



# PowerSense® PoE Products

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## Introduction

### Release the Power

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

### 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 (PD).

### 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 PowerSense midspan hubs provide these unprecedented features:

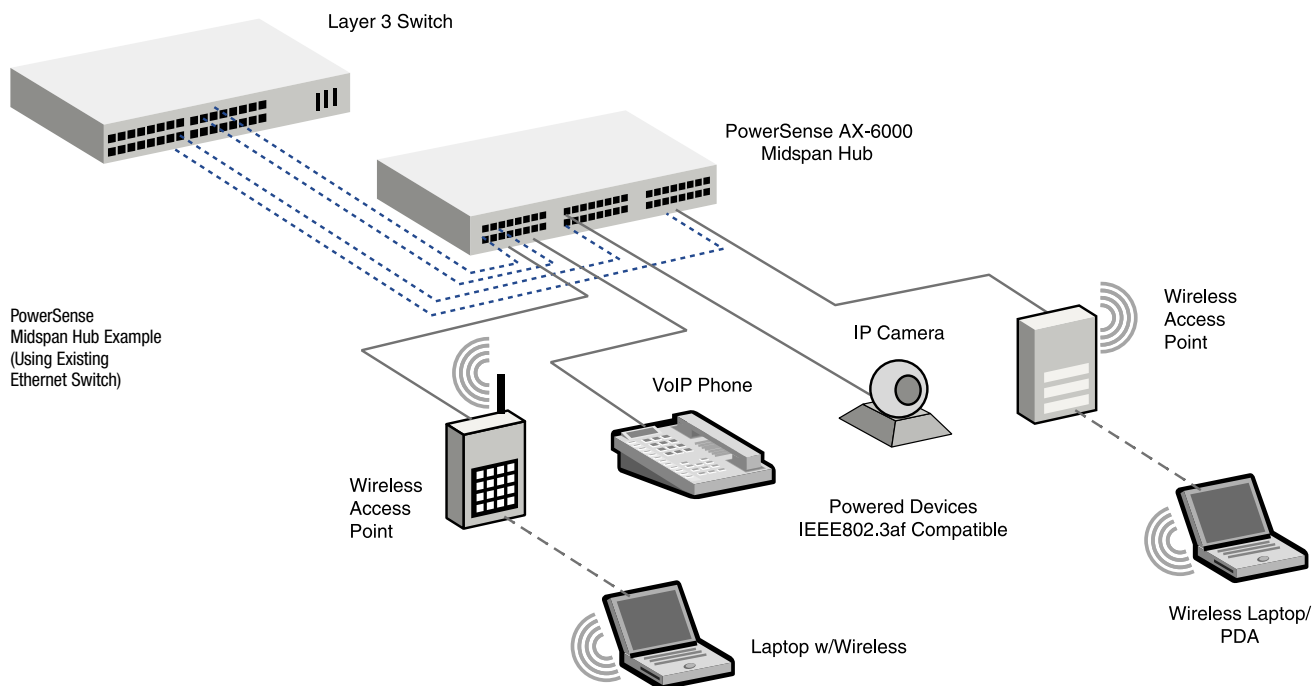
- Full compliance with IEEE 802.3af standards (PoE Protocol)
- Module options for 48V, 24V, 12V and Cisco CDP™ protocols
- FCC, CE and CB tested and approved for worldwide use
- Modular chassis: 24-, 20-, 10-, 8- and 1-port designs
- Assured safety: each module auto-detects the device's power requirements before forwarding power; modules allow for transparent 10/100 Mb and management operations
- Each module port is voltage isolated with user replaceable fuses and is "hot swappable."

Key benefits of PowerSense include:

- 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 scaleable solution: since PowerSense hubs are modular, new modules can be added as required.
- Allows a fast recovery from an internal power fault condition; modules may be hot swapped.
- Reduce the total cost of ownership.

### Advanced Replacement Warranty

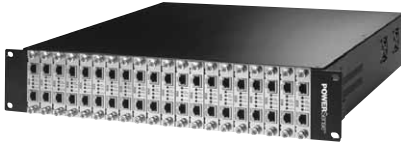
All PowerSense products have a full 2-year warranty for product quality and durability. We also offer an advanced replacement warranty which means that if a PowerSense product needs to be replaced, a new unit will be immediately shipped.



## Power Over Ethernet Midspan Hubs

### PowerSense AX-8000 Series Modular Multiport

PowerSense 20-port Midspan Hub  
IEEE 802.3af compatible



AX-8510 PowerSense 10-port Midspan Hub  
IEEE 802.3af compatible



PowerSense Modules



#### 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 (see page 14.4) in any of the module styles for single device powering applications.

