

Power Over the NET™



PN5212/PN5320 • PN7212/PN7320 • EA1140/EA1240
PN9108/PN0108

ALTUSEN Power Over the NET™ products offer outlet level control combined with remote access to give IT administrators the ability to power control devices attached to the unit from practically any location via a TCP/IP connection. With support for realtime power status measurement, Power Over the NET™ devices enable administrators to monitor the current, voltage and power consumption of their IT equipment, either at the PDU or outlet level, minimizing the power cost of running their equipment; and ensuring high levels of system availability for server rooms of all sizes.

A real-time measuring feature, coupled with a threshold alarm, keeps you informed of the operating status of all your attached equipment. Warning messages regarding triggered alarms can be sent via an SMTP server or SMS via the unit's Digital Output port. Power Over the NET™ devices also provide sensor ports for temperature and humidity monitoring and threshold alarm message notification. IT administrators are able to easily and conveniently monitor and power control connected devices – remotely if necessary – by means of a browser-based UI, thereby minimizing maintenance costs and ensuring 24/7 reliability for their server room operations.

ALTUSEN Power Over the NET™ products can be daisy-chained to manage even more devices, so your server room management can expand in step with your company's growth. In a daisy-chained installation, administrators can remotely monitor and control the power status of a server that has a dual power supply from a single portal, by connecting its power cords to the outlets of separate level units (so they can receive power from separate sources). For ease of management, when Power Over the NET™ devices are deployed in conjunction with other ALTUSEN products, administrators can access them all from the same user interface. When a Power Over the NET™ device is integrated in a CC (Control Center Over the NET™) management software installation, the power outlet of an IT device can be associated with its KVM port and displayed on the same CC web page. This allows IT administrators to completely control an IT device from a single user interface.

Not all products support these features. Please see the table below.

Comparison

	PN5212	PN5320	PN7212	PN7320	PN9108	PN0108*
Amp	20 A	30 A	20 A	30 A	10 A	10 A
Outlet	12	20	12	20	8	8
Rack Space	0U	0U	0U	0U	1U	1U
LAN Port	•	•	•	•	•	
Daisy-chain	•	•	•	•	•	•
Switching Capability	Per Outlet	Per Outlet	Per Outlet	Per Outlet	Per Outlet	Per Outlet
Metering Capability	PDU Level	PDU Level	Outlet & PDU Level	Outlet & PDU Level	PDU Level*	
Thresholds & Alarms	•	•	•	•		
Environment Monitoring			•	•		
Digital Output Port			•	•		
Modem Support			•	•	•	

* Current Load Only

* The PN0108 is not a stand-alone unit; it must be connected to an ATEN or ALTUSEN TCP/IP accessible module to access these features.



Power Management Features

ALTUSEN's Power Over the NET™ products are designed with up to 20 outlets for easy server room management. Each outlet can be individually controlled so that users can set the power on/off sequence and delay time for each outlet separately, so that equipment can be turned on in the proper order. On/Off scheduling allows administrators to configure start, shutdown, and restart times on a daily, weekly, or monthly basis.

Real time Monitoring

With PDU/Outlet level metering, IT administrators can easily monitor the real-time current, voltage, and power consumption status of all connected IT equipment via a browser-based UI. With the addition of temperature and humidity sensors, even the status of the rack environment can be monitored from just about anywhere in the world.

Outlet Switching

By simply clicking a button on the browser-based UI, administrators can power control the connected devices with ease. There is no longer any need to move around the server room turning equipment on and off. Outlet level remote switching ensures that the server room operates smoothly.

Environment Monitoring

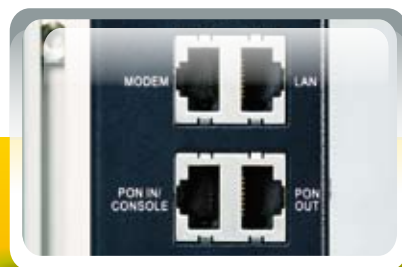
The Power Over the NET™ supports external, environment sensors that allow administrators to monitor temperature and humidity remotely. IT administrators can set environment thresholds to identify critical value and take preventive actions before a system failure occurs – thereby helping to obtain the highest degree of availability for all mission-critical equipment.

Early Warning Notification

The Power Over the NET™ permits server room administrators to set custom thresholds for current, voltage, power consumption, humidity, and temperature. When levels exceed the user defined thresholds, designated recipients can receive alarm notifications via SMTP email, SNMP traps, or SMS sender (connected to the Digital Output port). An audio alarm can also sound and lights will blink at the local site. Necessary steps can be taken to avoid equipment damage due to such things as circuit overload – reducing mean time to recovery and minimizing loss.

Centralized Management

Combining with ALTUSEN's CC (Control Center Over the NET™) management software gives IT administrators the advantages of centralized control over the entire Power Over the NET™ installation, as well as all other Over the NET™ products from a single user interface. By associating the KVM™ port, serial port and power outlet of an IT device, all the ports can be presented on the same web page for convenient access and management.



Flexible Expansion



Environment Monitoring

ALTUSEN Product Integration

The ALTUSEN Power Over the NET™ can be integrated with multiple ALTUSEN devices to provide a single interface point – the switch's interface – allowing IT administrators to control servers or serial devices at the same time as they control their power management. For KVM switches that support the Power Association function, a KVM port can be associated with a power outlet.

Redundant Power Management

The ALTUSEN Power Over the NET™ supports daisy-chaining and outlet groups to provide redundant power management. Equipment with dual power supplies can be assigned to outlet groups for convenient control. Since up to 15 additional units can be daisy chained from the master unit, IT administrators can connect a server's power cords to different units - each of which is connected to a separate power source - for failsafe operation. Management efficiency is also increased, since the power status of both outlets can be monitored and controlled from the same portal.

