coincidental VARs at the time of the max are also recorded. Determine the number of capacitors needed, peak inefficiencies and many other issues.

PASSWORD PROTECTION PREVENTS UNAUTHORIZED TAMPERING

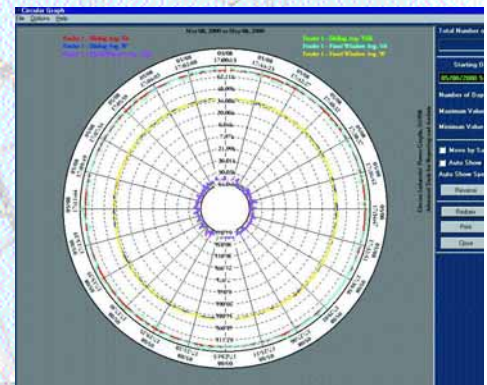
Two 10-character, alphanumeric passwords protect the unit from unauthorized tampering. The first level password is a general password allowing a user to view readings, but not change them. The second password allows the user to change and re-program the unit.



Real-Time Readings & Waveform Display



4 Quadrant Energy and Demand



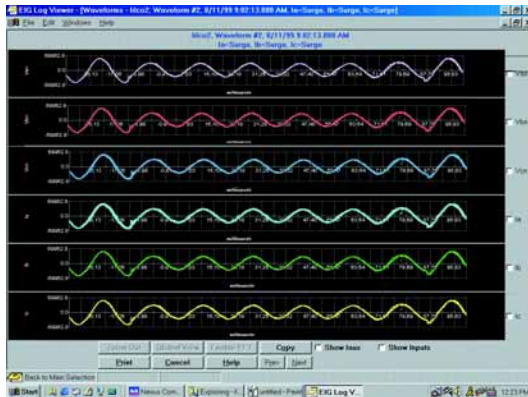
Historical Trends for Any Parameter



Detailed Power Quality Recording

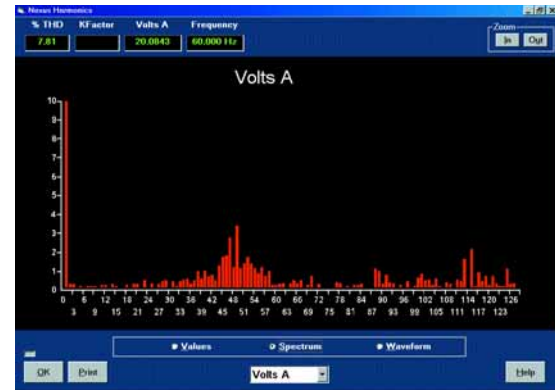
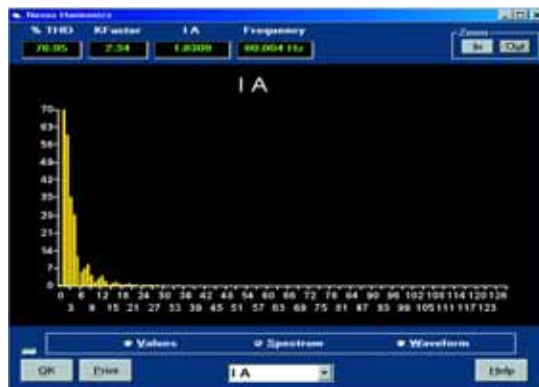
16 BIT WAVEFORM AND FAULT RECORDER

The unit records up to 512 samples per cycle for an event. Voltage and current are recorded with pre- and post-event analysis. Fault recording offers 8x full scale capture capability. All voltage and current readings are recorded using a 16 bit A/D converter providing precise waveform resolution. Both hardware and software triggers are available to activate a waveform reading, which can be used for power quality surveys, fault analysis, breaker timing, etc.



MEASURE AND RECORD HARMONICS TO THE 255TH ORDER

The unit measures harmonics up to the 255th order for each voltage and current channel. Real-Time harmonics are resolved to the 128th order. Percent THD and K-Factor are also calculated. This high performance harmonic analysis allows users to conduct power quality analysis at the high end of the harmonic spectrum.

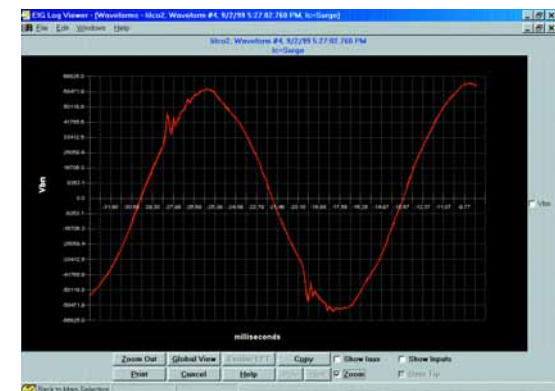


STATUS INPUT TRIGGERS

The unit records the waveform at the time of the status change. The input change and waveform recording are time stamped to a 1msec resolution.

ADDITIONAL INPUTS

Nexus offers inputs for Neutral to Ground Voltage measurements. This allows you to analyze rising ground potential which often damages electrical equipment. The unit also calculates and measures the neutral current.



SUB-CYCLE TRANSIENT RECORDER

The unit records sub-cycle transients on voltage and current readings. It monitors switching noise from capacitors, static transfer switches, SCRs and many other "power quality harmful" devices. Transients are often the cause of intermittent and expensive downtime. Without Nexus, solving these problems is often impossible.

Advanced Reporting and Analysis



PHASOR ANALYSIS

The monitor reads a phase angle analysis between the voltage and current channels, allowing for efficiency and system-integrity analysis.



INDEPENDENT CBEMA LOG PLOTTING

The Nexus stores an independent CBEMA Log for magnitude and duration of voltage events. In this manner, the user can quickly view total surges, total sags and average duration without having to retrieve waveform information.

Automated Analysis & Report Writing

AiReports -PQ Analysis

AiReports provides automated analysis and report writing for abnormal events.

