ER59000 Series

Hardened Managed 16-port 10/100BASE M12 (8 x PoE) with 2-port Gigabit LC Ethernet Switch



Overview

This product is discontinued as of 10th Jul 2018.

EtherWAN's ER59000 Series provides a hardened 18-port switching platform supporting IEEE802.3at Power over Ethernet, high performance switching with robust management features required for railway transportation application.

The ER59000 Series is equipped with 16x 10/100BASE-TX (8x PoE) with M12 connector, in combination with two Gigabit LC Fiber ports options. The rugged, weatherproof IP67 rated switch is ideal for use in extreme environments. Compliant with EN50155 standard, the ER59000 Series is designed for rolling stock applications.

The IEEE802.3at PoE ports provide up to 30W/port with a total power budget of 240W, making the switch truly versatile for connecting with PoE Powered Devices (PD) with different bandwidth and power consumption requirements such as; outdoor PTZ dome cameras, wireless access points, and way-side communication devices.

Panel mountable, the ER59000 Series is equipped with EtherWAN's Alpha-Ring self-healing ring technology providing less than 15ms fault recovery time. Users are able to access management features such as port security, IGMP snooping, port-based VLAN, GARP protocols, link aggregation , via web browser, telnet, SSH, SNMP, RMON, TFTP, and console interfaces. With the hardened specifications, the ER59000 Series is designed to operate at -40°C to 75°C with IP67 protection in harsh environments, where dust, water immersion, high ESD, shock, and vibration may be present.

EtherWAN — "When Connectivity is Crucial."

Spotlight

Railway Oriented

» Compliant with EN50155/EN50121-3-2/EN50121-4 railway applications

M12 Connector

» Built-in 16-port 10/100BASE M12 plus 2-port Gigabit Copper/LC
» 8-port PoE function with IEEE802.3at up to 30W per port

IP67 Rated Fully Managed Ethernet Switch

» IP67 grade protection and rugged enclosure design

Features

Management

» Interface
  • CLI, Telnet and Web Browser
  • SNMP v1/v2c/v3
» Firmware and configuration upgrade and backup via TFTP
» Supports DHCP Server/Client
» RMON (Remote monitoring): group 1, 2, 3, 9
» Port mirroring: TX/RX and both
» NTP (Network Time Protocol) time synchronization
» IEEE802.1ab LLDP (Link Layer Discovery Protocol)

Security

» MAC address filtering
» Enable/disable port
» Storm control (broadcast and multicast types)
» IEEE802.1x LAN access control
» Remote authentication through RADIUS
» SSH for CLI and Telnet security
» SSL for web security
» Multi-level user account/password against unauthorized configuration

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Quality of Service (QoS)

» Priority Queues: 4 queues per port
» Traffic classification based on IEEE802.1p CoS, DSCP, WRR (Weighted round robin) and strict mode
» Rate Limiting (Ingress/Egress)

Layer 2 Features

» Auto-negotiation for port speed and duplex mode

- Flow Control
- IEEE802.3x full duplex mode
- Back-Pressure half duplex mode

» Redundant Protocols
- IEEE802.1D Spanning Tree Protocol (STP)
- IEEE802.1w Rapid Spanning Tree Protocol (RSTP)
- IEEE802.1s Multiple Spanning Tree Protocol (MSTP)
- EtherWAN's Alpha-Ring network fault recovery (<15ms)

» VLANs
- Port-based VLANs
- IEEE802.1Q Tag VLANs (128 groups, 4096 VID)
- GVRP (GARP VLAN Registration Protocol)
- GMRP (GARP Multicast Registration Protocol)

» Link Aggregation
- Static trunk (2 groups, support MAC base)
- IEEE802.3ad Link Aggregation Control Protocol

» IGMP Snooping
- IGMP snooping v1/v2/v3

Performance

» Switching Capability: 7.2Gbps
» Packet Buffer Size: 2M bits
» MAC Address Table: 8K

Specifications

Technology

Standards

• IEEE802.3 10BASE-T
• IEEE802.3u 100BASE-TX/100BASE-FX
• IEEE802.3ab 1000BASE-T
• IEEE802.3z 1000BASE-SX/1000BASE-LX
• IEEE802.3x Full duplex and flow control
• IEEE802.1p QoS
• IEEE802.1Q Tag VLANs
• IEEE802.1w RSTP
• IEEE802.1x Port-based Network Access Control
• IEEE802.1s MSTP
• IEEE802.3ad LACP
• IEEE802.3af/at Power over Ethernet (PoE)

Forward and Filtering Rate

• 14,880pps for 10Mbps
• 148,810pps for 100Mbps
• 1,488,100pps for 1000Mbps

Packet Buffer Memory

• 2M bits

Processing Type

• Store-and-Forward
• Half-duplex back-pressure and IEEE802.3x full-duplex flow control

Address Table Size

• 8192 MAC addresses

Power

Input

• Redundant power inputs:

