



PowerSense™ Catalog

**POWER OVER ETHERNET
AND NETWORK
CONNECTIVITY PRODUCTS**



Introduction

Consistent with Belden CDT Networking's commitment to quality and innovation, we offer PowerSense™ high-performance power distribution equipment for the efficient and reliable delivery of Power over Ethernet

Delivering Power over Ethernet (PoE) to the Enterprise

Power over Ethernet is flourishing in the enterprise because it offers greater flexibility in the installation of network devices (vs. the use of standard power sources) and it can, in many instances, decrease network installation costs. It also adds an unprecedented level of safety and reliability for powered LAN devices.

What is Power over Ethernet?

Power over Ethernet refers to the ability to power network devices directly over the existing data connection, eliminating the need for an external power supply for each device. With Power over Ethernet, devices such as IP telephones, wireless LAN access points, security cameras and other enterprise terminals can safely receive power over legacy Category 5 or better LAN cabling without modifying the existing infrastructure. Power over Ethernet is also a necessity for the Voice-over-IP (VoIP) solution as this service requires an alternative power source for IP phones.

Power over Ethernet consists of two essential components: the power-sourcing equipment (PSE) and the powered devices.

PowerSense — the Cutting-Edge, Modular Approach to Power over Ethernet

Midspan hubs are power-sourcing equipment. These hubs are patch panel-like devices that are installed between the existing Ethernet switch and the devices to be powered (*see figure*). They add power to the spare pairs of a data cable without disturbing the transmission of the data.

Belden CDT Networking PowerSense Midspan Hubs are particularly outstanding in the industry, providing these unprecedented features:

- > Full compliance with IEEE 802.3af Standards (PoE Protocol)
- > Module options for 48V, 24V, 12V and Cisco CDP™ protocols
- > FCC, CE and CB tested and approved for worldwide use
- > Modular chassis: 24, 20, 10 and 1 port designs
- > Assured safety: each module auto-detects the device's power requirements; modules allow for transparent 10/100Mb and management operations
- > Each module port is voltage isolated with user replaceable fuses and is "hot swappable."



Key benefits of PowerSense include the following:

- > Work in conjunction with existing Ethernet infrastructure and structured cabling, including the Ethernet switches or shared media devices
- > Are the optimal solution for applications such as WLAN, VoIP, Web-based security cameras and access control devices
- > Provide a scalable solution: since PowerSense hubs are modular, new modules can be added as required
- > Allows a fast recovery from an internal power fault condition
- > Reduce the total cost of ownership.

Everything You Need for Power over Ethernet

Every product featured in this catalog — power hubs, connectors, media converters, transceivers, and the Realtime™ Network tester — is the result of Belden CDT Networking's commitment to provide the end-user with top quality, superior performance networking products. This high quality level is possible because every PowerSense product is manufactured using the industry's most advanced equipment, systems, controls and processes.