Expansion

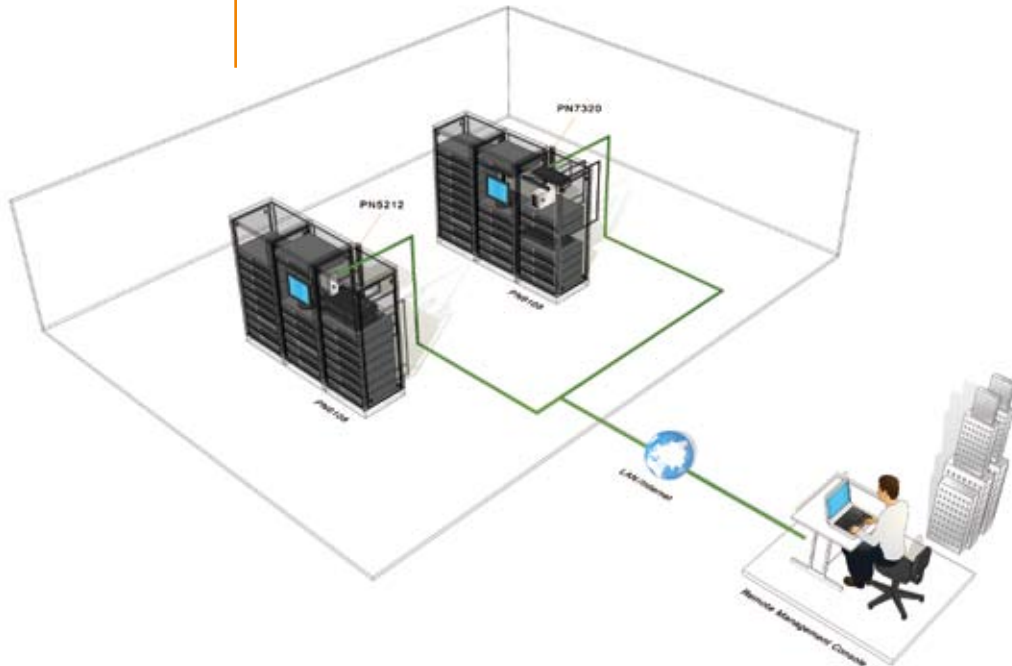
To control even more devices, up to 15 additional stations can be daisy-chained. We at ALTUSEN understand that your business may start conservatively and need to expand over time. Daisy chain expansion allows you to manage a small number of devices in the beginning, and easily add on when your business needs increase. ALTUSEN's Power Over the NET™ products offer flexible solutions for businesses of all sizes. More importantly, they offer solutions for your future.

Overcurrent Protection

Built-in overcurrent protection and recovery saves your money by eliminating costly onsite service calls. With Power Over the NET™ products, you have the ability to access your server room any time and deal with any situation that may occur – entirely immediately and effectively.

Not all products support these features. Please see the comparison table for difference.

Application Diagram Power Over the NET™



- UPS
- CN8000*
- LAN/Internet

* The CN8000 from ATEN is an ultra-compact, Over IP solution for remote access to computers and KVM installations. Please see ATEN catalog or www.aten.com for more details.

PN5212/PN5320/PN7212/PN7320

Power Distribution Unit

Features



PN5212

- 20 A
- 12 Outlets

PN5320

- 30 A
- 20 Outlets

PN7212

- 20 A
- 12 Outlets
- Sensor ports, digital output and modem support

PN7320

- 30 A
- 20 Outlets
- Sensor ports, digital output and modem support

EA1140

- Temperature Sensor

EA1240

- Humidity Sensor



TAIWAN
EXCELLENCE 2010

• PN7212/PN7320

Scheduled for **Q2** Release

Power Distribution

- Maximum Amps/Outlet: 20A / 12 outlets (PN5212 / PN7212); 30A / 20 outlets (PN5320 / PN7320)
- Space saving 0U rack mount design
- IEC or NEMA outlet models
- Daisy chain up to 15 additional stations for up to 192 (PN5212 / PN7212) or 320 (PN5320 / PN7320) outlets
- 2 x 7 segment front panel LED shows Station and Outlet ID
- Overcurrent protection and recovery for each outlet plus PDU overcurrent protection. Remote users can monitor outlet status via web pages on their browsers
- Safe shutdown support
- Separate power for the unit's own power and its power outlets. The user interface is still accessible even when an overload condition trips the devices' circuit breaker

Remote Access

- Remote power control via TCP/IP and a built in 10/100 Ethernet port
- Out of Band operation via modem access*
- Network Interfaces: TCP/IP, PPP, UDP, HTTP, HTTPS, SSL, SMTP, DHCP, ARP, NTP, DNS, Telnet, 10Base-T/100Base-TX, auto sense, Ping
- IPv6 support

Operation

- Local and Remote power outlet control (On, Off, Power Cycle) by individual outlets and outlet groups
- Outlet group support at the PDU and Daisy-chain levels – the same action can be performed on a specified group of outlets at the same time
- Supports redundant power management via daisy chaining and outlet groups
- On/Off scheduling for individual outlets and outlet groups. Power management tasks can be scheduled on a daily, weekly, monthly, or user-specified times basis
- Supports multiple power control methods – Wake on LAN, System After AC Back, Kill the Power
- Power-on sequencing - users can set the power on sequence and delay time for each outlet to allow equipment to be turned on in the proper order
- Easy setup and operation via a browser-based user interface
- Multibrowser support (IE, Mozilla, Firefox, Safari, Opera, Netscape)
- Telnet and SSH access for text menu configuration and outlet level switching / monitoring
- Local console access support
- Java GUI AP program provided for non-browser connectivity
- RTC support to keep the timer running during times of no power.
- Up to 64 user accounts - up to 32 concurrent logins

Management

- Power status measurement at PDU and outlet* levels
- LED indicators for current; voltage; power dissipation; temperature; and humidity at the PDU and outlet* levels
- Real-time current; voltage; power dissipation; and energy consumption displayed in a browsed-based UI for monitoring at the outlet*, group, PDU, and daisy-chain levels
- Environment monitoring* – supports external temperature and humidity sensors for rack temperature and humidity monitoring
- Current, voltage, power dissipation, energy consumption, temperature, and humidity threshold level setting
- Alert threshold notification for selected events (On, Off, Recycle, Failure, etc.), via audio alarm and blinking LEDs (locally), SMTP, SNMP trap notification, and digital output*
- Naming support for outlets and outlet groups
- User outlet access assignment on an outlet-by-outlet basis.
- Windows-based Log Server; event logging, and syslog support
- Integration with ALTUSEN CC2000 Management software and KVM devices
- API for 3rd party software centralized control integration
- Upgradeable firmware – daisy chained stations receive the upgrade via the daisy chain bus
- Multi-language support: English, German, Traditional Chinese, Simplified Chinese, Japanese, Korean, Russian

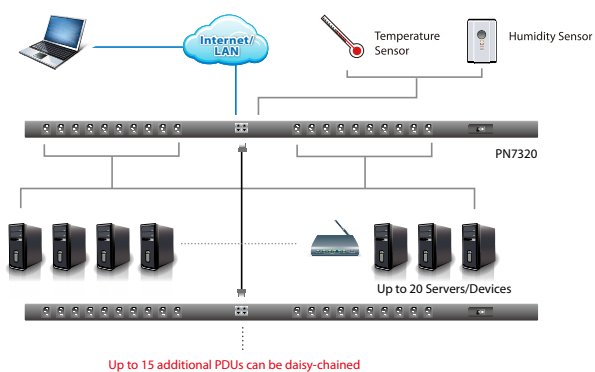


Security

- Three-level password security
- IP/MAC filtering
- Strong security features include strong password protection and advanced encryption technologies – 128 bit SSL
- Remote authentication support: RADIUS, TACACS+, LDAP, LDAPS and Active Directory