Description	Belden Part Number
<b>AX-8000 PowerSense Series — Multiport</b>	
<b>Chassis Only (without Modules)</b>	
20-slot PowerSense Chassis – 19" (0.48 mm) Rack Mount Ready	<b>AX-8220</b>
10-slot PowerSense Chassis – with Rubber Feet	<b>AX-8210</b>
10-slot PowerSense Chassis – 19" (0.48 mm) Rack Mount Kit	<b>AX-8210-RM</b>
10-slot PowerSense Chassis – Wall Mount Kit	<b>AX-8210-WM</b>
<b>Chassis Complete with 20 Standard Power Chassis Modules</b>	
20 Power and Data Modules – 12 Volt Protocol	<b>AX-8320</b>
20 Power and Data Modules – 24 Volt Protocol	<b>AX-8420</b>
20 Power and Data Modules – IEEE 802.3af compatible	<b>AX-8520</b>
20 Power and Data Modules – Cisco CDP Protocol	<b>AX-8620</b>
<b>Chassis Complete with 10 Standard Power Chassis Modules</b>	
10 Power and Data Modules – 12 Volt Protocol	<b>AX-8310</b>
10 Power and Data Modules – 24 Volt Protocol	<b>AX-8410</b>
10 Power and Data Modules – IEEE 802.3af compatible	<b>AX-8510</b>
10 Power and Data Modules – Cisco CDP Protocol	<b>AX-8610</b>
<b>Standard Power Chassis Modules (for devices up to 15.4 watts, uses 1 Slot)</b>	
Power and Data Module – 12 Volt Protocol	<b>AX-8300</b>
Power and Data Module – 24 Volt Protocol	<b>AX-8400</b>
Power and Data Module – IEEE 802.3af compatible	<b>AX-8500</b>
Power and Data Module – Cisco CDP Protocol	<b>AX-8600</b>
<b>High Wattage Chassis Modules (for devices up to 20 watts, uses 2 Slots)</b>	
Double Wide Power and Data Module – 12 Volt Protocol	<b>AX-8300HW</b>
Double Wide Power and Data Module – IEEE 802.3af compatible	<b>AX-8500HW</b>
Double Wide Power and Data Module – Cisco CDP Protocol	<b>AX-8600HW</b>
<b>Custom Power Chassis Modules (for specific Products)</b>	
Power and Data Module, Supports AXIS 205 Camera, 12V	<b>AX-8300AXIS205</b>
Power and Data Module, Supports AXIS 2120 Camera, 12V	<b>AX-8300AXIS2120</b>
Power and Data Module, Supports IndigoVision Camera, 12V	<b>AX-8300IVC100</b>
Power and Data Module, Supports SONY SNCRZ30N Camera, 12V	<b>AX-8300SNCRZ30N</b>
Power and Data Module, Supports SAVI Products, 12V	<b>AX-8300SR600101</b>
Power and Data Module, Supports IQinvision IQEYE3 Camera, 24V	<b>AX-8400IQEYE3</b>
Power and Data Module, Supports Trango Broadband AP, 24V	<b>AX-8400M58305AP</b>
Power and Data Module, Supports Mobotix MX-D-03 Camera, 24V	<b>AX-8400MXD03</b>
Power and Data Module, Supports Smarteye Camera, 24V	<b>AX-8400SP400101</b>
<b>Chassis Cover Plates (for unused Slots)</b>	
Single-slot Cover Plate	<b>AX-8201</b>
Two-slot Cover Plate	<b>AX-8202</b>
Five-slot Cover Plate	<b>AX-8205</b>
Six-slot Cover Plate	<b>AX-8206</b>

Visit [www.beldenibdn.com](http://www.beldenibdn.com) for a product compatibility list. These products are in the process of being assessed for RoHS compliance. Please check our website for the most current RoHS status.

# Power Over Ethernet Midspan Hubs

## PowerSense AX-8000 Series

### Single-Port

PowerSense 1-Port Midspan Hub  
IEEE 802.3af compatible



#### AX-8000 PowerSense Series

For single device powering applications, this single-port version of the popular AX-8000 PowerSense series of modular in-line power hubs is available in any of the same module styles as the multiport version. Modules can support CDP™ devices, IEEE 48-Volt, 24-Volt or 12-Volt applications to power IP phones, wireless access points, security cameras and other low-voltage devices safely and efficiently.

Description	Belden Part Number
<b>AX-8000 PowerSense Series — Single Port Hubs</b>	
<b>Standard Power Modules</b>	
Single Power and Data Port – 12V Power and Data compatible	<b>AX-8351</b>
Single Power and Data Port – 24V Power and Data compatible	<b>AX-8451</b>
Single Power and Data Port – IEEE 802.3af compatible	<b>AX-8551</b>
Single Power and Data Port – Cisco CDP Protocol	<b>AX-8651</b>
<b>High Wattage</b> (for devices up to 20 watts, with power supply)	
Double Wide Power and Data Module – 12 Volt Protocol	<b>AX-8351HW</b>
Double Wide Power and Data Module – IEEE 802.3af compatible	<b>AX-8551HW</b>
Double Wide Power and Data Module – Cisco CDP Protocol	<b>AX-8651HW</b>
Custom power Modules, with power supply	<b>Various Part Numbers</b>

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## Power Over Ethernet Midspan Hubs