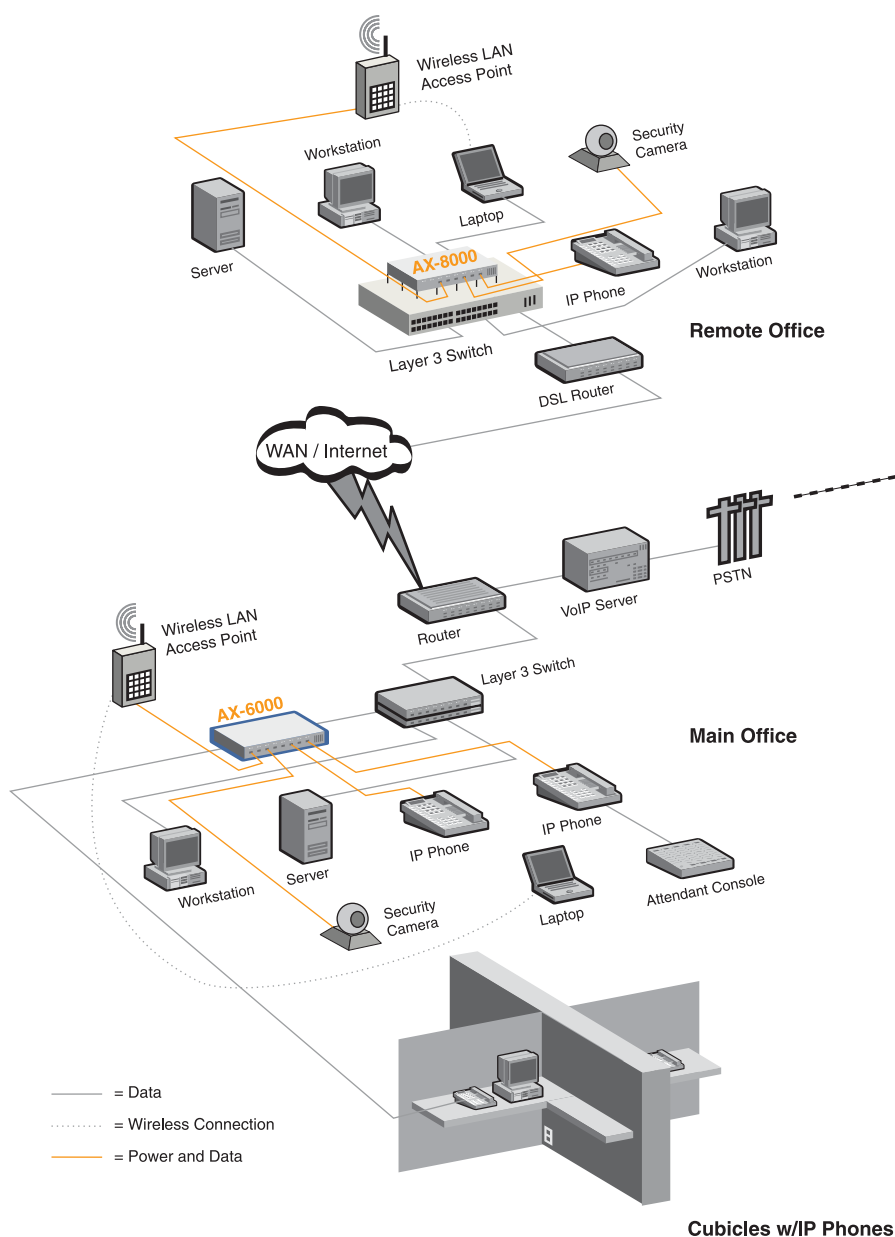
Fully Qualified and Warranted

All PowerSense products conform to the following quality and environmental standards:

- > Safety: UL 1950, EN 60950, CSA 22, 2N, 950
- > Functional: PLS and AUI Specification ISO 8802.3 Sec 7, 14 and IEEE 802.3, 802.3af and Ethernet ver. 2.0
- > RFI/Emissions: FCC 20780 (Class A), VDE 0871B, CISPR 22 Class B certification (Business or Residence).

All products have a full 2-year warranty of product quality/durability.

Example of Network Configuration with VoIP phones, Wireless Access Points and IP Security Cameras



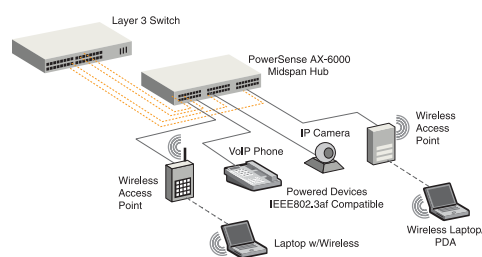
PowerSense Midspan Hubs



AX-6000 PowerSense Series
24-Port Midspan Hub



AX-6500 Individual Chassis Module



PowerSense Midspan Hub Example
(Using Existing Ethernet Switch)

AX-6000 PowerSense Series 24-Port

The **AX-6000 Modular Multiport In-Line Power Hub** safely and efficiently provides power over LAN Data Cabling for VoIP phones, Wireless Networking access points, IP security cameras and other remote network devices.