- Uses Artificial Intelligence
- Evaluates All Data from Nexus Monitor
- Rates Events for Severity
- Identifies Probable Causes
- Identifies Possible Impacts
- Recommends Corrective Actions or Solutions
- Prepares & Formats Report of All Power Quality Events
- Add-on Software to Nexus Communicator

At The Interchange Point

Nexus gives you the power of a sequence of event recorder on every transmission line or interchange point. Nexus is always watching and has extended memory capability, which can record multiple faults, or even frequency swings during stability problems. Capture all voltages and currents. Download the data and open the files with Nexus Communicator. Compare multiple channels.



Measure amplitudes and timing with milli-second resolution. See system reliability events that lasted for several seconds.

For Key Locations

When that key customer calls, simply perform a download from the Nexus 1250. In a few minutes, all the data related to any event is on your desktop. A completed report is ready to review internally or e-mail to the customer. Probable causes are identified and corrective actions recommended.

Need to perform a more detailed evaluation? Simply open the viewer to look at the waveforms to see exactly what happened to voltages and currents throughout the event. Only Nexus provides precise pictures for many seconds.



Cutting-Edge Technology Monitors Your Power Quality

Total Web Solutions

Total Web Solutions— Providing Advanced Metering Data Integration with the Web

Total Web Solutions is an advanced Ethernet communication architecture allowing you to custom design web pages, display metering data, and host your meter power information web site directly on a Nexus meter. The Nexus meter directly hosts the web data without any need for dedicated server software, Active X controls or Java Applets. The meter does the data collection, the formatting and the page hosting. Additionally, this solution is very Information Technology Dept. friendly because it uses almost no network traffic and provides all formatted data through an HTTP interface without resident client software.

Advanced Features Include:

- Fully Customizable Web Page Development
- Direct Web Page Hosting With Live Readings

- Multiple Meter Hosting On One Page
- Read Direct From Meters. (No Server Software Needed)
- No Active Controls Or Java Downloads
- IT Dept Friendly. Works Through Firewalls
- Low-Cost / High Functionality
- Instant Alarm Emails – Direct From The Meter

WebExplorer

(Directly Host Metering Data)

EIG's WebExplorer provides you with direct access to all power data through Internet Explorer without needing to download Active X controls or Java applets. Because it is a standard HTML web page to an IT department, it works directly through corporate firewalls. WebExplorer is fully programmable so you can customize your own SCADA quality web pages, graphics and configurations.



- Easily Incorporated Into Any Existing Web Applications
- Fully Programmable Web Page Generator
- Bring in Direct XML Links customizing many meters onto one page
- Quick Page Upload Time
- Easily Passes Through Firewalls
- No Active X Controls or Java Applets
- Downloaded to Client



Internet Explorer

WebXML provides
totalized energy usage

Meter 124



WebMod

TCP/IP

WebMod

TCP/IP

WebMod

TCP/IP



Meter 115

Meter 31



WebMod

TCP/IP

Meter 14



Meter 87



WebReacher

WebXML

WebXML

Creates Real Time Data in XML Format, WebXML allows the Nexus meter to gather data from the Nexus Host or through other meters and put the data directly into an XML format. This allows you to share data through the web to multiple applications and create custom web pages using Web Explorer. WebXML technology is easy to configure and extremely flexible. With WebXML, your data is instantly available to a host of software applications including Internet Explorer, Excel, Power Point and Word.



- XML Support
- Automatically Process And Present Data In Readable Format
- Add Scale Factors, Multipliers Or Any Other Desired HTML Capability
- Display Data From Host Meter And/Or Any Other Meter Using Modbus RTU Or TCP/IP (WebReacher)
- Customized Programming For Data Collection
- Easily Viewed By Different Applications
- Modbus Data Concentrator

WebReacher

With EIG's exclusive WebReacher technology, you can now access remote meters around the world, retrieve data and consolidate it onto one web page or web site without any separate software SCADA package or client-side Active X or Java Applets.



- No Additional Application Software Costs
- No Server System Required
- No Complex Integration
- No Active X or Java Applets on Client
- No Costly Point Charges

WebMod

(Open Architecture 3rd Party Integration)

The 10/100 Base-T design allows the unit to speak with 12 simultaneous sockets of Modbus TCP. Once the card is placed inside the Nexus, Port 2 becomes a gateway enabling other Modbus based IED equipment to be interfaced to the network LAN allowing multiple requests to receive data simultaneously. EIG's WebMod features Modbus TCP open protocol that can be easily integrated with most other software or hardware. And, with the built-in Modbus data concentrator, you can poll up to 8 devices or 512 unique polling items from any device that can speak Modbus RTU and/or Modbus TCP protocols.



- 12 Simultaneous Sockets Of Modbus Over Ethernet Communication
- Multiple Sockets Means Multiple Users Or Software Systems Can Reach Meter Simultaneously
- 1 Modbus RTU Internet Gateway With RS485 Connection (Up to 32 Devices.)

WebAlarm

EIG's WebAlarm sends real-time email alerts via the Internet to up to 9 recipients simultaneously for any combination of event notifications. With WebAlarm, you can easily program the type of email format for the alert: either short format for cell phones with text messaging service or long format that will provide detailed alarm conditions for any devices with full email support (computers, PDAs, cel phones.)



- Real-Time Alerts
- Simultaneous Emails To Multiple Recipients
- Update Users On Virtually Any Abnormality
- Uses Standard SMTP – Just Assign Email Address
- Shows The Last 10 Emails on Web Site For Later Interrogation

WebExplorer

WebMod

WebAlarm

Extensive On-Board Mass Memory Securely Records All Data

Multiple Programmable Memory Logs

Nexus utilizes two separate logs of historical information. In addition to all power parameters, the historical logs allow users to trend data from Electro Industries' remote I/O devices. Furthermore, circuit breaker pressure, transformer temperature or any other analog or digital parameter can be monitored. Conduct preventative maintenance on critical equipment as well as power analysis.

PRIMARY HISTORICAL TRENDING LOG FILE — LOG 1

Log any measured parameter from either the main unit or any of the option modules. Either 8, 16, 32 or 64 values can be logged per programmable interval.

SECONDARY HISTORICAL TRENDING LOG FILE — LOG 2

This log can be set up as an additional historical interval log or as an exclusive energy log. Either 8, 16, 32 or 64 values can be logged per interval.

