

Features

- Industrial PoE Edge Switch with 100Mb Fiber ports and 4 Power-Sourcing RJ-45 PoE ports per IEEE 802.3af
- Ideal for PoE used in industrial IP video surveillance, wireless-access, VOIP phones, badge readers and support of similar hardened PoE devices
- "Outdoor" temperature rating handles heavy duty applications
- Includes Link-Loss-Learn (LLL) feature for use in self-healing LAN structures
- Packaging and mounting options are similar to the popular Magnum ES42-Series Edge Switches



The Magnum PES42P PoE Power-Source Edge Switch combines standard 802.3af Power over Ethernet (PoE) with a small heavy-duty 6-port Ethernet Switch. Using an external -48VDC power source, four of the PES42P's Ethernet ports can provide power as well as 10/100 Mb data transmission over the inter-connecting Ethernet cables. Data and power for the attached devices can be transmitted over a single Ethernet twisted-pair cable to each, simplifying and cost-reducing installation and maintenance in an industrial facility. The other PES42P ports may be 100Mb fiber for distance, noise immunity, ground-isolation and high bandwidth.

The compact PES42P Edge Switch design delivers 6 Ethernet ports. Four ports are always RJ-45 for PoE. The PES42P base models have either two 100 Mb fiber and 4 10/100 PoE copper ports, or one fiber and five copper ports, or 6 copper ports, 4 of which are PoE.

The PES42P switches are Power Sourcing Equipment (PSE), and are compatible with Powered Devices (PD) that comply with the IEEE 802.3af PoE standard. The PES42P Switch ports have an auto-sensing algorithm so that they provide power only to attached 802.3af PD devices. If proprietary PoE and non-PoE equipment is attached, it will not be damaged. The PES42P ports discontinue supplying power when the PoE devices are disconnected, and support the PSE standard for over-current protection, under-current detection and fault protection.

The PES42 includes Link-Loss-Learn (LLL), enabling it to be used in self-healing and redundant LAN structures. The LLL feature causes PES42P Switches to sense Link Loss or standard STP / RSTP reconfiguration signals on designated ports, flush internal address buffers to permit a change in LAN packets flow, and pass the reconfiguration signal down the line to other products in the redundant network structure. Magnum PES42P Switches, combined with managed switches running STP or RSTP or S-Ring, can incorporate PoE devices and often provide high availability redundant LANs at lower total cost than was previously possible.

The PES42P is a standards-compliant way to power and connect Industrial 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, industrial sensors and laptop computers benefit from increased installation flexibility via the PES42P'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 PES42P integrates fiber media upstream connectivity with an industrial Ethernet switch and the PoE power functions into one unit, saving cost and space, and increasing reliability for the application.

The PES42P Edge Switch comes with two (2) sets of LED indicators. One set is on the front for viewing convenience when the unit is DIN-Rail or wall-mounted, and one LED set is mounted in the end adjacent to the ports for easy viewing when units are in a rack-mount tray. The Magnum PES42P and other Magnum products are designed and manufactured in the USA and backed by a three-year warranty.



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PERFORMANCE:

Fiber ports: 100Mb, all types of connectors for m-m and single-mode
Fiber ports are factory set for FDX. RFQ for internal settings at HDX
RJ-45 Ports Data Rate: 10 / 100 Mbps, FDX and HDX modes.
Auto-negotiation and auto-cross MDI-MDIX on all RJ-45 ports.
Occurs at LINK-enable. No cross-over cables required.
PoE ports are Ports 3, 4, 5, and 6.
Non-blocking switching, 128KB packet buffer memory
Address buffer storage = 2K addresses
Address buffer age-out time = 300 seconds (see also LLL)

NETWORK STANDARDS:

Ethernet IEEE 802.3, IEEE 802.3u; IEEE 802.1p, IEEE 802.3af for PoE, 100BASE-TX, 10BASE-T, 100BASE-FX
LLL (Link-Loss-Learn)

SUPPORT: Factory default for LLL is Activated on Ports 1 and 2, the non-PoE ports. RFQ for other Activated Ports selections.