M23: 12 - 48VDC (non-PoE model)
M23: 55 (52 to 57) VDC

Power Consumption

• Device: Max. 11W (without PoE)
• PoE power budget (depends on power input): 240W Max

PoE Technology
• Alternative A
Pins 1/2(+), 3/6(-)

PoE Power Output
• Port 1 to 8: IEEE802.3at, up to 30W/port, 47 - 57VDC

Protection
• Reverse polarity protection

Mechanical

Casing
• Die-cast aluminum
• IP67

Dimensions
• 258mm (W)x 228mm(D)x 83.5mm(H)
(10.1"(W) x 8.9"(D) x 3.2"(H))

Weight
• 2.3Kg (5.07lbs)

Installation
• Panel mounting

Interface

Ethernet Port
• 10/100BASE-M12 D-Code 4-Pin Female: 16 ports
• Gigabit-TX/LC: 2 ports

Console Port
• Port: M12 RS232 Console

LED Indicators
• Per Unit: Power 1 (Green)

LED Indicators

• Per Unit: Power 1 (Green)
Power 2 (Green)
• Per Port: Link/Activity (Green)
• Per PoE Port (Port 1 to 8 for PoE model only): PoE (Green)

Alarm Contact

• One relay M12 A-Code 4-Pin Female output with current 1A @ 250 VAC

Environment

Operating Temperature

• -40°C to 75°C (-40°F to 167°F)
Tested @ -40°C to 85°C (-40°F to 185°F)

Storage Temperature

• -45°C to 85°C (-49°F to 185°F)

Ambient Relative Humidity

• 5% to 95% (non-condensing)

Regulatory Approvals

ISO

• Manufactured in an ISO9001 facility

EMI

FCC Part 15B, Class A
EN61000-6-4
EN55022
EN55011 (for EN50155)

EMS

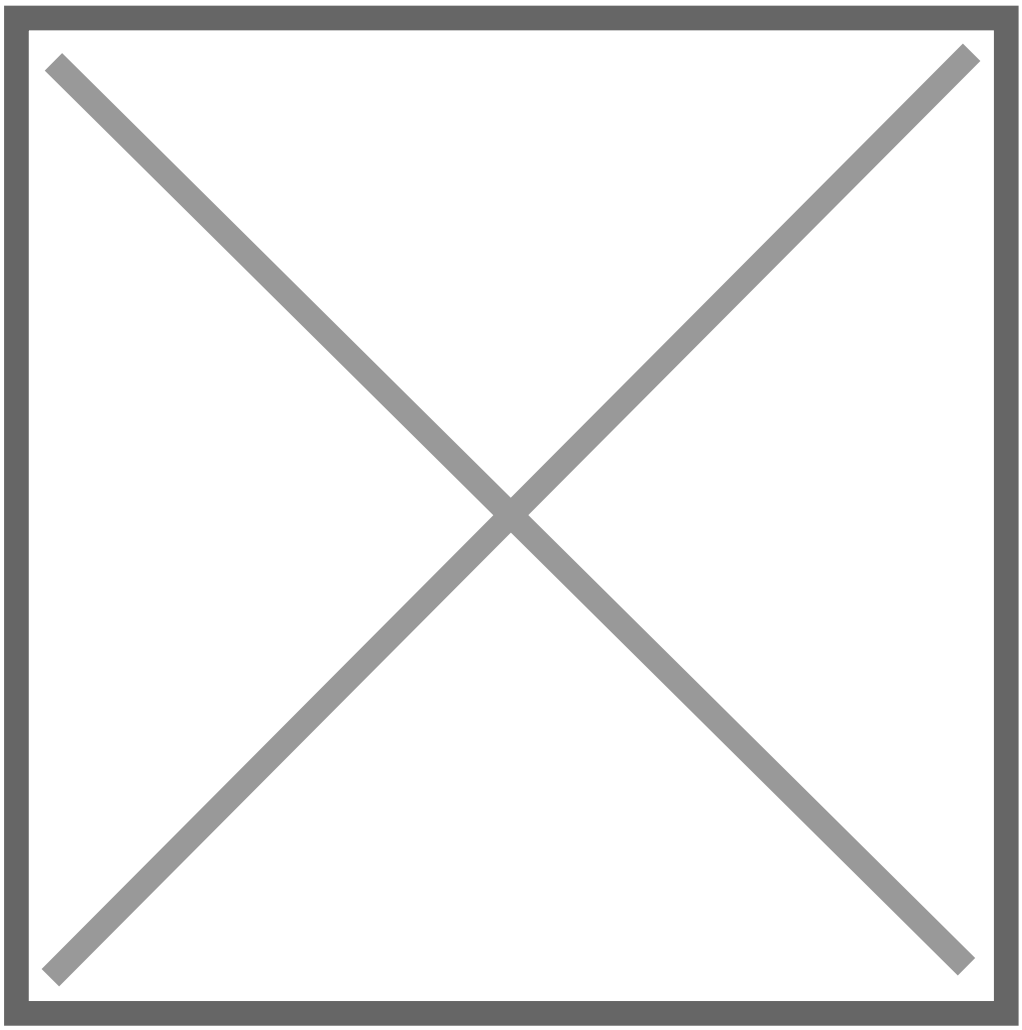
EN61000-6-2
• EN61000-4-2 (ESD Standards)
• EN61000-4-3 (RFI Standards)
• EN61000-4-4 (Burst Standards)
• EN61000-4-5 (Surge Standards)
• EN61000-4-6(Induced RFI Standards)
• EN61000-4-8 (Magnetic Field Standards)
• EN61000-4-9 (Pulsed magnetic field)

