New!   New!

Premium-rated for Outdoors   Hardened for Factory Floor

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**

- **Two models for two application environments:**
  - **Factory floor**
  - **Outdoors**

- **Includes Link-Loss-Learn (LLL) feature for use in self-healing LAN structures or Dual-Homing on ports 1 & 2.**

- **Packaging and mounting options are similar to the popular Magnum ES42-Series Edge Switches**

GarrettCom®
Industrial Networking at Its Best™

The Magnum PES42 family 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 PES42's Ethernet ports can provide power as well as 10/100 Mb data transmission over the interconnecting Ethernet cables. Data and power for the attached devices can be transmitted over a single Ethernet twisted-pair cable to each, cost-reducing installation and maintenance in an industrial facility. The other PES42 ports may be 100Mb fiber for distance, noise immunity, ground-isolation and high bandwidth.

The compact PES42 Edge Switch design delivers 6 Ethernet ports. Four ports are always RJ-45 for PoE. The PES42 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 PES42 switches are Power Sourcing Equipment (PSE), and are compatible with Powered Devices (PD) that comply with the IEEE 802.3af PoE standard. The PES42 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 PES42 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 orange-label Magnum PES42H Hardened units are for factory floor applications. The red-label Magnum PES42P Premium-rated units are for temperature un-controlled applications, typically located outdoors. Both models are built with high-grade components and are constructed using special thermal techniques (patent pending) and metal cases for heavy duty industrial and outdoor jobs. The ambient temperature ratings for the "H" and "P" models are for industrial and outdoor uses, respectively. No internal air flow is required for cooling, so they resist dust, dirt, moisture, smoke and insects. Mounting options include stand-alone panel-mounting, DIN-Rail, or rack-mount tray.

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

The Dual-Homing PESD42 family provides high availability for small clusters of PoE devices such as cameras and badge readers, using a primary and a back-up link to the network upstream. This unique method of achieving redundancy in the network improves physical security solutions using IP protocols.

The PES42 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. The Magnum PES42 family and other Magnum products are designed and manufactured in the USA and backed by a three-year warranty.

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) (non-Dual-Homing models)
Factory default for LLL is Activated on Ports 1 and 2, the non-PoE ports.
Dual-Homing Models: Port 1 is primary; Port 2 is back-up
On Activated Ports, when a Loss of Link or reconfiguration BPDU for STP or RSTP is detected, the PES42 will flush internal address buffers and will pass the signal to other LLL Activated ports. This enables the PES42 to change the direction of packets flow and propagate the self-healing reconfiguration signal down the line.

OPERATING ENVIRONMENT:

Ambient temperature ratings
■ PES42H: the ambient temperature rating is -25°C to 60°C
long term per independent agency tests (UL 60950), or −40°C to 85°C
short term per Type Tests (IEC 60068)
■ PES42P: the ambient temperature rating is -40°C to 75°C
long term per independent agency tests (UL 60950), or −50°C to 100°C
short term per Type Tests (IEC 60068)

Storage temperature: -40° to 185°F (-40°to 85°C)
Cold start: PES42H model to -20°C, PES42P model 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)
H&P models: IEC 529 rated IP40
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: PES42 Switch Units: 9.5 oz (270g)
Cooling Method: Case used as heat sink

MOUNTING FOR PES42 FAMILY OF SWITCH UNITS:

Metal panel mounting clips: included
DIN-Rail mounting option:
Model # DIN-RAIL-LATCH, 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 "ff" field designates a 6-copper port PES42 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.

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. 5 and higher. 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 PES42 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 PES42 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.
IEC61850 EMC and Operating Conditions Class C for Power Substations
IEEE 1613 Env. Std for Electric Power Substations
NEBS L3 and ETSI compliant including vibration, shock, and altitude
NEMA TS-2 and TEES for traffic control equipment
Designed for above-the-ceiling (plenum) installation
Compliant with EN50155 Railway Applications Standard

WARRANTY:

Three years   Made in USA

These products are tested are 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.

Ordering Information

Magnum PES42H-ff-48VDC	Magnum 6-port hardened 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 factory floor 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.
Magnum PES42P-ff-48VDC	Same as PES42H-ff-48VDC, but with Premium-rated for temperature un-controlled (outdoor) environments
Magnum PESD42H-ff-48VDC	Same as PES42H-ff-48VDC, but with Dual-Homing redundancy on Ports 1 and 2.
Magnum PESD42P-ff-48VDC	Same as PES42P-ff-48VDC, but with Dual-Homing redundancy on Ports 1 and 2.

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