On Activated Ports, when a Loss of Link or reconfiguration BPDU for STP or RSTP is detected, the PES42P will flush internal address buffers and will pass the signal to other LLL Activated ports. This enables the PES42P to change the direction of packets flow and propagate the self-healing reconfiguration signal down the line.

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 (aluminum)
Dimensions of units: 3.6 in H x 3.0 in W x 1.7 in D (9.2 cm x 7.6 cm x 4.3 cm)
Weight: PES42P Switch Units: 9.5 oz (270g)
Cooling Method: Case used as heat sink

MOUNTING FOR PES42P FAMILY OF SWITCH UNITS:

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)



FIBER PORT CONNECTORS:

"ff" selections of the "fiber flavor" (see table below):

Use 2ff for a 2-fiber 4-copper model, 1ff for 1-fiber 5-copper model
No entry in the "fff" field designates a 6-copper port ES42 Switch.
"1SC" or "2SC" = 100BASE-FX-SC: FO multi-mode with SC type, 2 km
"1ST" or "2ST" = 100BASE-FX-ST: FO multi-mode with ST type, 2 km
"1MTRJ" or "2MTRJ" = 100BASE-FX-MTRJ: FO multi-mode w/ MTRJ, 2 km
"1MLC" or "2MLC" = 100BASE-FX-MLC: FO multi-mode with LC, 2Km
"1SSC" or "2SSC" = 100BASE-FX-SSC: FO single-mode with SC, 20 km
"1SSCL" or "2SSCL" = 100BASE-FX-SSCL: sgl-m SC Long Reach 40 km
"1SST" or "2SST" = 100BASE-FX-SST: FO single-mode with ST, 20 km
"1SLC" or "2SLC" = 100BASE-FX-SLC: FO sgl-m with LC-type, 15 km

For other fiber connector types, request quote.

Ordering Information

Magnum PES42P-ff-48VDC Magnum 6-port Premium-rated PoE Power-Sourcing Edge Switch, four 10/100 RJ-45 PoE ports plus two non-PoE ports which may be 100Mb fiber, or regular 10/100 copper, or one each type. See "ff" above for fiber port-type choices. Compact industrial-grade metal case, rated for temperature un-controlled (outdoor) environments. All four PoE RJ-45 Ethernet ports support Power Source PoE per the IEEE 802.3af standard. Includes -48V DC terminal block for power input, an alarm contact for status monitoring, and panel-mount brackets. DIN-Rail mounting bracket optional.

Note: should a heavy-duty industrial power supply be desired, that plugs into wide range AC or DC and delivers -48VDC at 60+ watts to support one PES42P PoE Edge Switch and up to 4 attached PoE devices, check web sites such as www.LANstore.com.

RJ-45 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 data pairs of the twisted-pair port pins.

LED INDICATORS, dual, top front and in end:

POWER: ON for -48VDC input power applied to the unit
10/100 per RJ-45 port: Steady ON for 100 Mb, OFF for 10 Mb speed
LK/ACT per port: Steady ON for LINK with no traffic, blinking for Activity.
F/H per port in end: Steady ON for F/D mode, OFF for H/D mode.
PoE, ports 3, 4, 5, and 6: ON when delivering power (yellow area of label)

POWER INPUT:

Total Power Input Required: for 4 PoE ports, 66 watts max. or 1.4A @ 48VDC, (15.4 watts/port) plus 7 watts typical for the PES42P unit
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 PES42P unit when no PoE devices are attached.
Internal DC power floats, user may ground + or - if desired

ALARM TERMINAL BLOCK, two screw terminals:

Internal 60VA relay contact: Open for Power Off, Closed for Power On

AGENCY APPROVALS AND STANDARDS COMPLIANCE:

UL listed (UL60950), cUL, CE, Emissions meet FCC Part 15, Class A.
NEBS L3 and ETSI compliant including vibration, shock, and altitude
IEEE 1613 Env. Std for Electric Power Substations
IEC61850 EMC and Operating Conditions Class C for Power Substations
NEMA TS-2 and TEES for traffic control equipment
Designed for above-the-ceiling (plenum) installation

WARRANTY:

Three years

Made in USA

These products are tested and approved under IEC61850 for use in Class C sheltered locations where neither temperature nor humidity is 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.

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