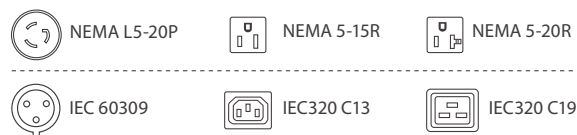
* Feature supported by PN7212/PN7320 only

Setup



Inlet/Outlet Chart

Part No.	Inlet	Inlet Type	Inlet Current	Outlet	Outlet Type	Outlet Current
PN5212	1	NEMA L5-20P (120V)	20A	12	NEMA 5-15R	12A
	1	IEC 60309 (230V)	16A	12	IEC320 C13	10A
PN5320	1	NEMA L5-20P (120V)	30A	17	NEMA 5-15R	12A
				3	NEMA 5-20R	16A
PN7212	1	NEMA L5-20P (120V)	20A	17	IEC320 C13	10A
	1	IEC 60309 (230V)	16A	3	IEC320 C19	16A
PN7320	1	NEMA L5-20P (120V)	30A	17	NEMA 5-15R	12A
				3	NEMA 5-20R	16A
PN7320	1	IEC 60309 (230V)	32A	17	IEC320 C13	10A
				3	IEC320 C19	16A



Optional Equipment/Software

- Control Center Over the NET™ (Page 17)
- EA1140 Temperature Sensor
- EA1240 Humidity Sensor

Accessories



1. SA0141 Serial Adapter (RJ45-F to DB9-F; DTE to DTE) x 1
2. SA0142 Serial Adapter (RJ45-F to DB9-M; DTE to DCE) x 1
3. Power cord x 1
4. Rack Mount Kit x 1

PN9108

8-Port Power Over the NET™



Features

- Expansion
- Daisy-chain



Current Display –
The current status (in amps) displays here when the Current Display Switch is toggled ON



Remote Access –
connects the PN9108 to the Internet via Ethernet cable.



RS-232 Support –
This port can be used to attach a UPS, modem, or PC terminal.



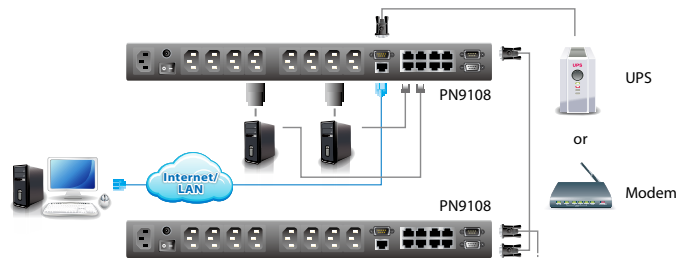
Detachable front panel

- Remote power on / off / reboot control for eight outlets via TCP/IP and a built in 10/100 Ethernet port
- Local power on / off / reboot control via the PN9108's RS-232 port to the computer's RS-232 port
- Daisy-chain up to 15 additional stations to control up to 128 outlets*
- Manual switching between Local and Remote access for each port via front panel push button switches
- Individual control of each port – users can set the power on sequence and delay time for each port to allow equipment to be turned on in the proper order
- Easy setup and operation via a browser interface
- Provides three configuration/management methods: Browser; Telnet; or Console Terminal
- Safe shutdown and rebooting for Windows systems**
- Overcurrent protection and recovery for each AC port (110 V model only) plus total port overcurrent protection (both models) – remote users can monitor the outlet status via the GUI interface on their browsers
- Separate circuits for the unit's power and the power to the devices– the power control status menu is still accessible even when an overload condition trips the devices' circuit breaker
- Cumulative load measurement – remote users can view load information in amperes via the GUI on their browsers
- On / Off scheduling – allows everything from a onetime start/shutdown, to daily, weekly, etc. starts/ shutdowns at user-specified times
- Port grouping – perform the same action on a specified group of ports
- Current Display for easy current status monitoring
- Out of Band (OOB) operation via terminal or dialup connection
- Two-level security – Administrator and User
- Detachable front panel for convenient rack mounting

* Compatible switches: PN9108, PN0108

** Safe shutdown and rebooting is supported if the Power Monitor utility has been installed

Setup



Up to 15 additional PN9108/PN0108 can be daisy-chained :

Optional Equipment/Software

- **Control Center Over the NET™** (Page 17)

Accessories



1.



2.



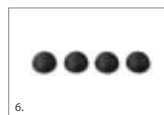
3.



4.



5.



6.



7.

1. AC Source Power Cord x 1
2. Power Outlet Power Cords x 8
3. Safe Shutdown Cables x 8
4. PON Cable (DB9 F to DB9 M) x 1
5. Rack Mount Kit x 1

6. Foot Pad Set (4 pcs.) x 1
7. Software CD x 1

PN0108

8-Port Power Over the NET™



Features

- Remote power on / off / reboot control for eight outlets via an ATEN or ALTUSEN TCP/IP accessible module
- Local power on / off / reboot control via the PN0108's PON port to the computer's RS-232 port
- Daisy-chain up to 15 additional stations to control up to 128 outlets
- Manual switching between Local and Remote access for each port via front panel push button switches
- Individual control of each port – users can set the power on sequence and delay time for each port to allow equipment to be turned on in the proper order
- Easy setup and operation via a GUI interface
- Provides three configuration/management methods: Browser; Telnet; or Console Terminal
- Safe shutdown and rebooting for Windows systems*
- Overcurrent protection and recovery for each AC port (110 V model only); total port overcurrent protection (both models) – remote users can monitor the outlet status via the GUI interface
- Separate circuits for the unit's power and the power to the devices – the power control status menu is still accessible even when an overcurrent condition trips the devices' circuit breaker
- On/Off scheduling – allows everything from a onetime start/shutdown, to daily, weekly, etc. starts/shutdowns at user-specified times
- Port grouping – perform the same action on a specified group of ports
- LEDs for easy status monitoring
- Two-level security – Administrator and User
- Configuration can be reset
- Firmware upgradeable – daisy-chained stations receive the upgrade via the daisy-chain bus

* Safe shutdown and rebooting is supported if the Power Monitor utility has been installed.

** The CN8000 from ATEN is an ultra-compact, Over IP solution for remote access to computers and KVM installations. Please see ATEN catalog or www.aten.com for more details.

