Magnum PS14P

4-port PoE Power Source Switch

Features

- Four PoE ports in a small heavy-duty Ethernet switch
- The switch and attached PoE devices are powered from an integral -48V DC terminal block
- Temperature rating of –40°C to 75°C handles heavy duty applications
- RJ-45 ports support standard auto-negotiation and auto-cross to enable attaching any 10 Mb or a 100 Mb device, regular or PoE
- Same package and DIN-Rail mounting options as the S14P Convenient Switches

Left side view Right side view

The Magnum PS14P PoE Power Source Convenient Switch combines standard 802.3af Power over Ethernet (PoE) with a small heavy-duty 4-port Switch. Using an external -48VDC power source, all four of the PS14P's Ethernet ports can provide power as well as 10/100 Mb data transmission over the inter-connecting Ethernet cables. Now, data and power for attached devices can be transmitted over a single Ethernet twisted-pair cable.

The PS14P switches are Power Sourcing Equipment (PSE), and are fully compatible with Powered Devices (PD) that comply with the IEEE 802.3af PoE standard. The PS14P Switch ports have an auto-sensing algorithm so that they provide power only to attached 802.3af end devices. If proprietary PoE and non-PoE equipment is attached, it will not be damaged. The PS14P ports discontinue supplying power when the PoE (PD) devices are disconnected, and support the PSE standard for over-current protection, under-current detection and fault protection.

The PS14P is a standards-compliant way to power and connect a few small Ethernet devices at the edge of a network where AC power is either not available or not cost-effective. Increasingly, small powered devices (PD) such as IP phones, video cameras, wireless access points, digital clocks, special purpose radios, IP phones, industrial sensors and laptop computers benefit with increased installation flexibility from the PS14P's PoE-PSE capabilities. Traditionally, a mid-span patch panel device could have been connected to a standard Ethernet switch, and insert power onto a PD device — a configuration requiring two devices to achieve PoE. The PS14P integrates both the Ethernet switch and the PoE power functions into one unit, saving costs and space, and increasing reliability for the application.

The Magnum PS14P Switches are designed for heavy duty industrial as well as temperature un-controlled applications such as sheltered outdoors. The PS14P models are built with premium-grade extended temperature components, and use special thermal techniques (patent pending) as well as a robust metal case for durability. Mounting options include stand-alone panel-mounting, DIN-rail, or rack-mount tray. No internal air flow is required for cooling, so the PS14P resists dust, dirt, moisture, smoke and insects.

A 4-port "go anywhere" Magnum PS14P Switch is a versatile and handy PoE solution. The PS14P provides edge access Ethernet ports in a convenient and compact package. For fiber connectivity or additional non-PoE ports, simply add a Magnum CS14P Converter Switch (two RJ-45 and one fiber) or an ES42P Edge Switch (6 ports) with all fiber port types available. All PS14P Power Source Convenient Switch models come with two (2) sets of LED indicators. One set is on the front for viewing convenience when the unit is wall-mounted, and one LED set is mounted in the end adjacent to three of the RJ-45 ports for easy viewing when units are in a rack-mount tray.

The Magnum PS14P family of Power Source Convenient Switches and other Magnum products are designed and manufactured in the USA and backed by a three-year warranty.

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Specifications

PERFORMANCE:
Data Rate: 10 / 100 Mb, FDX and HDX modes on all 4 ports.
Auto-negotiation and auto-cross MDI-MDIX on all four RJ-45 ports
Occurs at LINK-enable. No cross-over cables required.
Non-blocking switching, 128KB packet buffer memory
Address buffer storage = 2K addresses
Address buffer age-out time = 300 seconds

NETWORK STANDARDS:
Ethernet IEEE 802.3af PoE; IEEE 802.3, IEEE 802.3u;
IEEE 802.1p, 100BASE-TX, 10BASE-T
Data packets that have the 4-bytes tagged VLAN field (IEEE 802.1q) inserted in them are received and transmitted unchanged by all PS14Ps.