OUT OF LIMIT LOG

The unit offers an independent out of limit log. This allows a user to

Log Storage Options	512K RAM	512K Record Size	2 Meg RAM	2 Meg Record Size	4 Meg RAM	4 Meg Record Size
Historical Log 1	176K	58 Days	288K	96 Days	1808K	602 Days
Historical Log 2	256K	42 Days	400K	66 Days	400K	66 Days
Out of Limit	48K	512	96K	1024	96K	1024
CBEMA Log	16K	256	64K	1024	64K	1024
Relay Output Log	N/A	N/A	48K	512	32K	512
Input Status Log	N/A	N/A	48K	512	32K	512
Waveform Recording Number of Events	N/A	N/A	1040K	64	1568K	96

Note: Historical Log 1 is calculated recording 8 values every 15 minutes. Historical Log 2 is calculated storing all integrated hour readings every 15 minutes. Every reading for every log is recorded with the appropriate time stamps.

download out of limit information to obtain a sequence of events for any occurrence. Utilizing the 1 msec clock resolution, the logs can be combined with different metered points through a distribution system to provide an accurate system-wide depiction of a power disturbance.

EVENT-TRIGGERED WAVEFORM RECORDING LOG

Nexus records waveforms with a resolution of up to 512 samples per cycle. The amount of waveform recording is based on the amount of memory installed.

The unit records the waveform when a value goes out of limit and when the value returns to normal. All information is time stamped to the nearest 1msec. The 8 on-board high-speed inputs can be tied to the waveform recording. Record when the breaker tripped as compared to when the relay activated. This is very useful for fault and breaker integrity analysis.

The unit can be programmed to take more than one recording every time an event occurs. Thousands of cycles can be recorded per event.

Samples Per Cycle	Number of Cycles Recorded Per Screen	Max. Number of Cycles Recorded Per Event	Number of Channels
16	8 Pre / 56 Post Event Screen	5760	7
32	4 Pre / 28 Post Event Screen	2880	7
64	4 Pre / 12 Post Event Screen	1536	7
128	1 Pre / 7 Post Event Screen	768	7
256	1 Pre / 3 Post Event Screen	384	3
512	1 Pre / 3 Post Event Screen	384	1

CBEMA Log

Nexus stores a separate CBEMA log that records magnitude and duration of voltage and current surges and sags for every power quality event. This allows the user to conduct real-time CBEMA analysis without downloading all stored waveforms. The separate CBEMA log also allows the unit to provide a more comprehensive picture of power quality over time.

RELAY OUTPUT LOG

The unit records when a relay output from the external I/O is activated, time stamps the event and provides a reason why the relay changed status.

INPUT STATUS LOG

This log is similar to the Relay Output Log in that it allows the user to record when inputs change status.

UPLOADABLE FLASH MEMORY

Nexus utilizes uploadable flash memory technology on all processors

and DSPs located in the unit. This ensures that the unit can be upgraded without removing it from service.



Expandable External I/O • RTU Capability • ElectroLogic® Control

Use Nexus as an RTU

Electro Industries offers multiple Analog and Digital I/O modules that mount externally to the Nexus. The unit supports up to 4 I/O modules using internal power. An additional power supply extends I/O capability.

The master port of the Nexus eliminates the need for RTUs in many substation applications. The Nexus can poll different I/O devices, log data, and send data to a master station via Modbus or DNP 3.0 protocol. This I/O functionality is available in the Nexus at much lower costs than traditional substation RTUs.

ElectroLogic® — Programmable Logical Protection and Control

The Nexus power monitor provides advanced logic and control on programmable limit settings.

The 7000 values that the monitor measures can have limits and logic set to trigger operations. This feature allows a user to configure the Nexus to be used as a control device for many applications such as:

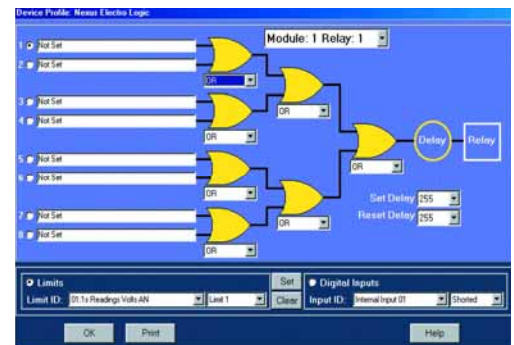
- Capacitor Control
- Load Shedding
- Automatic Transfer Schemes
- Transformer Monitoring & Control
- Redundant Protection (Not designed for Primary Over-Current Protection)
- Many Other Control Functions

ELECTROLOGIC® PROVIDES GRAPHICAL PROGRAMMING INTERFACE FOR RELAYING AND CONTROL

EIG's unique ElectroLogic® structure allows users to develop up to 3 tiers of logic control based on limits and status conditions. All data is displayed in a graphical tree structure. The user can set logical descriptors such as:

- AND/NAND/XAND Gates
- OR/ NOR/XOR Gates
- Hysterisis/ Nhysterisis Control

Using the graphical array, each tier configures to the desired logical scheme enabling the Nexus to address complex control requirements. The Nexus ElectroLogic® control can be extended for a virtually unlimited number of relay outputs. Simply extend additional I/O modules. Response time is typically less than 200 msec per I/O module extendible to multiple seconds.



Graphical 3 Tier Programming Interface

Precise Measurement • Analysis • Control

On-Board Communication for Every Application

Robust Communication for Every Option

4 ISOLATED HIGH-SPEED COMMUNICATION PORTS

Nexus offers 4 built-in identical communication ports. Each port speaks any desired protocol. Standard protocols include Modbus RTU/ASCII and DNP 3.0. Logs and Waveform events are available in Modbus format. Port 3 and Port 4 can be used as a Modbus master for I/O modules.

MULTIPLE-SOCKET ETHERNET INTERFACE

Nexus' unique Ethernet interface allows multiple requests to receive data simultaneously. Twelve Modbus/TCP independent sockets can be opened at the same time. This is like having 12 ports in one.

ON-BOARD INTERNAL MODEM

If desired, the internal expansion port can be configured to provide an internal 56K baud modem. This gives Nexus dial-in and dial-out capability without additional hardware. This is ideal for small remote applications. When the device is configured with a modem card, port 2 becomes a gateway allowing other Modbus based serial devices access to the phone line.

