Secure Remote Power Control Unit
ENVIROMUX®

Securely control power on/off/reboot to up to eight devices over IP

Power Control & Management

- 120 VAC and 240 VAC Models
- Switchable NEMA 5-15R or IEC 320-C13 Outlets
- On / Off / Reboot / Default Switching
- Outlet Sequencing and Power Up Delays
- Web Interface and Command Line Interface (CLI)
- Manual / Scheduled / Associated Reboot Modes
- Current / Line Voltage / Line Frequency / Power Factor Monitoring
- Normally Open (NO) Relay Contacts, or Optional Normally Closed (NC)
- Overload Protection via Circuit Breaker

Environmental & IP Monitoring

- Supports 2 Environmental Sensors (Temperature / Humidity / Water Detection)
- Monitor (Ping) up to 8 IP Network Devices
- Alert Notifications via Email / Syslog / LEDs / Web Page / SNMP, and SMS messages (via external USB 3G modem—4- and 8-port models only).

Security

- Local DB or LDAP Authentication
- TLS/SSL Secure Communications
- SSH v2, SSLv3, TLC (4/8-port models only), AES, 3DES/DES, Blowfish, RSA, EDH-RSA, Arcfour Encryptions
- 16-Character Username/Password Authentication
- User Account Restricted Access Rights

IPDU-S8-P15 (Front and Back)

- **Power On/Off/Reboot**
- **Configure up to 3 additional IP aliases that allow remote control of the unit through different networks**
- **IPV 6 Compatible**
- **Shut down power when high temperature and other threats detected**
- **Linux Inside**

The ENVIROMUX® Secure Remote Power Control Unit allows you to remotely reboot and control power (on/off) to up to eight servers or other powered devices from any location via secure web interface, RS232, SSH, or Telnet.

Specifications

Power

- 90 to 250 VAC at 50 to 60 Hz.
- Input connector:
  - IPDU-S2: IEC 320-C14 inlet
  - IPDU-Sx-P15(-OT3): NEMA 5-15P line cord (US)
  - IPDU-Sx-P10(-OT3): IEC 320-C14 inlet (EURO)
- Output connectors:
  - IPDU-S2: IEC 320-C13 outlets
  - IPDU-Sx-P15(-OT3): NEMA 5-15R outlets (US)
  - IPDU-Sx-P10(-OT3): IEC 320-C13 outlets (EURO)

Current Rating			
NTI Part #	In	Out	Location
IPDU-S2	10	10	All
IPDU-Sx-P15	15	15	US/Canada
IPDU-Sx-P10	10	10	Euro/UK

RJ45 Sensor Ports

- Two RJ45 modular jacks for connecting NTI temperature/humidity and liquid detection sensors.

Network Interface

- One 10/100 Base-T Ethernet port with RJ45 Ethernet connector.

Console Port

- One female RJ45 port for terminal access.

USB Port (4/8-Port Models)

- Female USB Type A connector for connecting USB modem or for downloading log data to USB flash drive.

Cascade In/Out Ports (4/8-Port Models)

- Two RJ45 jacks.
- A maximum of 17 systems can be used in a cascaded configuration via RS485 to increase the number of outlets and sensor ports (1 master, 16 slaves).
  - Each slave unit needs its own unique RS485 address value that can range from 1-255.
  - Use CAT5/5e/6 patch cables with RJ45 connectors wired straight through
  - Up to 1,000 feet between the master unit and the slave unit.
  - The last slave must have a terminating plug (ENVIROMUX-TRMPLG, not included) in the empty socket.

Environmental

- IPDU-S2, IPDU-Sx-P15/P10:
  - Operating temperature: 32° to 122°F (0° to 50°C).
  - Storage temperature: -13° to 149°F (-25° to 65°C).
- IPDU-Sx-P15/P10-OT3:
  - Operating temperature: -40° to 158°F (-40° to 70°C).
  - Storage temperature: -40° to 185°F (-40° to 85°C).
- Operating/storage relative humidity: 0 to 90% non-condensing RH.