OPERATING ENVIRONMENT:
Ambient temperature ratings of –40°C to 75°C long term per independent agency tests, or –40°C to 85°C short term per IEC Type Tests.
Storage temperature: -40° to 185°F (-40°to 85°C)
Cold start to -40°C
Ambient Relative Humidity: 5% - 95% (non-condensing)
Altitude: -200 to 50,000 ft. (-60 to 15,000m)
Conformal coating (humidity protection) optional, request quote.
Designed for NEBS compliance, including vibration, shock, and altitude.

PACKAGING:
Enclosure: Robust sheet metal (steel)
Dimensions of units: 3.5 in H x 3.0 in W x 1.0 in D (8.9 cm x 7.6 cm x 2.5 cm)
Weight: PS14P Switch Units: 9.6 oz (272 grams)
Cooling Method: Case used as a heat sink

MOUNTING FOR PS14P FAMILY OF SWITCHES:
Metal panel mounting clips: included
DIN-Rail mounting option:
Model # DIN-RAIL MC2, illustrated here;
Rack-mount option: Model MC14-TRAY.
Depth: 6.0", Width 17",
Height 2.25"(15 cm D x 43cm W x 5.7cm H)

LED INDICATORS (dual, front and end, port #4 front only):
POWER: ON for -48V power applied to the PS14P unit
PoE, ports 1,2,3,4: ON when delivering power
10/100 per port: Steady ON for 100 Mb speed, OFF for 10 Mb speed
LK/ACT per port: Steady ON for LINK w/no traffic, blinking for Activity.
F/H per port 1,2,3 in end: Steady ON for F/D mode, OFF for H/D mode

PORT CONNECTORS:
RJ-45 with auto-cross, 100BASE-TX and 10BASE-T: shielded 8-Pin female. Supports shielded (STP) and unshielded (UTP) Cat. 3, 4, 5. PoE power is delivered to the unused (spare) twisted-pair port pins.

POWER INPUT:
Total Power Consumption: 66 watts max. (1.4A @48VDC).
Terminal block for *-48V DC* input (range of 46 to 60V DC), built-in for +, -, ground. The 8-15V DC jack is also present, but can only be used to power the PS14P unit when no PoE devices are attached.

PS14P terminal block area, shown with panel mount bracket.

POWER OUPUT: PoE available on all four RJ-45 ports via Ethernet twisted pair cabling on port pins 4,5(+), 7,8(-). Uses spare pairs, not data pairs.
802.3af Power Consumption: 61.6 watts max. (15.4/port)
PoE Ports Output voltage: 44 to 57 VDC
Over-current Protection, per port: resettable fuse

AGENCY APPROVALS AND STANDARDS COMPLIANCE:
UL listed (UL60950), cUL, CE, Emissions meet FCC Part 15, Class A.(see footnote 1)
NEBS L3 and ETSI compliant
IEEE 1613 Env. Std for Electric Power Substations
NEMA TS-2 and TEES for traffic control equipment
IEC61850 EMC and Operating Conditions Class C for Power Substations
Designed for above-the-ceiling (plenum) installation

WARRANTY: Three years Made in USA

1: These products are tested and approved under IEC61850 for use in Class C sheltered locations where neither temperature nor humidity are controlled. The equipment needs to be protected against solar radiation, rainfall, other precipitations, and wind. UL has not approved these products for Annex-T outdoor use.

Typical Applications:

- Connect a VoIP phone, a PoE powered digital clock, and an IP badge reader in an outdoor guard station into an indoors LAN using standard Ethernet twisted-pair copper cable
- Connect an IP wireless access point in a warehouse into the factory LAN
- For surveillance, connect a couple of outdoor PoE video cameras into a secure LAN
- Same as previous, but combine with a Magnum CS14P-48VDC for a fiber optic up-link

Ordering Information

Magnum PS14P Magnum Premium-rated PoE Power Source Convenient Switch, four 10/100 RJ-45 ports in a compact package, rated for temperature un-controlled (outdoor) environments. All four RJ-45 Ethernet ports support Power Source PoE per the IEEE 802.3af standard. Includes integral -48V DC terminal block for power input.

Note - should a heavy-duty industrial power supply be desired, that plugs into AC and delivers -48VDC at 50+ watts to support one PS14P-48VDC Switch and up to 4 attached PoE devices, check web sites such as www.LANstore.com.

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