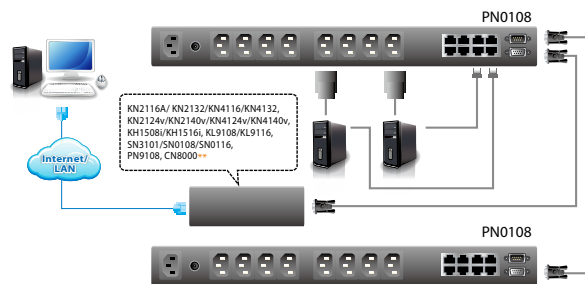


Multi-function PON Input Port - Supports daisy-chaining, TCP/IP accessible module connections, or a local administrator console.



Circuit breaker for overcurrent protection and recovery

Setup



Up to 15 additional PN0108 can be daisy-chained

Optional Equipment/Software

- KL9108/KL9116 Dual Rail LCD KVM Switches (Page 12)
- KVM Over the NET™ (Page 21)
- PN9108 Power Over the NET™ (Page 34)
- Serial Over the NET™ (Page 37)

Accessories



1. AC Source Power Cord x 1
2. Power Outlet Power Cords x 8
3. Safe Shutdown Cables x 8
4. PON Cable (DB9 F to DB9 M) x 1
5. Rack Mount Kit x 1
6. Foot Pad Set (4 pcs.) x 1
7. Software CD x 1

Power Over the NET™ Specifications

Function		PN5212		PN5320		PN7212		PN7320	
Power Outlets	Direct	12		20		12		20	
	Max.	192 (Daisy-chain)		320 (Daisy-chain)		192 (Daisy-chain)		320 (Daisy-chain)	
Connectors	Power Inlet	1 x NEMA L5-20P	1 x IEC 60309	1 x NEMA L5-20P	1 x IEC 60309	1 x NEMA L5-20P	1 x IEC 60309	1 x NEMA L5-20P	1 x IEC 60309
	Power Outlets	12 x NEMA 5-15R	12 x IEC320 C13	17 x NEMA 5-15R + 3 x NEMA 5-20R	17 x IEC320 C13 + 3 x IEC320 C19	12 x NEMA 5-15R	12 x IEC320 C13	17 x NEMA 5-15R + 3 x NEMA 5-20R	17 x IEC320 C13 + 3 x IEC320 C19
	Daisy-chain	In / Console	1 x RJ-45 (F)						
		Out	1 x RJ-45 (F)						
		Modem	--	--	1 x RJ-45 (F)				
		LAN	1 x RJ-45 (F)						
		Environmental Monitoring	--			2 x RJ-11 (F)			
	Digital Output	1 x Terminal Block							
I/P Rating		100-125V; 50/60Hz; 16A	200-240V; 50/60Hz; 16A	100-125V; 50/60Hz; 24A	200-240V; 50/60Hz; 32A	100-125V; 50/60Hz; 16A	200-240V; 50/60Hz; 16A	100-125V; 50/60Hz; 24A	200-240V; 50/60Hz; 32A
O/P Rating	Per Port	100-125V; 50/60Hz; 12A	200-240V; 50/60Hz; 10A	100-125V; 50/60Hz; 12A	200-240V; 50/60Hz; 10A	100-125V; 50/60Hz; 12A	200-240V; 50/60Hz; 10A	100-125V; 50/60Hz; 12A	200-240V; 50/60Hz; 10A
	Total	100-125V; 50/60Hz; 15A	200-240V; 50/60Hz; 15A	100-125V; 50/60Hz; 23A	200-240V; 50/60Hz; 31A	100-125V; 50/60Hz; 15A	200-240V; 50/60Hz; 15A	100-125V; 50/60Hz; 23A	200-240V; 50/60Hz; 31A
Power Consumption		TBA		TBA		TBA		TBA	
Environment	Operating Temp.	0–50° C							
	Storage Temp.	-20–60° C							
	Humidity	0–80% RH, Non-condensing							
Physical Properties	Housing	Metal							
	Weight	TBA		TBA		TBA		TBA	
	Dimensions (L x W x H)	4.57 x 5.00 x 125.30 cm		4.57 x 5.00 x 167.64 cm		4.57 x 5.00 x 125.30 cm		4.57 x 5.00 x 167.64 cm	

Function		PN9108		PN0108	
Power Outlets	Direct	8		8	
	Max.	128		128	
Connectors	Power Inlet	1 x IEC 60320/C14 (M)			
	Power Outlets	8 x IEC 60320/C13 (F)			
	PON In	1 x DB-9 (F)			
	PON Out	1 x DB-9 (M)			
	Safe Shutdown	8 x 6-pin Safe Shutdown Jacks			
	LAN	1 x RJ-45 (F)		--	
	RS-232	1 x DB-9 (M)		--	
I/P Rating (Total input)		100 – 120V; 50/60Hz, 12A	220 – 240V; 50/60Hz, 10A	100 – 120V; 50/60Hz, 12A	220 – 240V; 50/60Hz, 10A
O/P Rating	Per Port	100 – 120V; 50/60Hz, 9A (Max.)	220 – 240V; 50/60Hz, 9A (Max.)	100 – 120V; 50/60Hz, 9A (Max.)	220 – 240V; 50/60Hz, 9A (Max.)
	Total	100 – 120V; 50/60Hz, 11A (Max.)	220 – 240V; 50/60Hz, 9A (Max.)	100 – 120V; 50/60Hz, 11A (Max.)	220 – 240V; 50/60Hz, 9A (Max.)
Power Consumption	No Load	120V/16W; 230V/16W		120V/15W; 230V/15W	
	Max Load	120V/1440W; 230V/2300W		120V/1440W; 230V/2300W	
Environment	Operating Temp.	0–40°C			
	Storage Temp.	-20–60°C			
	Humidity	0–80% RH, Non-condensing			
Physical Properties	Housing	Metal			
	Weight	4.20 kg		3.70 kg	
	Dimensions (L x W x H)	43.24 x 25.42 x 4.40 cm (19"/1U)		43.24 x 20.98 x 4.40 cm (19"/1U)	

Function		EA1140		EA1240	
Connectors	Inlet	RJ-11 (F)			
	Receiver	TBA		TBA	
Measurement Range	Range	0 – 55°C		0 – 100% RH	
	Accuracy	+/- 0.5°C		+/- 3.5% RH	
Power Consumption		TBA		TBA	
Environment	Storage Temp.	-20 - 60°C			
Physical Properties	Housing	Plastic			
	Weight	TBA		TBA	
Cable Length		3 m			

Product specifications and appearance are subject to change without notice.