The PowerSense In-Line Power Hub provides power to LAN devices without the use of an external power supply for each device. Power is supplied over the existing LAN data cabling system. This greatly increases the flexibility of installation and possible locations for such devices, no longer requiring them to be located near a power outlet. It also adds an unprecedented level of safety and reliability for powered LAN devices.

The PowerSense Hub is a 24-port rack-mount chassis powering up to 24 devices. Each 8-port module is hot-swappable and modules may be added to the chassis without powering down the unit. If an individual power port is damaged due to a lightning strike or power surge, the module bank may be hot swapped out without powering down the chassis or disconnecting the other devices attached to the other power ports in the chassis.

When used with an uninterruptible power supply, the PowerSense Hub provides continuous power for up to 24 connected devices. PowerSense is tough and durable, made with an all metal chassis.

PowerSense operates on Category 5, 5e or 6 grade LAN Data Cable at standard Ethernet distances. The AX-6000 series supports powered devices requiring the IEEE 802.3af Power over Ethernet Protocol.

Features and Benefits

- > Hot swappable 8-port modules in the 19" rack-mount ready chassis
- > Each module is current limited for short circuit protection with power isolation of 1500 VRMS
- > Each module auto-detects the power requirement for safety and offers transparent 10/100Mb and management operations
- > Each module has two diagnostic LED's
- > Support for all compliant IEEE 802.3af powered devices
- > Each module supplies full 15.4 watts for up to 8 devices as per the IEEE 802.3af standards

DESCRIPTION	ORDERING NUMBER
3-slot chassis with 3 modules (24 power and data ports), IEEE 802.3af, 19" rack-mount ready	AX-6524
3-slot chassis with 2 modules and 1 blank cover plate (16 power and data ports), IEEE 802.3af, 19" rack-mount ready	AX-6516
3-slot chassis with 1 module and 2 blank cover plates (8 power and data ports), IEEE 802.3af, 19" rack-mount ready	AX-6508
3-slot chassis only, empty, holds up to three 8-port modules, 19" rack-mount ready	AX-6224
Individual chassis module, 8 power and data ports, IEEE 802.3af	AX-6500
Single slot cover plate	AX-6201

PowerSense Midspan Hubs (continued)

AX-8000 PowerSense Series

The **AX-8000 Modular Multiport In-Line Power Hub** includes 20-slot and 10-slot modular chassis units which may be populated with any combination of PowerSense modules. The individual modules are all hot swappable and fully voltage isolated from each other. These units help reduce costs and downtime by allowing individual modules to be removed or inserted while the chassis and all other modules remain operational.

Modules can be mixed and matched to support CDP™ devices, IEEE 48-volt, 24-volt or 12-volt applications within the same chassis. Power IP phones, wireless access points, security cameras and other low voltage devices safely and efficiently. A single port model is also available in any of the module styles for single device powering applications.



AX-8000 PowerSense Series
20-Port Midspan Hub

Features and Benefits

- > Individual power modules, hot swappable in the 19" rack-mount ready chassis, use 1 per powered device
- > Each module is current limited for short circuit protection with power isolation of 1KV between ports for safety
- > Each module has user replaceable fuses for recovery from power surge or lightning damage; quickly repair any module
- > Each module auto-detects the power requirement and offers transparent 10/100Mb and management operations
- > Each module has four diagnostic LED's
- > Mix and match modules for compatibility with IEEE 802.3af or legacy Cisco CDP powered devices, 24-volt protocol or 12-volt protocol
- > Standard or high wattage modules available

