

## ER52000 Series

Hardened Unmanaged 8-port 10/100BASE M12 (8 PoE) +2-port 10/100/1000BASE M12 Ethernet Switch



## Overview

EtherWAN's ER52000 series provides a hardened 10-port switching platform specifically designed for rolling stock such as; Rail, Light Rail, and Bus applications. Supporting IEEE802.3at Power over Ethernet (PoE+), rugged M12 connectors, wide power input options from as low as 18VDC to as high as 160VDC and rail specific certifications. The ER52000 provides the high-performance switching required for mission-critical rolling stock applications.

The ER52000 is equipped with 8 M12 10/100BASE-TX PoE+ ports, in combination with two gigabit M12 ports supporting bypass relay functionality ensuring backbone connectivity remains intact during power loss to the switch. The ER52000 is feature rich, offering 9.6K Jumbo Frame support on gigabit ports with full wire speed gigabit throughput.

The 8 IEEE802.3at PoE+ ports provide up to 30 watts per port, with a total power budget of 120 watts in a high-temp fan-less design. This ensures maximum reliability and versatility for connections with PoE+ powered devices having varied bandwidth and power consumption requirements.

## Spotlight

### Designed for Rolling Stock

- » Rail, Light Rail, Bus, Emergency Vehicles
- » EN50155/EN50121-3-2 Railway Compliant

### Power over Ethernet

- » Ports 1-8 provide PoE power up to 30 watts

### M12 Connector

- » Built-in 8-ports 10/100BASE M12 plus 2-ports gigabit M12
- » Provides two gigabit ports with bypass relay function

### Jumbo Frame Support

- » Up to 9.6K bytes on gigabit ports

# Specifications

## Technology

### Standards

- IEEE 802.3 10BASE-T
- IEEE 802.3u 100BASE-TX/100BASE-FX
- IEEE 802.3ab 1000BASE-T
- IEEE 802.1x, Full duplex flow control
- IEEE 802.3af/at Power of Ethernet (PoE)

### Forward and Filtering Rate

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

### Packet Buffer Memory

- 4M bits

### Processing Type

- Store-and-Forward
- Auto Negotiation
- Half-duplex back-pressure and IEEE 802.3x full-duplex flow control
- Auto MDI/MDIX

### Jumbo Frame

- 9.6K bytes

### Address Table Size

- 8192 MAC addresses
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## Power

### Redundant Power Inputs

- M12: 72-110VDC
- M12: 18-57VDC

### Power Consumption

- Device: 11.5W

- PoE Power Budget: 120W  
Port 1 to Port 4, 10/100 PoE ports: 60W  
Port 5 to Port 8, 10/100 PoE ports: 60W

## Power Technology

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

## Protection

- Reverse polarity protection
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## Mechanical

### Casing

- Metal casting
- IP30

### Dimensions

- 140 x 228 x 65.8mm (W x D x H)  
(5.5" x 2.59" x 8.98")

### Weight

- 1.5Kg (3.31lbs)

### Installation

- Wall mounting
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## Interface

### Power Port

- M12 S-code, 4-pin Male

### Ethernet Port

- 10/100BASE-TX: M12 D-code, 4-pin Female
- 10/100/1000BASE-T: M12 A-code, 8-pin Female

### LED Indicators

- Per Unit: Power1, Power2 (Green)
  - Per Port: Link/Activity (Green)
  - PoE Port: PoE Status (Amber)
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## Environment

### Operating Temperature

- -40 to 75°C (-40 to 167°F)

### Storage Temperature

- -40 to 85°C (-40 to 185°F)

### Ambient Relative Humidity

- 5% to 95% (non-condensing)
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## Regulatory Approvals

### ISO

- Manufactured in an ISO 9001 facility

### EMI

- FCC Part 15B Class A
- VCCI Class A
- EN 61000-6-4
- EN 50121-3-2

### EMS

- EN 50121-3-2
- EN 61000-6-2
- EN 61000-4-2 (ESD Standards)
- EN 61000-4-3 (Radiated RFI Standards)
- EN 61000-4-4 (Burst Standards)
- EN 61000-4-5 (Surge Standards)
- EN 61000-4-6 (Induced RFI Standards)
- EN 61000-4-8 (Magnetic Field Standards)

### Environmental Test Compliance

- IEC 60068-2-6 Fc (Vibration)
- IEC 60068-2-27 Ea (Shock)
- FED STD 101C Method 5007.1 (Free Fall w/Package)

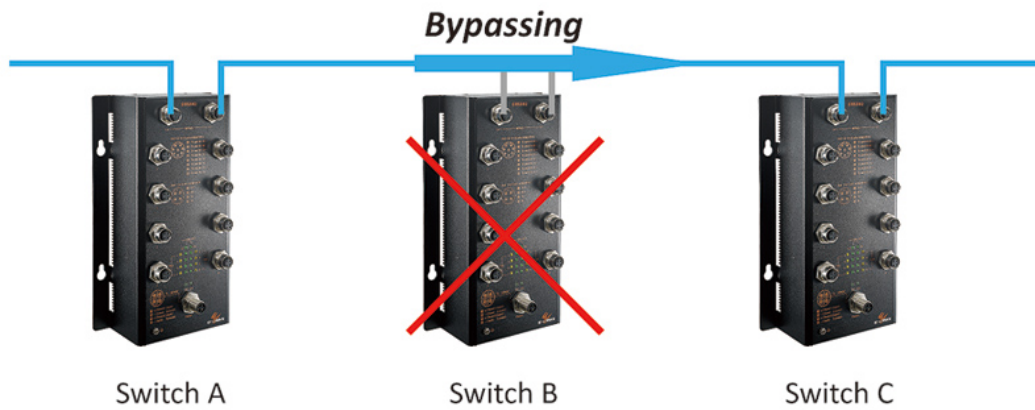
### Rail Traffic

- EN 50155
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## Relay Function