Environmental Test Compliance

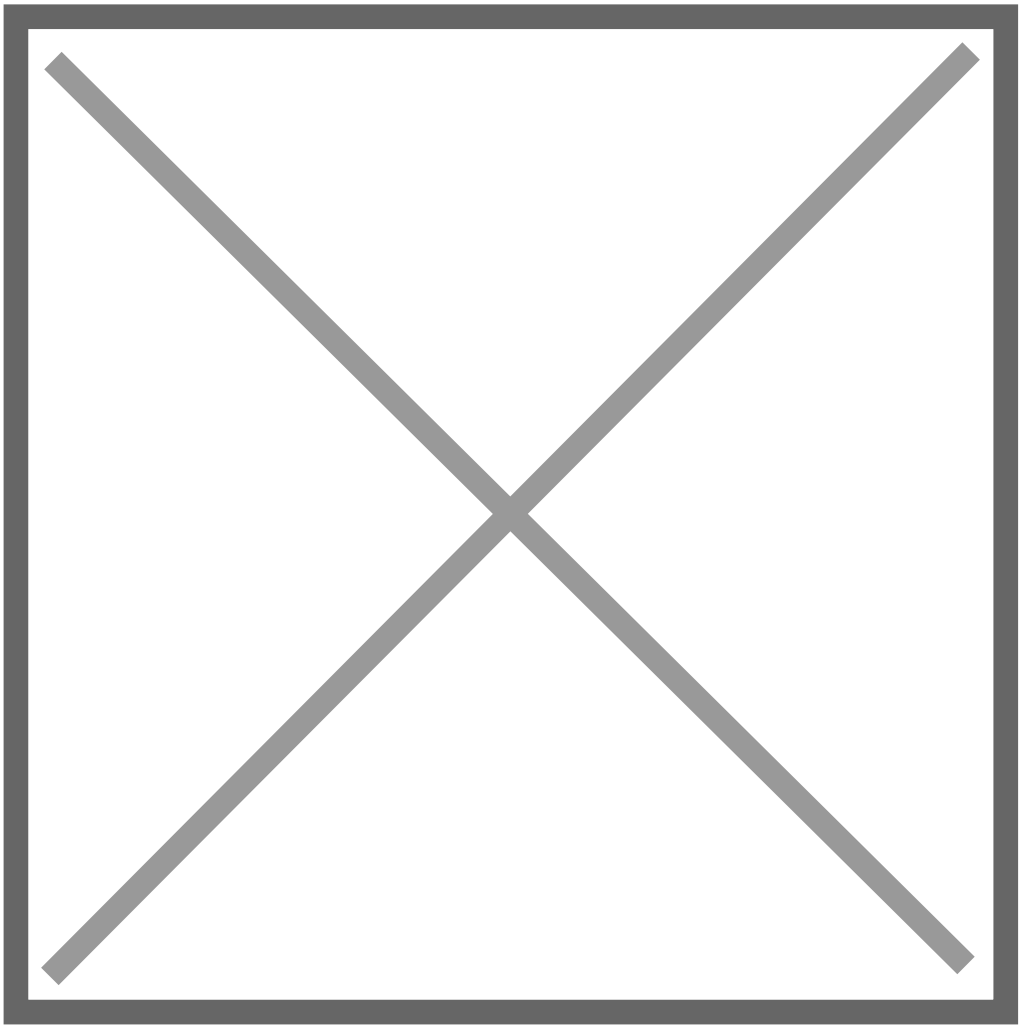
IEC61373 (Vibration) for EN50155
IEC61373 (Shock) for EN50155
IEC600680-2-32 Ed (Free fall)

Industrial Compliance
EN50155
EN50121-3-2
EN50121-4

Application



Dimensions



Ordering Info

Model

ER59402-20YZP	Hardened Managed 16-port 10/100BASE M12 (8 x PoE) with 2-port Gigabit LC Ethernet Switch

* Panel mounting kit included

Gigabit Port Options (Y)

1	10/100/1000BASE-TX
E	1000BASE-SX(LC) - 550m
M	1000BASE-SX (LC) - 10Km
N	1000BASE-LX (LC) - 20Km

* More Gigabit options also available upon request

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