ADDITIONAL CAPABILITIES

8 BUILT-IN DIGITAL HIGH-SPEED STATUS INPUTS

These inputs automatically sense whether the circuit is externally wetted. If externally wetted, the input will accept up to 400VDC. If internally wetted, the unit supplies the needed voltage for the desired control application.

HIGH-SPEED TRANSDUCER OUTPUTS FOR CONTROL PURPOSES

Nexus offers 50 msec updates for all instantaneous readings. The unit can be a high-speed control transducer for power generation, transmission line synchronization and any other synchronizing and control scheme.

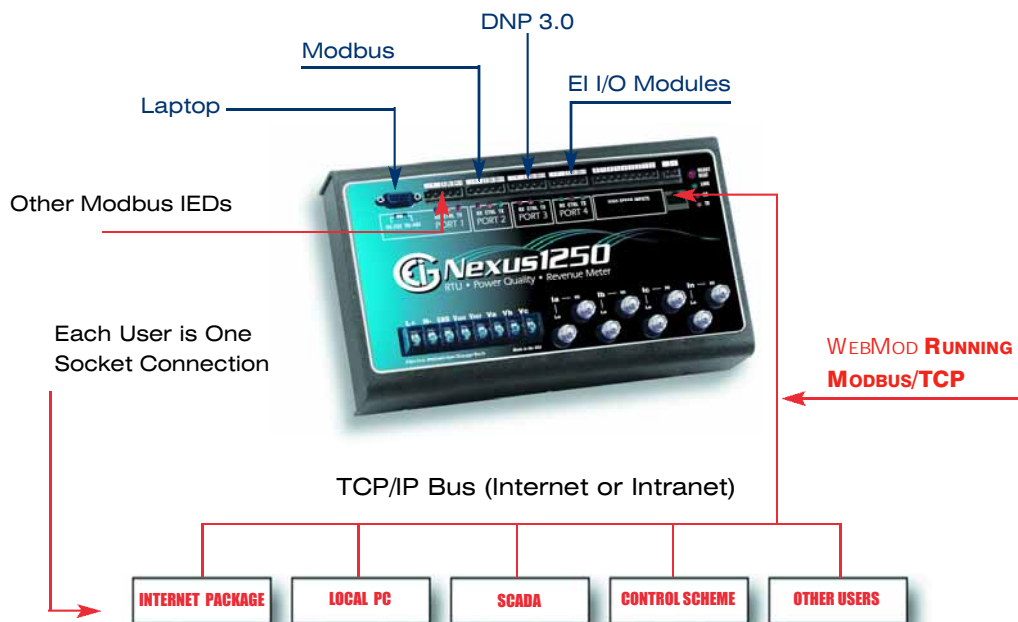
SYNC. CHECK-AUX. VOLT INPUT

The unit has a high-speed Vaux input. This input can be used for multiple purposes

- Neutral to Ground
- Voltage Readings
- Synchronizing Schemes

The Vaux channel can be used to get the frequency, magnitude and phase angle on both sides of a switch or between generator and bus voltage.

MULTIPLE COMMUNICATION PATHS



Multiple Socket Internet or Intranet Meter Access
Up to 12 Sockets Simultaneously

Optional On-Board Modem with Dial-Out

Dial-Out on Alarm

With the built-in INP2 modem, the meter has dial-out capabilities that detect when an alarm occurs and dials out to provide notification. The Nexus 1250 dials to the EIG Dial-In Server which allows users to be paged or e-mailed with notifications of events.

Dial-Out for Other Events

The meter will dial out for the following circumstances:

- Limits Status Change
- High Speed Input Change
- Waveform Record Capture
- CBEMA Power Quality Event
- Control Output Change
- Filling of Meter Memory
- Cycling of Control Power
- Password Failure on a Call Coming into the Modem
- Meter Communication Failure

Dial-In Server Capabilities

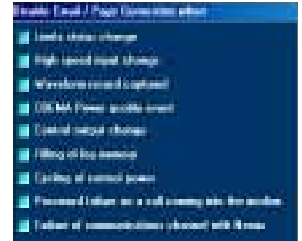
The EIG Dial-In Server 1.0* will record all notifications, accept downloads from the meter and allows users to be notified by email and paging automatically. Features of the Dial-In Server include:

- Unlimited Meters
- Scalable Multi-Server Architecture
- E-Mail Notification
- Paging Notification
- Audible System Alarm

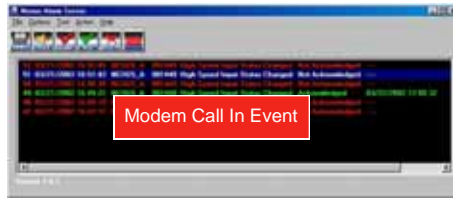
Email/Paging Feature

Once the software detects a call, Nexus Communicator launches the Dial-Out feature, immediately alerting those designated users via:

- E-Mail (PC, PDA, CellPhone)
- Pager
- Many Users Can Be Contacted Simultaneously



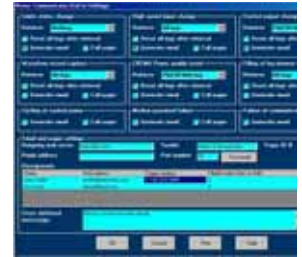
Dial Out on Any Event



Visual Alarm Server



Dial-Out Logic



Dial-In Settings

* Dial-In Server in an add-on software to Nexus Communicator

Superior Construction and Isolation

This unit is a rugged and durable device. It provides considerable protection and isolation from damaging outside forces.

CASE CONSTRUCTION

The unit is mounted in a shielded metal case. It offers no visible openings and is resistant to contamination from harmful dust, sand or other matter. All screws and hardware are stainless steel.

POWER SUPPLY

The power supply offers both MOV protection and active line filtering to reduce any damaging occurrences to the supply.