Serial Over the NET™



**SN3101 (Serial Device Server)
SN0108 • SN0116**

Serial Over the NET™ products are control units that provide both In-Band and Out-of-Band remote serial access to up to 16 servers or other serial IT devices (hubs, routers, power management devices, etc.), via a Telnet or SSH TCP/IP connection. Serial Over the NET also provides one port Serial Device Server that supports RS-232, RS-422, and RS-485 data transfers, as well as providing Ethernet connectivity for a wide variety of serial devices used in commercial applications. These include industrial control, data acquisition, access control, environment monitoring, banking, telecoms, remote site management, etc. This total serial data transfer system transforms the capability of legacy serial devices, and allows them to take advantage of the speed and reliability of today's modern communication techniques.

Comparison

Model No.		SN3101	SN0108	SN0116
Device Connection		1	8	16
Concurrent Access		1	8	16
Device	Interface	Serial (RS-232/ RS-485/ RS-422)	Serial (RS-232)	Serial (RS-232)
	Connector	DB-9	RJ-45	RJ-45
Remote Access		•	•	•
LAN Connection		RJ-45	RJ-45	RJ-45
Out of Band Configuration			•	•
PON Support		•	•	•
Real COM Port Support		•	•	•
Power		AC, DC Power	AC, DC Power*	
Communication Modes		Real COM, TCP Server (RAW TCP), TCP Client, UDP Server/Client, Modbus, and Serial Tunnel	Real COM, TCP Server (RAW TCP), TCP Client	

* Available with DC power at customer's request.(SN0108D/SN0116D)

Virtual Port Management

Serial Over the NET™ products offer Real COM Port support. Devices connected to this type of virtual port appear as if they were directly connected to a COM port on the local computer. Data transmission between the device and the local computer takes place over the virtual COM port to the Serial Over the NET™ device. This mode is especially convenient for use with POS terminals, Bar Code Readers, Serial printers, etc.

Simultaneous Control

Multiple users can log in at the same time via a TCP/IP connection from any computer connected to the Internet. Since the first 8/16 users are able to control separate ports, all attached devices (up to 8/16) can be accessed concurrently. The other concurrent login users may view the port's video output.

Individual Port Configuration

The administrator, as well as users with port configuration permission, can set up a specific operating mode for each port: Console Management, Raw TCP Mode, or Real COM Port.

Alert Settings Support

Serial Over the NET™ products can inform you via email about problems that may occur on the devices that are connected to them. Up to 10 types of alert for each port can be emailed to you. For example, when a device encounters a problem — such as a critical error that requires a reboot — a debug message is sent through its COM port. When the Serial Over the NET™ device receives the message, it sends an email to inform the user.

Multiple Communication Modes

The Serial Over the NET™ supports a wide variety of serial communication modes, such as Real COM, TCP Server, TCP Client, UDP, Modbus, and Serial Tunnel – offering versatile and diversified serial data access methods to meet a broad range of application requirements.

Out of Band Configuration

OoBC (Out of Band Configuration), provides the ability to access Serial Over the NET™ devices over a serial connection. This can either be a direct serial connection from a local computer, or a dial in connection via modem. OOB connection support includes HyperTerminal, PPP, Telnet, and SSH.

Advanced Security features

Serial Over the NET™ devices are equipped with internal and external user authentication methods and port-specific access rights. The administrator may set different port access rights to specific users on a port-by-port basis, allowing for customized security. Each port can be accessed individually by up to eight or sixteen users. Login security is port specific and supports secure multi-user and multi-level login.

Complete Serial and Power Management Solution

Serial Over the NET™ products can work in tandem with other remote management products — such as the ALTUSEN PN9108/PN0108 Power Over the NET™ remote power management system to provide convenient, reliable, and effective, remote data center device management.

Authentication Network Management Service

ANMS (Authentication Network Management Service) supports login authorization management from external sources. External authorization sources include CC Management*, RADIUS, and SNMP settings.

* Allows authorization for the Serial Over the NET™ products via a Control Center server (CC2000).

SN3101 Serial Device Server

Standard TCP/IP interface – Broad Choice of Operation Modes

The SN3101 offers versatile, diversified serial data access operations to meet a broad range of application requirements – these include Console Management, Real COM, TCP Server, TCP Client, UDP, Modbus, Serial Tunnel and Virtual Modem.

More convenient, More Efficient Serial Device Management across the Entire Installation

The Serial Network Device Management – a windows-based configuration and management utility – proves convenient and efficient management of your SN3101 installation.

Convenient, Flexible, Access and Configuration

The SN3101 offers a variety of "over IP" methods to control your serial devices – from browser login, to a stand-alone Serial Network Device Management AP program, to Telnet/SSH terminal access.

Secure Data Transmission

Recognizing the importance of secure data transmission to your operations, powerful safety features have been designed into the SN3101. With 128-bit SSL serial data encryption for TCP Server, TCP Client, Virtual Modem and Serial Tunnel operation modes, you can feel confident that your data is adequately safeguarded.

Centralized Access Control

The SN3101 makes security policy enforcement smooth and easy. Administrators can authenticate user logins and authorize individual user rights via RADIUS, LDAP, LDAPS and Microsoft Active Directory servers.

Modbus Ethernet-to-Serial Support

The SN3101's support for Modbus Ethernet-to-serial data transmission provides a bridge that seamlessly integrates Modbus devices (such as PLCs, DCSs, HMIs, etc.) into your serial network.

SN3101

Serial Device Server



Features

- Provides over IP access for industrial serial devices.
- Software selectable RS-232/422/485 3-in-1 serial port
- Built-in 15KV ESD serial port protection
- Max. baud rate: 460 Kbps
- Wide range of versatile serial operation modes
- High security via 128-bit SSL encryption for serial data transmission
- Redundancy support via multiple simultaneous Real COM, TCP Server, and TCP Client connections
- 64 Kbyte port buffer prevents data loss when the network is down
- Real COM driver for Windows 2000/XP/2003/Vista
- Fixed TTY driver for Linux
- Modbus Ethernet-to-Serial support
- Modem emulation enables existing modem-based applications to make connections over IP networks
- Virtual Terminal support (VT320, VT52, VT100, VT220)
- System configuration via Web Console (HTTP/ HTTPS) , Telnet / SSH Console and Windows utility
- Backup /restore and firmware upgrading via Web Console (HTTP/ HTTPS) and Windows utility
- Easy-to-use Windows utility (2000/XP/2003/Vista) for auto discovery, multiple device setting and monitoring
- Centralized external authentication support for RADIUS, LDAP(S), MS Active Directory
- SNMP MIB II and RS-232 MIB for network management
- SMTP and SNMP trap event notification
- Choice of power input: AC-DC adapter or DC IN direct