DESCRIPTION	ORDERING NUMBER
20-slot PowerSense chassis with 20 power and data modules, 12v protocol	AX-8320
20-slot PowerSense chassis with 20 power and data modules, 24v protocol	AX-8420
20-slot PowerSense chassis with 20 power and data modules, IEEE 802.3af compatible	AX-8520
20-slot PowerSense chassis with 20 power and data modules, CDP protocol	AX-8620
10-slot PowerSense chassis with 10 power and data modules, 12v protocol	AX-8310
10-slot PowerSense chassis with 10 power and data modules, 24v protocol	AX-8410
10-slot PowerSense chassis with 10 power and data modules, IEEE 802.3af compatible	AX-8510
10-slot PowerSense chassis with 10 power and data modules, CDP protocol	AX-8610
20-slot PowerSense chassis only, empty, 19" rack-mount ready	AX-8220
10-slot PowerSense chassis only, empty	AX-8210
19" rack-mount kit for 10-slot PowerSense chassis	AX-8210RM
Wall mount kit for 10-slot PowerSense chassis	AX-8210WM
Chassis modules, standard power up to 15.4 watts, 12v protocol power and data module	AX-8300
Chassis modules, standard power up to 15.4 watts, 24v protocol power and data module	AX-8400
Chassis modules, standard power up to 15.4 watts, IEEE 802.3af compatible power and data module	AX-8500
Chassis modules, standard power up to 15.4 watts, CDP protocol power and data module	AX-8600
Chassis modules, high wattage power up to 20 watts, double wide module, 12v protocol	AX-8300HW
Chassis modules, high wattage power up to 20 watts, double wide module, IEEE 802.3af compatible	AX-8500HW
Chassis modules, high wattage power up to 20 watts, double wide module, CDP protocol	AX-8600HW
Single port model, standard power up to 15.4 watts, 12v protocol	AX-8351
Single port model, standard power up to 15.4 watts, 24v protocol	AX-8451
Single port model, standard power up to 15.4 watts, IEEE 802.3af compatible	AX-8551
Single port model, standard power up to 15.4 watts, CDP protocol	AX-8651
Single port model, high-wattage power up to 20 watts, 12v protocol	AX-8351HW
Single port model, high wattage power up to 20 watts, IEEE 802.3af compatible	AX-8551HW
Single port model, high wattage power up to 20 watts, CDP protocol	AX-8651HW
Single slot chassis cover plate	AX-8201
Two slot chassis cover plate	AX-8202
Five slot chassis cover plate	AX-8205
Six slot chassis cover plate	AX-8206
Data-power splitters for use with IEEE power modules, 48v input, 12v with RJ-45/power pin, 2.1/2.5 mm	AX-8712
Data-power splitters for use with IEEE power modules, 48v input, 5v with RJ-45/power pin, 2.1/2.5 mm	AX-8705

Several custom Y cables available, please contact Customer Service and specify the device to be powered.

Power over Ethernet Connectors



AX-8858 Power over Ethernet Connector

Power over Ethernet Connectors

Power over Ethernet Connectors allow Cisco 7900 Series VoIP Phones or AP350 or AP1100 to be powered with IEEE 802.3af style 48-volt power over Ethernet.

Power may come from an Ethernet Switch or Mid-Span power hub. Connector installs near powered device. Two LEDs let user know whether power is originating from an Ethernet Switch or Mid-Span power hub.

DESCRIPTION	ORDERING NUMBER
Power over Ethernet connector for one device requiring CDP protocol from any IEEE 802.3af Standard Powered Ethernet Switch	AX-8858-01
Power over Ethernet connector for one device requiring CDP protocol from any IEEE 802.3af Standard HP Pro Curve Ethernet Switch	AX-8858-02

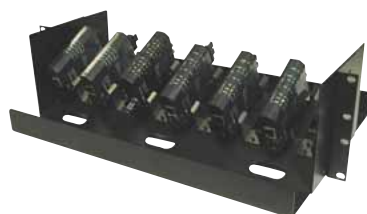
Media Converters



Media Converters

Media Converters for Ethernet and Fast Ethernet

Media Converters enable the connection of dissimilar network cabling types, while maintaining the same network speed. A legacy Thinnet segment can be connected to a 10Base-T Hub or switch port with a AX-200 Converter or, link two different 10Base-T networks together over a multimode fiber optic link with a pair of AX-270s. Connect a legacy Thinnet segment over fiber with the AX-280 converter. The AX-5270 can be used for interbuilding links or attached to a fiber backbone.