VOLTAGE INPUTS

The voltage inputs are optically isolated. Issues such as noisy grounds, switching noise, SWC or any other such problems pose no threat to Nexus

CURRENT INPUTS

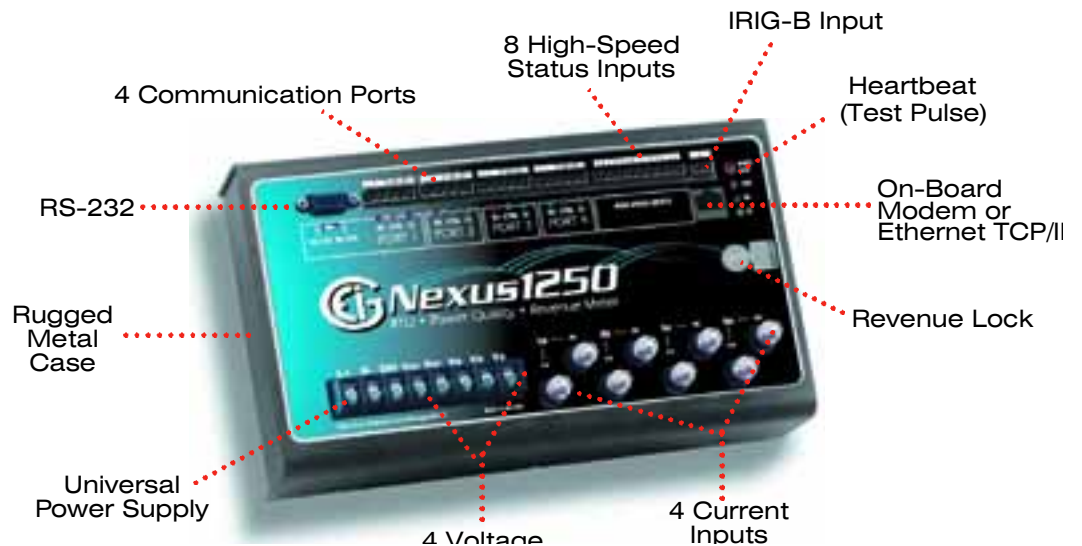
The current inputs are direct shorts. They offer a stud input U-Bolt design with an internal toroidal sensor. Since this is a quarter-inch thick solid brass U-Bolt without solder or weld joints, the unit's current input and surge withstand capability is significant.

COMMUNICATION PORTS

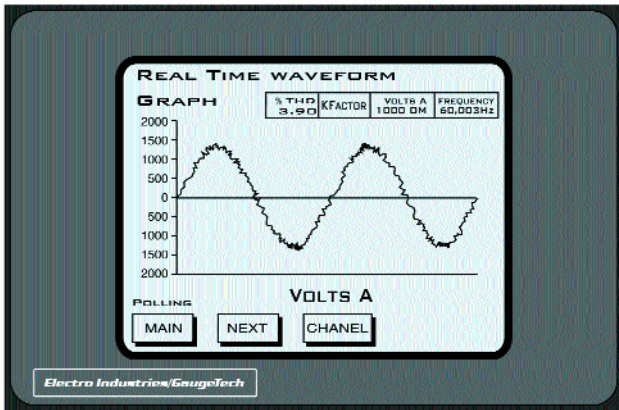
All communication ports are isolated from the main unit and additionally isolated from each other. This avoids dangerous ground loops.

I/O MODULES

Each I/O module is isolated from the main unit and from other I/O modules. No signal entering an I/O module can damage any other part of the Nexus.



Display & External I/O Options



P60N



P40N

Nexus Displays

P60N

Touch-Screen LCD for a graphical data presentation. 320 x 240 pixels, CCFL Backlight. See P60N Datasheet for details.

P40N

Multi-Function LED Display. For multiple display options, each display module is an RS-485 master. One display uses one Nexus communication port.

Analog Transducer Signal Outputs

1mAON4

4 Analog Outputs, 0–1mA, self-powered, scalable, bidirectional

1mAON8

8 Analog Outputs, 0–1mA, self-powered, scalable, bi directional

20mAON4

4 Analog Outputs, 4–20mA, self-powered, scalable

20mAON8

8 Analog Outputs, 4–20mA, self-powered, scalable

WIRING:

Common Mode

ACCURACY:

0.1% of Full Scale

CALIBRATION:

Self-Calibrating

SCALING:

Programmable

ORDERING SPECIFICS: Up to 4 Analog Output modules can be used with each Nexus

Analog Transducer Signal Inputs

8AI1

8 Analog Inputs, 01mA, bidirectional

8AI2

8 Analog Inputs, 020mA, bidirectional

8AI3

8 Analog Inputs, 05 VDC, bidirectional

8AI4

8 Analog Inputs, 010 VDC, bidirectional Common Mode

WIRING:

0.25% of Full Scale

ACCURACY:

Programmable

SCALING:

Up to 4 modules can be used

ORDERING SPECIFICS:

Digital Dry Contact Relay Outputs

4RO1

4 Relay Outputs, 5 amps, 125 AC/DC, Form C

ORDERING SPECIFICS:

Multiple modules can be used

Digital Solid State Pulse Outputs

4PO1

4 Solid State Pulse Outputs, Form A or C KYZ Pulses

MAXIMUM PULSE SPEED:

20 pulses per second

ORDERING SPECIFICS:

Up to 4 modules can be used

Digital Inputs

8DI1

8 Digital Status Inputs
Wet/Dry Auto-Detect Up to 300 Volts DC



Additional I/O Accessories

PS10

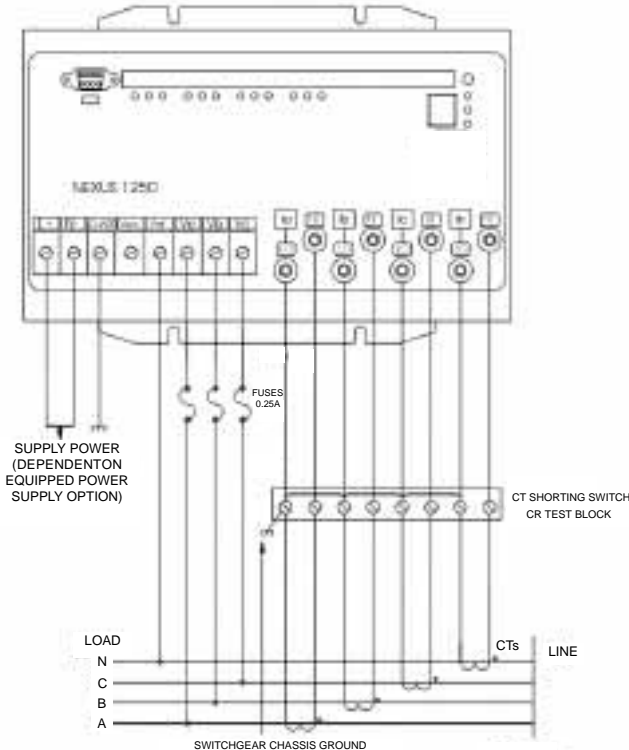
Additional power supply for up to 4 additional I/O modules. This additional accessory is needed when using more than 4 modules.