Protocols

- HTTPS, SSHv2, SSLv3, TLS (4/8-port models only), LDAPv3, AES 256-bit, 3DES, Blowfish, RSA, EDH-RSA, Arcfour, SNMPv2c; IP filtering, IPV6
- Operates and configures via HTTP/HTTPS web page, Telnet, SSH, or RS232 interface.
- Alerts are sent using email, syslog, and/or SNMP traps.
  - Alerts are posted in event log, which is accessible through Web user interface.

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Specifications (Continued)

| MTBF			
NTI Part #	MTBF (hrs)	NTI Part #	MTBF (hrs)
IPDU-S2	183,724	IPDU-S8-P15	83,790
IPDU-S4-P15	113,296	IPDU-S8-P10	57,051
IPDU-S4-P10	86,017		

Cables

- Use 1-ft power extension cords (PWR-CRD16-515P515R-1) to attach bulky wall wart power supplies to the Secure Remote Power Control Unit without blocking any of the outlets.
  - Wire gauge: 16 AWG
  - Amp rating: 13A
  - Voltage rating: 125V

Regulatory Approvals

- CE, RoHS

Configuration and Cable Illustration
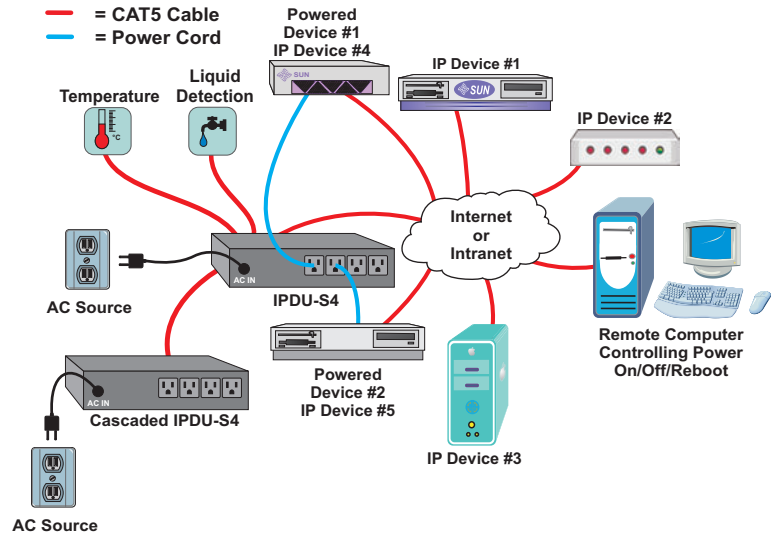
Ideal for data centers, co-lo sites, web hosting facilities, telecom switching sites, POP sites, server closets, or any unmanned area that needs to be monitored

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Control Methods

Web Interface

- Configure, control and monitor via HTTP/HTTPS webpage.
- Configure outlet operation settings, sensor thresholds and timing, alarm methods, alert formats, sensor/IP device outlet association, and system data log.
- Add up to 3 additional IP aliases that allow remote control of the unit through different networks.
  - No scripts required - simply add the IP address, network mask, and gateway configurations through the web interface.
  - The first network (default network) will be used for total control of the unit, i.e. inbound and outbound connections.
  - The three other networks will allow web/SSH/telnet access only, i.e. inbound access only.
- View outlet status, sensor values, IP device values, and alert status on one summary page.
  - View, Edit, Turn On/Off, Cycle buttons for each power outlet.
  - View and Edit sensors and IP devices.
- View entries stored in the system logs.
  - Event log records system events such as alerts, user login/logout, failed email messages, etc.
  - Data log records samples of sensor readings. User specifies sampling time period.
  - The log can be downloaded as a tab-delimited plain text file.
- Configure IP information, SMTP settings, SNMP settings, IP filtering, and user administrative settings.
- Upload custom x509 certificates (4/8-port models only).

- Administrate up to 15 users plus a root administrator.
- Configure permissions, schedule and alert methods for each user.
- Up to 17 units can be used together to increase the number of sensors connected.
  - Cascade up to 16 IPDU-Sx units as slaves to one IPDU-Sx master unit via Ethernet connection.
    - Each master and slave unit needs its own unique IP address.
  - IPDU-Sx slave units can also be configured as RS485 local slave units using CAT5/5e/6 patch cables with RJ45 connectors wired straight through.
    - Each slave unit needs its own unique RS485 address value that can range from 1-255.
    - The last slave must have a terminating plug (not included) in the empty socket.
  - Uses a single Web interface for all systems/sensors connected.