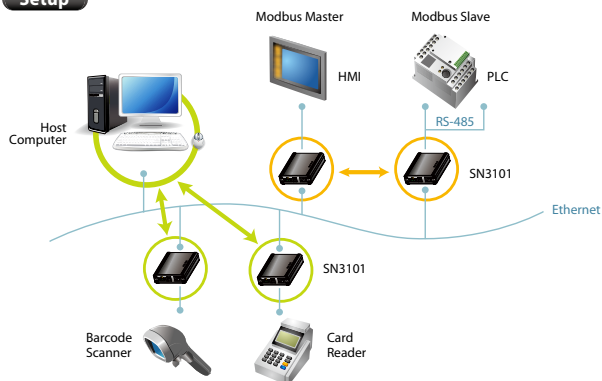


DC Power Support



Cat 5e Connection

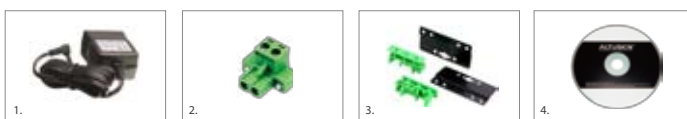
Setup



Optional Equipment/Software

- PN0108 Power Over the NET™ (Page 29)

Accessories



1. Power Adapter x 1
2. DC Terminal Connector x 1
3. Mounting Kit x 1
4. Software CD x 1

SN0108 / SN0116

Serial Over the NET™



Features



Serial Device
DTE, DCE

SN0108

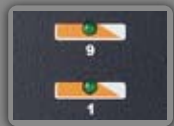
• 8 ports

SN0116

• 16 ports



Remote Access



Port LED Display

Complete Centralized Remote Serial Management:

- Remote serial access over the Internet for up to 8 (SN0108) or 16 (SN0116) servers or other serial IT devices
- Works in tandem with other ALTUSEN/ATEN appliances – such as the PN0108 and PN9108 – allowing administrators to manage a wide range of data center devices through IP connections
- Remote access to Serial over IP appliances, and attached devices, in centralized manner
- Session history; DC Operation* (SN0108D/SN0116D)

Security:

- Multi level secure user logins; Port-specific access rights
- Supports Active Directory (via CC management); RADIUS

Convenient Access:

- Browser access with an intuitive GUI – Java applet provides SSH connectivity with cut and paste and print screen capability
- Telnet client plus third party (PuTTY, etc.) client support – SSH connectivity available via PuTTY
- Console terminal
- Direct port addressing – via SSH to any Serial Over IP port (bypassing the SN0108 / SN0116)
- Dial in Modem and Direct Access via serial applications (such as HyperTerminal and PPP), or IP applications (such as SSH and Telnet)
- Modem sharing capability via IP-forwarding (Modem support)

Sun Ready:

- Hardware break suppression ensures uninterrupted Solaris server operation

Network Interfaces:

- TCP/IP, UDP/IP, HTTP, HTTPS, NTP, SNMP, Telnet, SSH, SSL, PPP
- 10Base-T/100BaseTX, auto sense
- DNS, DHCP, ARP, RADIUS; Ping

Serial Connectivity:

- Virtual Terminal Support (VT320, VT52, VT100, VT220)
- Hardware and software flow control
- Real COM port support**
- Raw TCP Mode support with file-based sessions

Alarms and Alerts:

- Client applications; Buzzer; SNMP Traps

OS Support:

- Windows, Mac, Sun, Linux, Unix, AIX, DOS 6.2+

Code Set Support:

- ISO646 - US (US ASCII); ISO8859 - 15 (Latin -9)

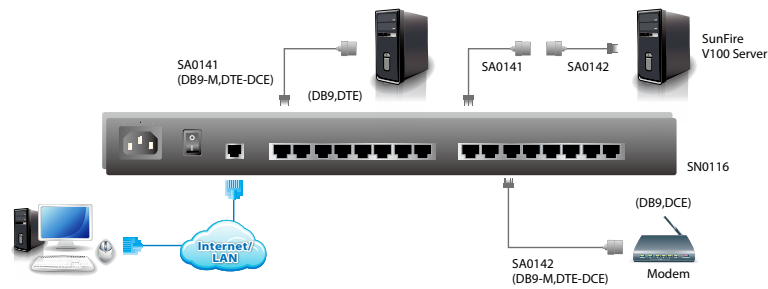
General:

- Hot-pluggable – add and remove servers without rebooting
- Rack mountable in 1U system rack

* Available with DC power at customer's request. (SN0108D/SN0116D)

** With supplied Virtual COM port driver.

Setup



Optional Equipment/Software

• RJ-45 to Serial Adapters

Serial Over the NET™ devices feature RJ-45 connectors and Cat 5e cable to link to serial IT devices via RJ-45-to-serial adapters. The various interface adapters ALTUSEN offers are shown in the table below:

Model No.	Connector	Interface
SA0141	RJ45-F to DB9-F (Black Connector)	DTE to DTE
SA0142	RJ45-F to DB9-M (Black Connector)	DTE to DCE
SA0143	RJ45-F to DB25-F (Black Connector)	DTE to DTE
SA0144	RJ45-F to DB25-M (Black Connector)	DTE to DCE
SA0145	RJ45-F to DB9-M (Blue Connector)	DTE to DTE
SA0146	RJ45-F to DB9-F (Blue Connector)	DTE to DCE
SA0147	RJ45-F to DB25-M (Blue Connector)	DTE to DTE
SA0148	RJ45-F to DB25-F (Blue Connector)	DTE to DCE

• **PN0108 Power Over the NET™** (Page 29)

• **Control Center Over the NET™** (Page 17)