MBIO

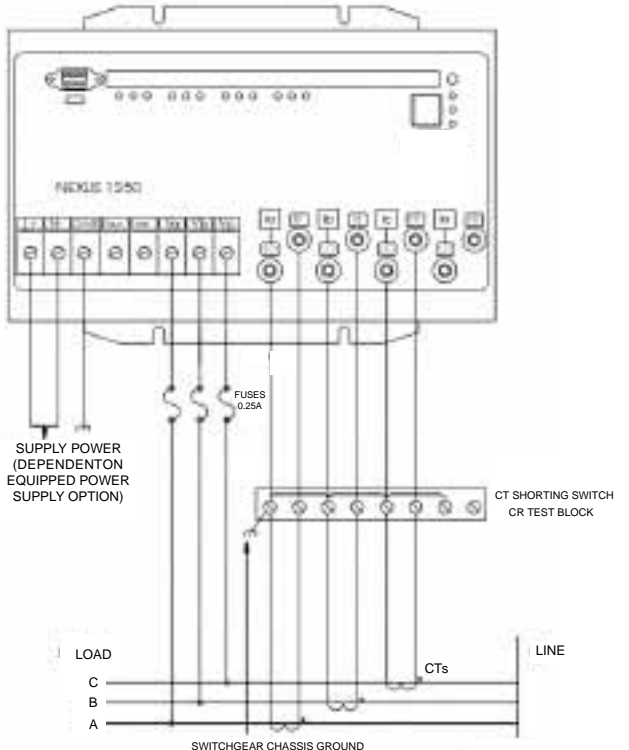
Mounting bracket for I/O modules

Wiring Diagrams

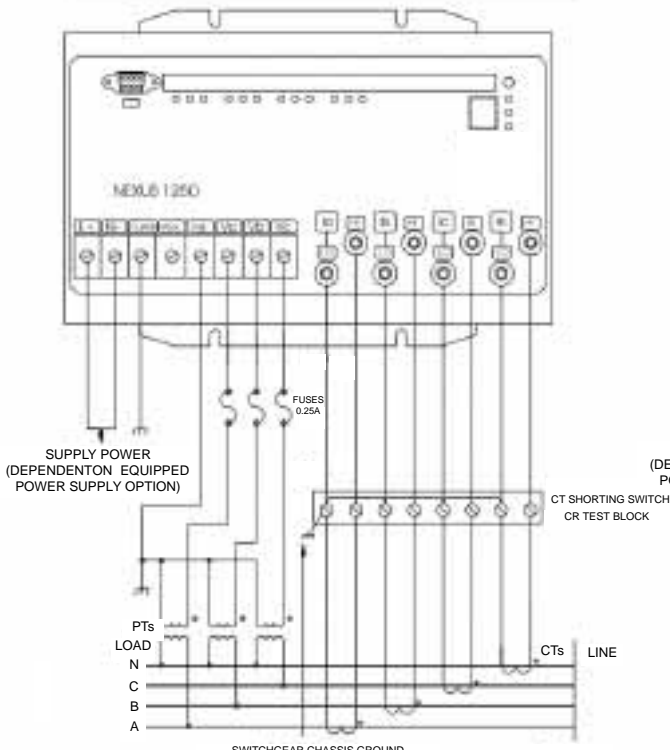
Nexus supports every wiring and configuration. It configures easily for 2, 2½, or 3 element. All wiring and hookup configurations are software configured.