RS232/Telnet/SSH

- Configure, control and monitor over the text-based menu system accessible via RS232, Telnet, and SSH.
- Access is controlled via username/password.
  - System stores encrypted login information.
- Two user levers: user and administrator.

Network Operation

- Integrates with various Open Source monitoring packages - Nagios and MRTG.
  - The unit can be polled via SNMP.

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Control Methods (Continued)

LED Indicators

- **2-Port Model:**
  - "POWER" (green) — indicates device is powered.
  - "OUTLET" (green / red) — outlet is on or off.
  - "SENSOR FAULT" (red) — lights up if a sensor goes out of range of a configurable threshold.
  - "IP FAULT" (red) — lights up if an IP device is unresponsive.

- **4/8-Port Models:**
  - "POWER" (green) — indicates device is powered.
  - "OUTLET ON" (green) — outlet is on.
  - "SENSOR FAULT" (red) — lights up if a sensor goes out of range of a configurable threshold.
  - "IP FAULT" (red) — lights up if an IP device is unresponsive.
  - "BREAKER TRIP" (red) — lights up if the circuit breaker is tripped.

Text-Based Menu Interface Screen Shot
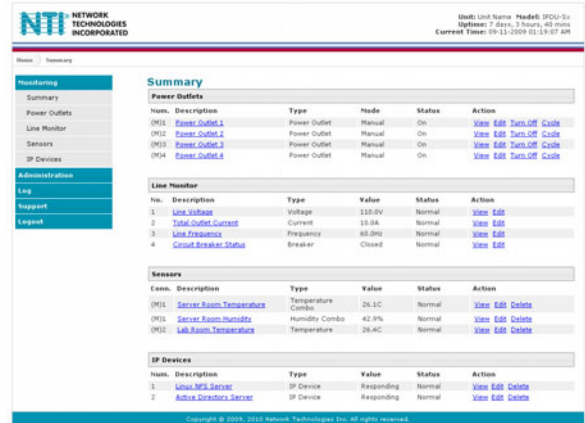
Web Interface Screen Shot

Ordering Specifications

This example explains the Secure Remote Power Control Unit part number by breaking it down into the available options. When ordering, choose the options that you require.

Intelligent Power Distribution Unit	Secure	# of Ports	Optional Normally Closed Contacts	Current Capacity	Optional Industrial Operating Temerature
IPDU-S		***x***	**NC**	**-P15**	**-OT3**
		x = 2,4,8	4/8-port only	P15 = 15A (US/Canada) P10 = 10A (Euro/UK) 4/8-port only	OT3 = -40° to 158°F (-40° to 70°C) 4/8-port only

Secure Remote Power Control Unit Models

NTI Part #	# of Outputs	Input/Output Current Capacity	Relay Contacts	Location	Desktop Size WxDxH	Rack Size WxDxH
IPDU-S2	2	10A	Normally Open	All	6.1x5.6x1.7 in (155x142x43 mm)	NA
IPDU-S4-P15	4	15A	Normally Open	US/Canada	16.2x10x1.75 in (411x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
PDU-S4-NC-P15	4	15A	Normally Closed	US/Canada	16.2x10x1.75 in (411x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
IPDU-S4-P10	4	10A	Normally Open	Euro/UK	16.2x10x1.75 in (411x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
IPDU-S4-NC-P10	4	10A	Normally Closed	Euro/UK	16.2x10x1.75 in (411x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
IPDU-S8-P15	8	15A	Normally Open	US/Canada	17.5x10x1.75 in (445x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
IPDU-S8-NC-P15	8	15A	Normally Closed	US/Canada	17.5x10x1.75 in (445x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
IPDU-S8-P10	8	10A	Normally Open	Euro/UK	17.5x10x1.75 in (445x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)
IPDU-S8-NC-P10	8	10A	Normally Closed	Euro/UK	17.5x10x1.75 in (445x254x44 mm) (without supplied rackmount kit)	19x10x1.75 in (483x254x44 mm) (with supplied rackmount kit)