Accessories



1. Power Cord x 1
2. Rack Mount Kit x 1
3. Foot Pad Set (4 pcs.) x 1
4. Software CD x 1

Serial Over the NET™ Specifications

Function		SN3101	SN0108	SN0116	
Connectors	Serial	1 x DB-9 Male (F)	8 x Serial Device Jacks (F)	16 x Serial Device Jacks (F)	
	Network	1 x RJ-45 (F)			
	Power	PWR1	1 x 2-pin Terminal Block	1 x 3-prong AC Socket*	
PWR2		1 x DC Jack	N/A		
Power Input	PWR1	12—48V DC (2-pin Terminal Block)	N/A		
	PWR2	9—30V DC (Power Adapter Jack)	N/A		
	Power Adapter	100—240V AC; 50–60 Hz	N/A		
	Power Line Protection	4KV burst (EFT), EN61000-4-42KV surge, EN61000-4-4	N/A		
Power Consumption		9V, 2.7W	120V; 8W / 230V; 8W		
Interfaces	Serial	Standards	RS-232/422/485; Software selectable	RS-232	RS-232
		Baud Rate	460Kbps	115.2 kbps	115.2 kbps
		RS-232 Signals	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND		
		RS-422 Signals	Tx+, Tx-, Rx+, Rx-, RTS+, RTS-, CTS+, CTS-, GND	N/A	N/A
		RS-485 Signals	Data+, Data-, GND	N/A	N/A
		Serial Protection	15 KV ESD Protection for the serial port	N/A	N/A
		Parity	None, Even, Odd, Mark, Space		
		Stop Bits	5, 6, 7, 8		
	Flow Control	None, XON/XOFF, RTS/CTS			
	Network	Standards	10/100BaseTX; Autosensing	10/100BaseTX; Autosensing	
		Protection	1.5 KV Magnetic Isolation	N/A	N/A
		Protocols	ARP, DHCP, DNS, HTTP, HTTPS, ICMP, IP, TCP, UDP, NTP, PPP, RADIUS, Telnet, SNMP, SNMP Trap, SMTP, SSH	ARP, DHCP, DNS, HTTP, HTTPS, ICMP, IP, TCP, UDP, NTP, PPP, RADIUS, Telnet, SNMP, SNMP Trap, SSH	
	Regulatory Approval		FCC Class A, CE Class A, RoHS	FCC Class A, CE Class A, RoHS	
Environment	Operating Temp.	0–60°C	0–40°C		
	Storage Temp.	-20–85°C	-20–60°C		
	Humidity	0–95% RH, Non-Condensing	0–80% RH, Non-Condensing		
Physical Properties	Housing	Metal	Metal		
	Weight	0.22 kg	3.30 kg	3.40 kg	
	Dimensions (L x W x H)	10.69 x 7.90 x 2.44 cm	43.72 x 21.40 x 4.40 cm		

Product specifications and appearance are subject to change without notice.

* Available with DC power at customer's request. (SN0108D/SN0116D)

Guardian Over the NET™



GN0116
EA2110 • EA2210 • EA2310

The GN0116 Guardian Over the NET™ is designed to offer remote environment monitoring and management of your server room or critical systems. With its remote control and logical configuration features, powerful management capability and scalability, it enables you to build a safe and reliable environment for your server room or data center. An IT administrator is able to real-time monitor the status of the equipments or environment, identify and troubleshoot system problems at an early stage, thereby minimizing repair costs and guaranteeing 24/7 reliable server room/data center monitoring.

With reference to monitoring the status of temperature, humidity, voltage or current for a server room, the GN0116 is equipped with Digital/Analog Input ports which allow you to connect various sensors to monitor and regulate the health of your equipment. In addition, the new and free GN0116 Guardian Monitor Center (GMC) software is designed to offer an easy-to-use and convenient User Interface for remote management of your GN0116 units – whether they are daisy-chained or not. Offering a single portal to manage multiple GN0116 units, all regulated data can be displayed in Table View or Chart View for easy monitoring.

In a critical environment, where security is a major concern, such as a server room or data center, keeping systems operating safely and stably in addition to avoiding environment irregularity is a must. The GN0116 Guardian Over the NET™ is an ideal solution for your server room environment monitoring.

Sensor Boxes

ALTUSEN provides various sensor boxes to work in tandem with the GN0116. EA2110/EA2210/EA2310 enables you to get status feedback on AC current, AC voltage and humidity. The sensor boxes can simply be connected to the Voltage Analog Input port of the GN0116 via Cat 5e cable, and then configured and monitored over the internet with a web browser.



EA2110

1 x AC Current Sensor & 1 x Humidity Sensor



EA2210

2 x AC Current Sensors



EA2310

1 x AC Current Sensor & 1 x AC Voltage Sensor



Remote Environment Monitoring

Via an Internet connection, IT administrators can conveniently observe the environment of their server rooms and data centers from virtually anywhere. Monitor temperature and humidity, in addition to the voltage and current status of critical equipment. Furthermore, users can set environment thresholds (When the humidity reaches a certain level for example) to allow equipment to be monitored for irregularity.

Remote Power Management

There is no need to move back and forth anymore to power on/off servers located in a server room. By simply clicking a button on the browser-based UI, administrators can reset devices, power devices/severs on/off, manually or automatically turn on/off lights, or enable/disable the backup power source. Real-time power control ensures the system/environment operates smoothly, avoids system interruption due to irregularities, and prolongs the lifetime of the systems or devices.

Automatic Control

Administrators can set a logical relationship between an Analog/Digital Input port and Digital Output ports/Power Outlets, such as to turn on the fan plugged into the power outlet of the GN0116 when the temperature (regulated by a sensor connected to an input port) reaches a certain level, or perhaps set off an alarm should smoke be detected. In a multiple GN0116 installation, the administrator can even configure relationships between the ports connected to different GN0116 units. Ultimately, maintenance costs are drastically reduced since constant administrator supervision is no longer required.

Early Warning Notification

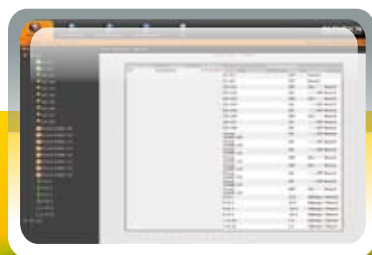
The GN0116 supports connection to various alarm devices and/or an SMS sender for early warning. With logical configuration, messages can be sent to administrators when irregularities occur. Also, an email warning can be sent via SMTP server, when a threshold has been exceeded. Necessary actions can be taken to avoid damage or minimize the loss which is caused by irregularities.

Easy Operation - Browser-Based UI

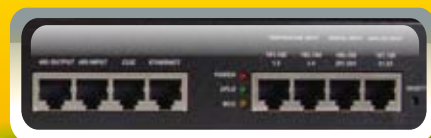
In addition to ssConsole for serial connection, the GN0116 supports an embedded browser-based UI, and the Guardian Monitor Center software which allows all the ports connecting the GN0116 units to be integrated into a Table view or Chart view for monitoring and control. Offering an intuitive and user-friendly Graphical User Interface, the Guardian Monitor Center allows management to record port data to a graph, or export that data to a file.

Flexible Expansion

Up to 255 additional units can be daisy-chained from the original GN0116 unit, providing the right level of hardware deployment to match your budget and expansion requirements. In addition, by utilizing the free Guardian Monitor Center software, all the GN0116 units connected in the same network can be consolidated into a single user interface for easy management.