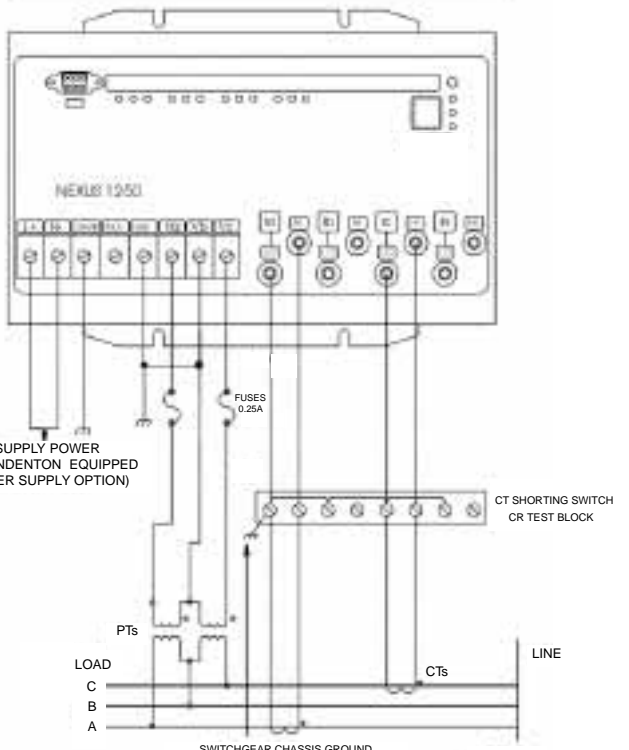
4 WIRE WYE: 3 ELEMENT DIRECT VOLTAGE



3 WIRE: 3 ELEMENT DIRECT DELTA



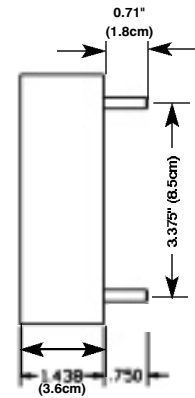
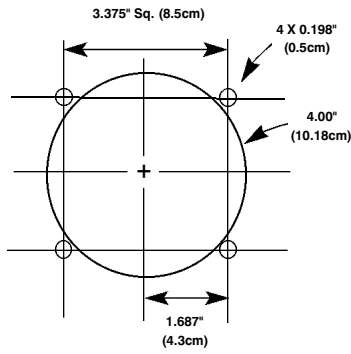
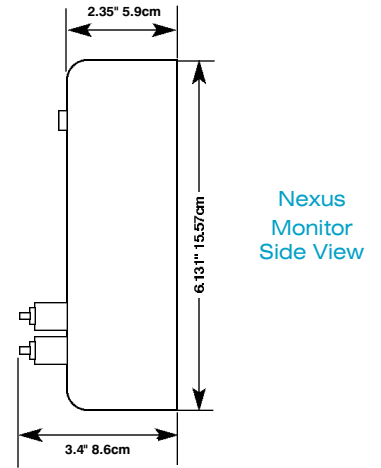
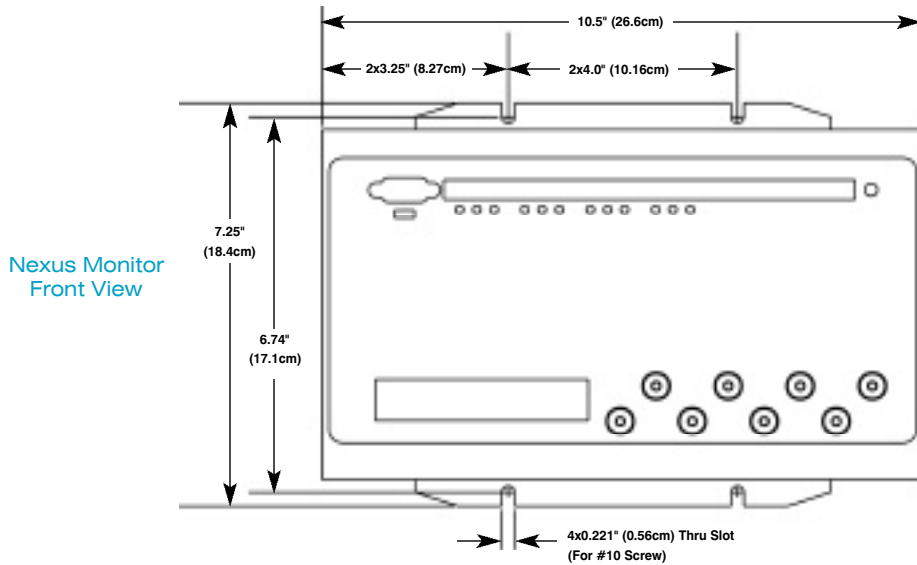
4 WIRE WYE: 3 ELEMENT CONNECTION USING 3 PTs and 4 CTs



3 WIRE: 3 ELEMENT OPEN DELTA

Mounting Information

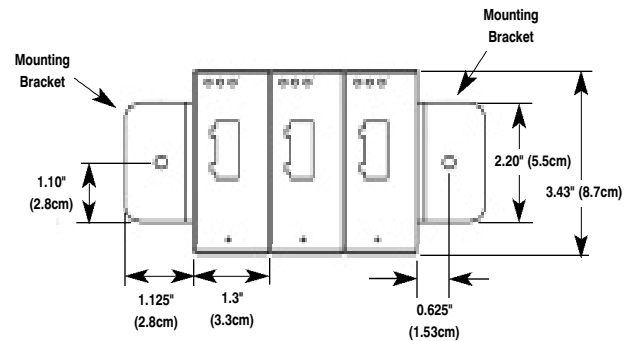
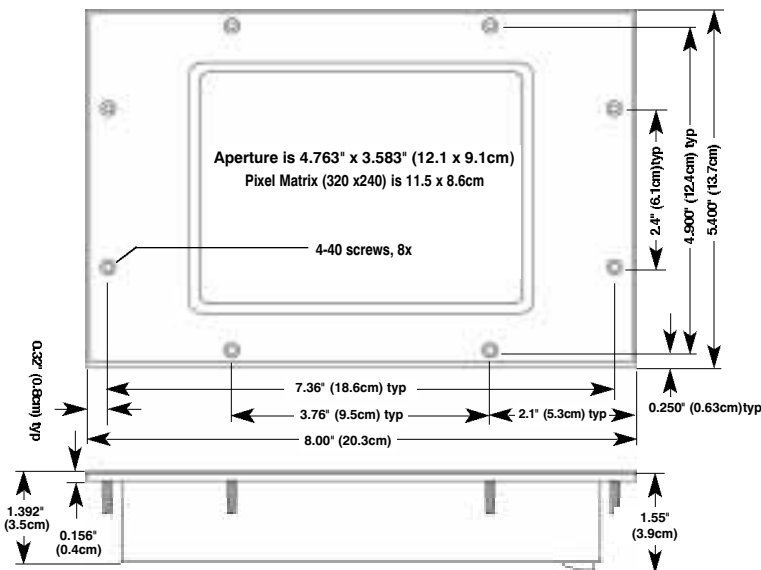
Contact Electro Industries for different mounting options.



Nexus P40N Display Cutout Pattern

Nexus P40N Display Front View

Nexus P40N Display Side View



Nexus P60N Touch-Screen Display Front and Side View

Nexus I/O Modules Front View

Specifications

INPUT VOLTAGE RANGE

- 150 Volt PH-N, 300V PH-PH (Suffix-120)
(Used with PTs for Extended Range)
- 300 Volt PH-N, 600 Volt PH-PH (Suffix-G)

VOLTAGE INPUT WITHSTAND CAPABILITY

- Voltage Inputs optically isolated to 2500VDC.
Meets ANSI C37.90.1 (Surge Withstand Capability)

INPUT CURRENT RANGE

- 5 amp Inputs 2x continuous programmable to any CT range
 - Fault Current recording to 60 amps peak secondary based on 5 amp full scale
- Note: 1 amp and 0.25 amp current inputs available as special order

CURRENT INPUT WITHSTAND CAPABILITY

- 100 amps for 10 Seconds
- 300 amps for 1 Second

BURDEN

- Voltage Inputs: 0.05VA Max
- Current Inputs: 0.005VA Max

COMPLIANCE

- ANSI C12.20 Class 0.2 and IEC687 (Accuracy)
- ANSI C37.90.1 (Surge Withstand)
- ANSI C62.41 (Surge)

ISOLATION

All inputs and outputs are isolated to 2500 Volts. All Com Ports are additionally isolated from each other.