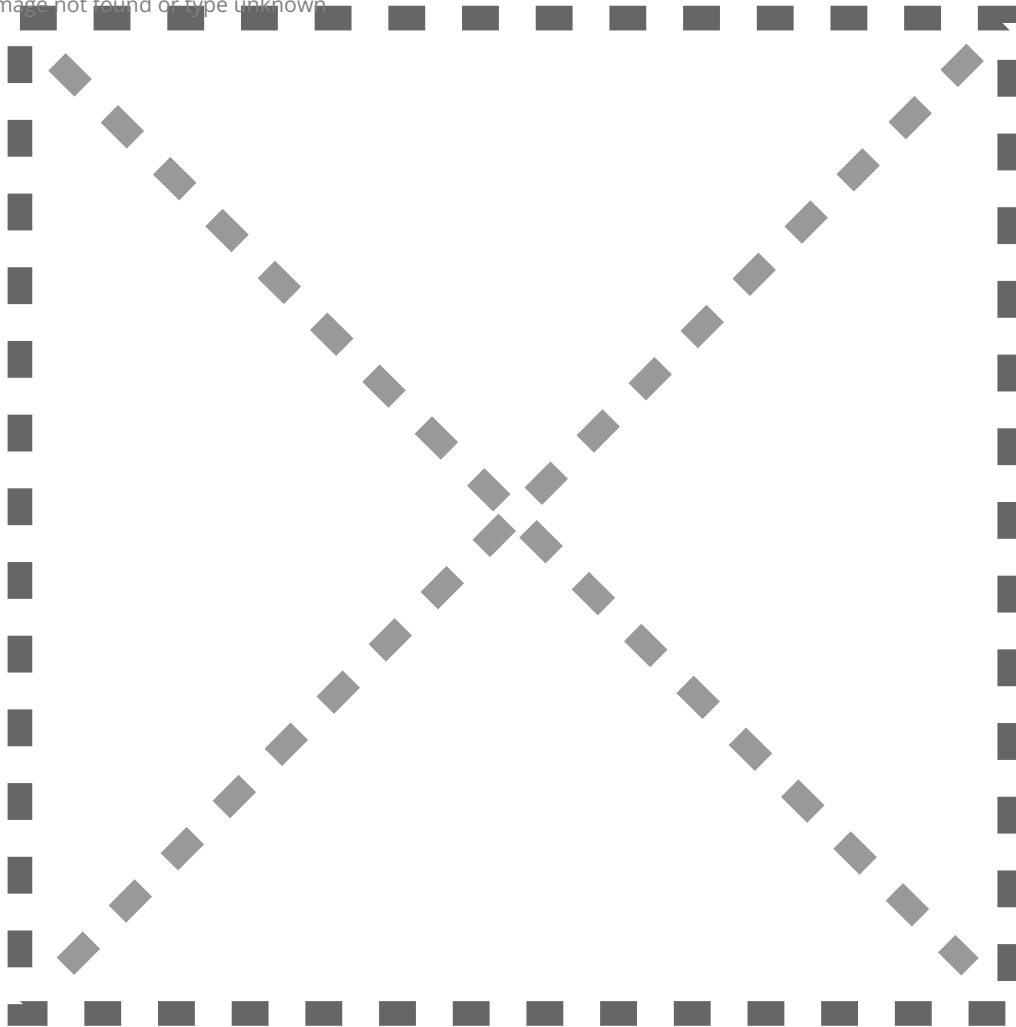
### Bypass Relay Functions

The ER52000 supports bypass relay function on the Gigabit ports when the switch is operating normally, the Gigabit ports operate in the same manner as the other ports, processing and forwarding Ethernet packets. In the event the switch stops working due to a power failure, the bypass relay function will be triggered ensuring non-stop data flow.



## Dimensions

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## Ordering Info

### Model

<b>ER52082-Z</b>	8-port 10/100BASE M12 (8 PoE) +2-port 10/100/1000BASE M12 Hardened Unmanaged Ethernet Switch
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### Power Input Interface (Z)

<b>I</b>	72-110VDC
<b>H</b>	18-57VDC

### Optional Accessories

<b>NDR-240-48</b>	240W/5A DIN-Rail 48VDC Industrial Power Supply
<b>SDR-480-48</b>	480W/10A DIN-Rail 48VDC Industrial Power Supply
<b>ER58000-RJ458P</b>	 <p>M12 A-code (8-pin male) to 10/100/1000BASE-T RJ45 Interface, 3-meter Cable</p>
<b>ER58000-RJ454P</b>	 <p>M12 D-code (4-pin male) to 10/100BASE-TX RJ45 Interface, 3-meter Cable</p>
<b>W96G-1543223XX</b>	 <p>M12 D-code (4-pin male) Quick Connector</p>
<b>W96G-1543236XX</b>	 <p>M12 A-code (8-pin male) Quick Connector</p>





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