• Easy Operation – Browser-Based UI



• 4 Digital/Analog I/O ports support up to 16 devices to regulate the health of your equipment

GN0116 Guardian Over the NET™

Features

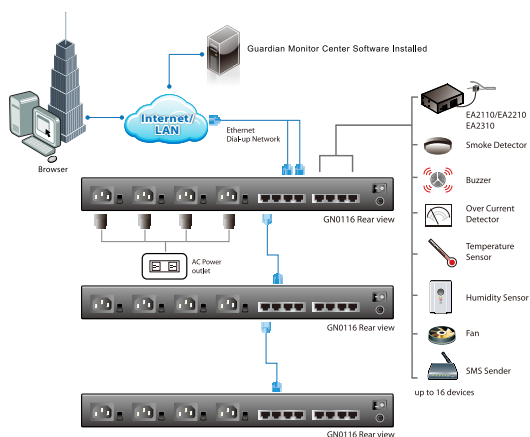
- Remote environmental monitoring and control from any computer connected to the Internet
- 6 Analog inputs and 2 Digital inputs support environmental sensors, including temperature, humidity, voltage, current, intrusion, smoke, leakage, flow, vibration, etc.
- 8 Digital outputs support alarm devices, including buzzer, light, SMS sender, etc.
- 8 programmable AC outlets support remote power control
- Daisy-chain up to 255 additional stations and manage all installed devices in master GN0116 UI
- Modem support for OOB management
- System configuration and data center environmental monitoring via embedded web UI, ssConsole* and Guardian Monitor Center software
- Remotely toggle Power outlets or Digital output ports on/off
- Monitor Refresh Frequency Setting - set screen refresh time intervals and devices status update frequency
- Logical Configuration
 - Configurable event trigger threshold or condition for input ports
 - Configurable relationship and operation logic between input ports and output ports
 - Automatic event triggering when threshold has been exceeded
 - Automatically enable output port to execute pre-defined operation without human intervention or 3rd party software involvement
- Embedded web UI supports 1 Administrator and 4 Users accounts
- Firmware upgradeable
- UL/TUV approved

Guardian Monitor Center Software

- An intuitive, user-friendly GUI for managing and monitoring all GN0116s and network connected devices via single web UI
- Display I/O port value & status in web UI and refresh according to pre-defined time interval
- Power on/off operation executed via a single mouse click in web UI
- Stored historical I/O port data can be displayed via time-based graph chart or exported via .CSV file
- I/O port threshold or condition, severity and automatic control logic configured via web UI
- Event notification sent via SMTP server
- Event log displayed by Category, Device and Severity, and offers search, filter and export (.CSV file) functions
- Back up and restore user system configuration settings
- Multilevel user management defines roles and controls access to GN0116 units – System Administrator, Device Administrator, User, Auditor
- Advanced password rules ensure users create strong passwords
- Stringent login policy features to govern multiple concurrent user logins that include:
 - Multiple User Login Disabled, Password Expiration Enabled, Login Failure Enabled Login String setting for enhanced security – entry login string along with IP address when user logs in
- IP filtering lets you control who has access to your GN0116 devices
- End session feature – administrators can terminate running sessions for security reasons

* ssConsole (Serial Server Console) is an application program provided with the GN0116 (for Windows environment only)

Setup



Optional Equipment/Software

- Guardian Monitor Center (Free Download)
- Sensor Boxes**
 - EA2110 1 x AC Current Sensor & 1 x Humidity Sensor
 - EA2210 2 x AC Current Sensors
 - EA2310 1 x AC Current Sensor & 1 x AC Voltage Sensor

** See Page 46 for more details

Accessories



1. AC Source Power Cord x 1
2. Power Outlet Power Cords x 8
3. RS-232 to RJ-45 Cable x 1
4. RJ-45 Cable x 1
5. Temperature Sensor Sets x 2
6. Rack Mount Kit x 1
7. Foot Pad Set (4 pcs.) x 1
8. Software CD x 2

Guardian Over the NET™ Specifications

Function		GN0116*
Connectors	AC Power Inlets	4 x IEC 60320/C14 (M)
	AC Power Outlets (Ports 109~116)	8 x NEMA 5-15R (F); or 8 x IEC 60320/C13 (F)
	Power	1 x DC Jack; 12V, 2.5A
	LAN	1 x RJ-45 (F)
	232C	1 x RJ-45 (F)
	485 Output	1 x RJ-45 (F)
	485 Input	1 x RJ-45 (F)
	Resistance Analog Input/Digital Output (Ports 1&2/101&102)	1 x RJ-45 (F)
	Resistance Analog Input/Digital Output (Ports 3&4/103&104)	1 x RJ-45 (F)
	Digital Input/Digital Output (Ports 201&202/105&106)	1 x RJ-45 (F)
	Voltage Analog Input/Digital Output (Ports 31&32/107&108)	1 x RJ-45 (F)
I/P Rating	Power	DC 12V, 2.5A
	AC Power Inlet	125V AC; 50/60Hz; 15A (Max.); or 220~250 V AC; 50/60Hz; 10A (Max.)
O/P Rating	Digital Output Ports (Ports 101~108)	12V DC; 50mA
	AC Power Outlets (Ports 109~116)	125V AC; 50/60Hz; 15A (Max.); or 220~250 V AC; 50/60Hz; 10A (Max.)
Power Consumption		DC 12V; 30W
Environment	Operating Temperature	0~50°C
	Storage Temperature	-20~60°C
	Humidity	0~90% RH, Non-condensing
Physical Properties	Housing	Metal
	Weight	2.30 kg
	Dimensions (L x W x H)	44.00 x 15.40 x 4.50 cm

Function		EA2110	EA2210	EA2310	
Connectors	To System	1 x RJ-45 Female			
	AC Current Sensor	1 x Terminal Block	2 x Terminal Block	N/A	
	Power Inlet	N/A		1 x IEC 60320/C14	
	Power Outlet	N/A		1 x NEMA 5-15R	1 x IEC 60320/C13
Humidity Sensor	Measurement Range	0-100 % Relative Humidity	N/A	N/A	
AC Current Sensor	Measurement Range	0-25A(RMS)		0-15A(RMS)	
AC Voltage Sensor	Measurement Range	N/A		120V~12A(Max.), 50-60Hz	240V~10A(Max.), 50-60Hz
Environment	Operating Temp.	0-50°C		0-40°C	
	Storage Temp.	-20~60°C			
	Humidity	0~80% RH, Non-condensing			
Physical Properties	Housing	Metal			
	Weight	0.31 kg		0.58 kg	
	Dimensions (L x W x H)	10.80 x 9.00 x 3.75 cm	10.80 x 8.10 x 3.75 cm	14.00 x 10.61 x 4.40 cm	

Product specifications and appearance are subject to change without notice.

* Not Available in Europe.