AX-1912 Media Converter Rack

Features and Benefits

- > Plug and Play — no user settings to configure
- > Connect remote sites up to 2km on multimode fiber
- > LED status indicators show network condition at a glance
- > Choice of SC- or ST-Compatible fiber connectors
- > All metal cases and shielded connectors provide years of trouble free operation and durability
- > CISPR 22 Class B certification — worldwide approval

DESCRIPTION	ORDERING NUMBER
10Base-T/10Base2 Converter, RJ-45 to BNC	AX-200
10Base-T/10Base-FL Converter, RJ-45 to ST-Compatible fiber connectors	AX-270
10Base2/10Base-FL Converter, BNC to ST-Compatible fiber connectors	AX-280
100Base-TX/100Base-FX Converter, SC-Compatible fiber connectors	AX-5270SC
100Base-TX/100Base-FX Converter, ST-Compatible fiber connectors	AX-5270ST
Media Converter Rack, holds up to 12 converters and multi lead power supplies, 19" rack-mount ready	AX-1912-MCR
Media Converter Rack Power Supply, 4-lead 110v/12v, powers up to 4 converters	AX-270P4U
Media Converter Rack Power Supply, 8-lead 110v/12v, powers up to 8 converters	AX-270P8U

Transceivers and Hubs

Transceivers and Ethernet Hubs

The **AX-50, 70 and 80 Transceivers** enable the connection of a legacy AUI port to 10Base-T, Thinnet, or Fiber Optic media. The transceiver is powered from the host and requires no external power supply.

The **AX-509 Ethernet Hub** has an AUI port which accepts UTP, Fiber Optic or BNC transceivers. Specified for use by many U.S. Government Agencies. Includes a 110v/12v power supply.

Features and Benefits

- > Compact design — allows installation to AUI ports in restricted spaces
- > Seven diagnostic indicators — assess network status at a glance / visible from top or side of unit
- > All metal cases / shielded RJ-45 ports — provides years of trouble free service
- > CISPR 22 Class B certification



AX-50, 70 and 80 Transceivers and AX-509 Ethernet Hub

DESCRIPTION	ORDERING NUMBER
UTP Transceiver, 10Base-T, AUI to RJ-45, side port	AX-50
UTP Transceiver, 10Base-T, AUI to RJ-45, rear port	AX-50R
Fiber Transceiver 10Base-FL, AUI to ST-Compatible	AX-70
Thinnet Transceiver 10Base2, AUI to BNC	AX-80
Ethernet Hub with 8 RJ-45 10Base-T ports and 1 AUI port	AX-509

Network Tester

Realtime 10/100 Base-TX Ethernet Network Test Unit

The **AX-110BT Realtime 10/100 Base-TX Ethernet Network Test Unit** is a cost effective way to quickly determine a network's operating condition. Plug the unit's patch cord into the tester then into any open RJ-45 jack in an office, cubicle or conference room. Immediately see if the jack is a live network node capable of either 100 Mb/s or 10 Mb/s. Next check patch cord continuity and polarity. Connect the downlink to a PC to check NIC card link, speed and full or half duplex capabilities. Connect the uplink to a hub or switch port to verify link and speed.



AX-110BT Realtime 10/100 Base-TX Ethernet Network Test Unit

Features and Benefits

- > Intel/Level One Ethernet chip — generates real network traffic
- > Highest speed first auto negotiation — checks if link, NIC or Hub; switch port will run at 100 Mb/s first, then backs down to 10 Mb/s if necessary
- > Easy to understand keyboard graphics and LEDs; quickly perform any test with certainty of the conditions found
- > Compact size with belt clip, comfortable to carry
- > Quality construction for long lasting performance
- > Includes replaceable 9V battery and 5ft. patch cord
- > Auto off switch for long battery life

DESCRIPTION	ORDERING NUMBER
Realtime 10/100 Base-TX Ethernet Network Test Unit	AX-110BT



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