### PowerSense AX-6000 Series 24-Port, 8-Port Module

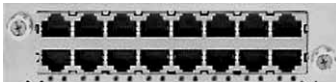
PowerSense 24-Port Midspan Hub  
IEEE 802.3af compatible



PowerSense 8-Port Midspan Hub  
IEEE 802.3af compatible



Individual Chassis Module



#### 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 PoE protocol.

Description	Belden Part Number
<b>AX-6000 PowerSense Series 24-port</b>	
<b>Chassis Only</b> (without Modules)	
PowerSense Chassis, 3 Slots, each slot holds one Module	<b>AX-6224</b>
PowerSense Chassis, 1 Slot, holds one Module	<b>AX-6208</b>
<b>1-slot Chassis</b> (with one standard 6500 Module installed)	
8 Power and Data Ports – IEEE 802.3af compatible, 10/100 Mb/s	<b>AX-6108</b>
Optional 19" (0.48 m) Rack Mount Kit for one slot Chassis	<b>AX-6108-RM</b>
<b>3-slot Chassis</b> (with up to three standard 6500 Modules installed)	
24 Power and Data Ports – IEEE 802.3af compatible, 10/100 Mb/s	<b>AX-6524</b>
16 Power and Data Ports and one Cover Plate – IEEE 802.3af compatible	<b>AX-6516</b>
8 Power and Data Ports and two Cover Plates – IEEE 802.3af compatible	<b>AX-6508</b>
<b>3-slot Chassis GIG</b> (with up to three 6500GIG Modules installed)	
24 Power and Data Ports – IEEE 802.3af compatible, 10/100/1000 Mb/s	<b>AX-6524GIG</b>
16 Power and Data Ports and one Cover Plate – IEEE 802.3af compatible	<b>AX-6516GIG</b>
8 Power and Data Ports and two Cover Plates – IEEE 802.3af compatible	<b>AX-6508GIG</b>
<b>3-slot Chassis HW4</b> (with up to three 6500HW4 Modules installed)	
12 Power and Data Ports – RJ-45, IEEE, High Power (36 watts per port) 10/100 Mb/s	<b>AX-6512HW4</b>
8 Power and Data Ports – RJ-45, IEEE, High Power (36 watts per port) 10/100 Mb/s	<b>AX-6508HW4</b>
4 Power and Data Ports – RJ-45, IEEE, High Power (36 watts per port) 10/100 Mb/s	<b>AX-6504HW4</b>
<b>Spare Chassis Modules</b> (individual; fits one or three Slot Chassis)	
8 Power and Data Ports – RJ-45, IEEE 802.3af compatible, 10/100 Mb/s	<b>AX-6500</b>
8 Power and Data Ports – RJ-45, IEEE 802.3af compatible, 10/100/1000 Mb/s	<b>AX-6500GIG</b>
4 Power and Data Ports – RJ-45, IEEE, High Power (37 watts per port) 10/100 Mb/s	<b>AX-6500HW4</b>
<b>Chassis Cover Plates</b> (for unused Slots)	
Single Module Cover Plate (covers one Module slot)	<b>AX-6201</b>

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## Power Over Ethernet Accessories

### PoE Connectors, Data & Power Splitting “Y” Cables

Power over Ethernet Connector



Data Splitting Y Cables



#### 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 a powered ethernet switch or midspan power hub. Connector installs near powered device. Two LEDs let user know whether power is originating from an ethernet switch or midspan power hub.

Description	Belden Part Number
<b>Connectors</b>	
Input IEEE 802.3af power from any powered Switch or midspan Hub	<b>AX-8858-01</b>
Input IEEE 802.3af power from HP Pro Curve powered Switch	<b>AX-8858-02</b>

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#### Data & Power Splitting “Y” Cables

Data & power splitting “Y” cables are for 12 Volt applications and feature a RJ-45 female/male and male power pin. They provide precise splitting of the signal for accurate performance. Various plug sizes/applications are listed below.

Description	Belden Part Number
<b>Data Splitting Y Cables</b>	
2.5 mm Plug for AXIS PTA -20, 2100, 2120	<b>AX-820Y-01</b>
2.1 mm Plug for Vivotek PTV-20	<b>AX-820Y-02</b>
1.3 mm Plug for Intellinet PTI-20	<b>AX-820Y-03</b>
No plug, Bare Wire for IVC 100	<b>AX-820Y-04</b>
Special Connector for Symbol AP 41XX	<b>AX-820Y-05</b>
5.5 mm Barrel w/1.0 mm Center – Sony SNC-RZ30N, Sony PTS-20, AXIS 2130	<b>AX-820Y-06</b>
MAXI 7-pin socket for SAVI Products	<b>AX-820Y-07</b>
CONXALL 6-pin for SAVI SR-600-101	<b>AX-820Y-08</b>
1.0 mm plug for AXIS 205, 210, 230, 241Q/S, 250S	<b>AX-820Y-09</b>
2.1 mm plug on 8” (2.4 m) power wire for Symbol AP 3020 series	<b>AX-820Y-10</b>

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