TEMPERATURE RATING

- Operating Temperature: -40 to +80°C
- Humidity: Up to 95% Non-Condensing

SENSING METHOD

- Up to 512 Samples per Cycle (Programmable)
- 16 Bit A/D Resolution – Dual Converters
- Utilizes patent pending Accu-measure® Technology
- True RMS

ACCURACY RATING

- This unit complies with and exceeds ANSI C12.20 and IEC687 accuracy requirements.
- Industry Canada Revenue Metering Approval: #AE-1069

UPDATE TIME

- 50 msec. — High Speed Readings
- 1 Second — Revenue Accurate Reading

CONTROL POWER REQUIREMENTS

- 90–276 Volts AC/DC (Suffix -D2)
- 18–60 Volts DC (Suffix -D)

FREQUENCY RANGE

20–400Hz

COMMUNICATION FORMAT

- Programmable parity and stop bits
- Communication Protocols: Modbus TCP/IP ASCII/RTU and DNP 3.0
- 4 Communication ports, 2 slave ports, 2 selectable master/slave ports.
- All ports use 2-wire RS-485 communication; Port 1 is RS-232 or RS-485 Selectable
- INP2 - 56k Modem with Dial-Out Capability
- INP10 - WebMod Running Modbus TCP Only - 10 Base-T
- INP100 - Total Web Solutions - 10/100 Base-T

CONSTRUCTION

Constructed in a metal case. All hardware is stainless steel.

SHIPPING

Total shipping weight:

approx. 12 lbs (5.4 kgs)

Shipping container dimensions: 16" x13" x11"

(40.64cm x 33.02cm x 27.94cm)

Measurement Accuracy (% of Reading)

PARAMETER	50 MILLISECOND*	1 SECOND	DISPLAY RESOLUTION
Voltage (L-N)	0.1%	0.01%	5 Digit
Voltage (L-L)	0.1%	0.01%	5 Digit
Current	0.1%	0.025%	5 Digit
Frequency	0.01 Hz	0.001 Hz	00.001 Hz
KW @ Unity PF	0.1%	0.04%	5 Digit
KW @ .5 PF	0.1%	0.08%	5 Digit
KVA	0.1%	0.06%	5 Digit
VAR	0.1%	0.06%	5 Digit
PF	0.1%	0.06%	3 Digit
Harmonics	N/A	0.1%	3 Digit
KW/Hours	N/A	0.04%	16 Digit
KVA/Hours	N/A	0.06%	16 Digit
KVAR/Hours	N/A	0.06%	16 Digit

* When high-speed readings are brought through the analog output modules, update time is at approx. 180 msec. for each 2 channels of analog signals.

Ordering Information

To order a Nexus unit:

1. Fill out the **Options** desired on the order chart below. List accessories separately.
2. Specify display type and number.
3. Specify desired I/O modules and mounting bracket(s).
4. Specify Nexus Communicator 2.0.
5. If you provide CT and PT ratios and wiring, EIG will program the units at the factory.

Example:

OPTIONS:

Nexus1250-2meg-120-D2-60Hz-INP10-P40N-1mAON4-8AI1-MBIO-NXCOM2.0.1C

ACCESSORIES:

This equates to a Nexus Monitor with 2 megs of memory, an operating voltage of 120, a 90-276 Volts AC/DC power supply, a 60 Hz frequency, an internal ethernet port, a multi-function LED display, a 0-1mA output module with an analog input module, mounting bracket and one site license for Nexus Communicator 2.0 software.

Ordering Specifications

	Nexus Base	Memory Options	Operation Voltages	Control Power	Frequency Range	Internal Expansion Port Options	Standards Compliance
Option Numbers:	-	-	-	-	-	-	-
Example:	Nexus 1250	- 2meg	- 120	- D	- 60 Hz	- INP100	- ICR
	Nexus 1250	512K	120 150 Volts PH-N	D 18-60VDC Power Supply	60 Hz	INP2 56k with Dial-Out	ICR Industry Canada Revenue Metering Approval
		2meg	300 Volts PH-PH	D2 90-276 Volts AC/DC Power Supply	50 Hz	INP10 Internal Ethernet TCP/IP 10 Base-T	
		4meg	G 300 Volts PH-N 600 Volts PH-PH		400 Hz	INP100 Total Web Solutions 10/100 Base-T	

Accessory Options

DISPLAYS

- P60N** Graphical LCD Touch-Screen Display
P40N Multi-Function LED Display

- PSIO** Power Supply for Additional IO modules
MBIO I/O Mounting Bracket (**must be ordered with purchase of I/O module**)

I/O MODULES

- 1mAON4** 4 Analog Outputs, 0-1mA
1mAON8 8 Analog Outputs, 0-1mA
20mAON4 4 Analog Outputs, 4-20mA
20mAON8 8 Analog Outputs, 4-20mA
8AI1 8 Analog Inputs, 0-1mA
8AI2 8 Analog Inputs, 0-20mA
8AI3 8 Analog Inputs, 0-5 VDC
8AI4 8 Analog Inputs, 0-10 VDC
4RO1 4 Relay Outputs
4PO1 4 Solid State Pulse Outputs
8DI1 8 Digital Status Inputs

SOFTWARE

- NXC2.0.1C** Nexus Communicator 2.0 for Windows® Single-Computer License (One Site)
NXC2.0.MC Nexus Communicator 2.0 for Windows® Multiple-Computer License (One Site)
AIRPT.1C AiReports Power Analysis Software for Windows® Single-Computer License (One Site)
AIRPT.MC Multiple-Computer License (One Site)
NXDS 1.0.C Dial-In Server For Modems Single-Computer License (One Site)
NXDS 1.0.MC Dial-In Server For Modems Multi-Computer License (One Site)



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