

# TXES-150-M12



ORing WEB-site

## ➤ EN50155 5-port unmanaged Ethernet switch with 5x10/100/500Base-T(X), M12 connector

### Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provided 5x10/100/500Base-T(X) ports
- Supports auto-negotiation and auto-MDI/MDI-X
- Supports store and forward transmission
- Supports flow control
- M12 connectors to guarantee reliable operation against environmental disturbances
- Rigid IP-30 housing design
- Wall mounting enabled



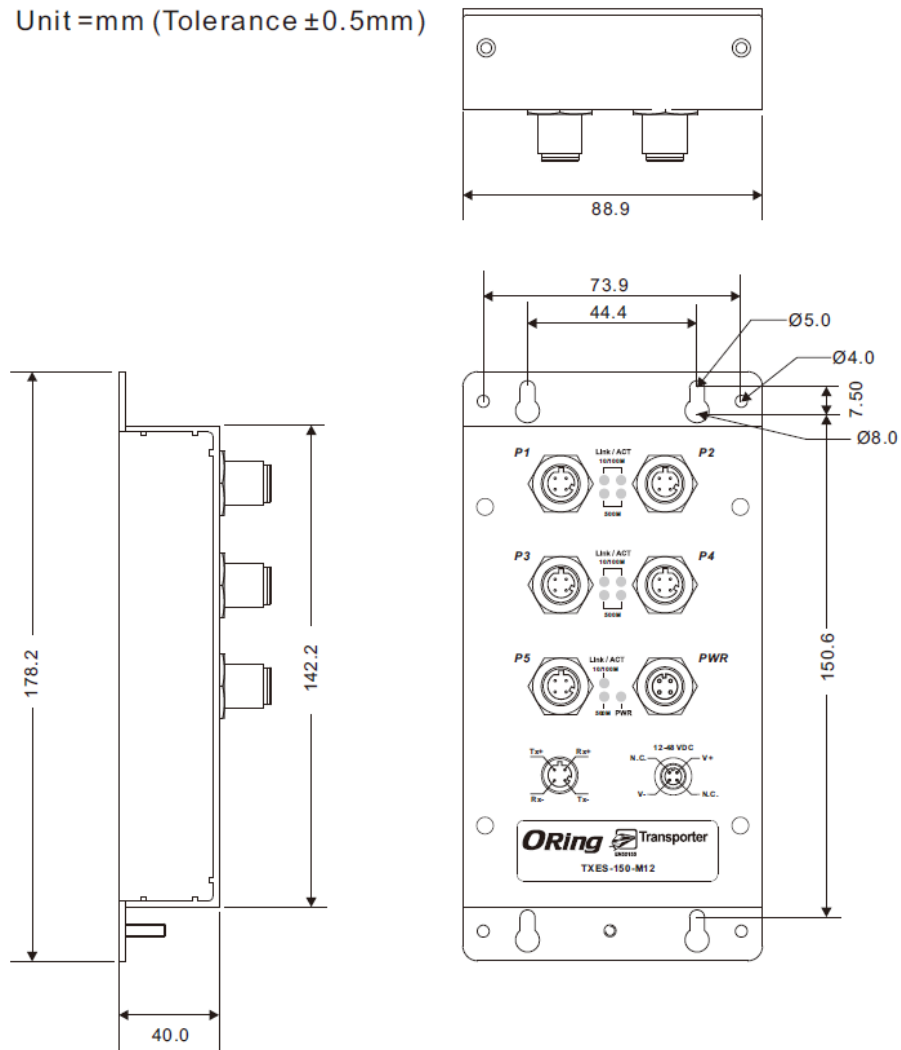
### Introduction

ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TXES-150-M12 is an unmanaged Ethernet switch with 5x10/100/500Base-T(X) which is specifically designed for the toughest and fully compliant with EN50155 requirements. TXES-150-M12 EN50155 Ethernet switch uses M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. In addition, the wide operating temperature range from -40oC to 75oC can satisfy most of the operating environment. The TXES-150-M12 can be easily adopted in all kinds of applications and provides the most rugged solutions for your network. Therefore, the switch is one of the most reliable choices for rolling stock Ethernet applications.

While installed in the train, TXES-150-M12 is mainly used for in-train monitoring and Entertainment service due to its high-speed Ethernet connection. Devices connected will be IP camera or CCTV for the use of train surveillance. As an unmanaged Ethernet Switch, TXES-150-M12 is not able and will not be used for any control-related application. Its main function is simply forwarding the Ethernet packet from one Ethernet-based device to another Ethernet device which is all connected to the Switch.

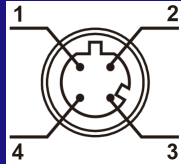
Dimensions

Unit =mm (Tolerance ±0.5mm)



Pin Definition

| 10/100/500Base-T(X) M12 port |             |
|------------------------------|-------------|
| Pin No.                      | Description |
| #1                           | Tx+         |
| #2                           | Rx+         |
| #3                           | Tx-         |
| #4                           | Rx-         |



D-Coding M12

## Specifications

| ORing Switch Model                             | TXES-150-M12   |
|--|--|
| <b>Physical Ports</b>                          |  |
| 10/100/500Base-T(X) Ports in M12 Auto MDI/MDIX | 5 (4-pin female D-coding)  |
| <b>Technology</b>                              |  |
| Ethernet Standards                             | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX<br>IEEE 802.3x for Flow control  |
| MAC Table                                      | 4k   |
| Packet buffer                                  | 1.5Mbits   |
| Processing                                     | Store-and-Forward  |
| Switch Properties                              | Switching latency: 7 $\mu$ s<br>Switching bandwidth: 1Gbps<br>Throughput (packet per second): 744Mpps@64Bytes packet   |
| <b>LED indicators</b>                          |  |
| Power Indicator (Power)                        | Green: Power LED x 1   |
| 10/100/500Base-T(X) M12 Port Indicator         | Top green LED for 10/100Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active.<br>Bottom green LED for 500Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active. |
| <b>Power</b>                                   |  |
| Input power                                    | 12-48 VDC on 4-pin M12 A-coded male connector<br><b>*NOTICE: For EN50155 applications, it supports 24VDC power input only.</b>   |
| Power consumption (Typ.)                       | 2 Watts Max.   |
| Overload current protection                    | Present  |
| Reverse Polarity Protection                    | Present  |
| <b>Physical Characteristic</b>                 |  |
| Enclosure                                      | IP-30  |
| Dimension (W x D x H)                          | 88.9 (W) x 40 (D) x 178.2 (H) mm<br>3.5 (W) x 1.57 (D) x 7.02 (H) inch   |
| Weight (g)                                     | 488 g  |
| <b>Environmental</b>                           |  |
| Storage Temperature                            | -40 to 85°C (-40 to 185°F)   |
| Operating Temperature                          | -40 to 75°C (-40 to 167°F)   |
| Operating Humidity                             | 5% to 95% non-condensing   |
| <b>Regulatory approvals</b>                    |  |
| EMC  | CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2)   |
| EMI  | EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A   |
| EMS  | EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8(PFMF), IEC/EN 61000-4-11 (DIP))   |
| Shock  | IEC60068-2-27  |
| Free Fall                                      | IEC60068-2-31  |
| Vibration                                      | IEC60068-2-6   |
| Safety   | EN 62368-1 (LVD)   |
| Other  | EN 50155 (IEC 61373)   |
| MTBF   | 1,585,397 hrs.   |
| Warranty                                       | 5 years  |

Ordering Information

TXES-1 **A** **B** -M12



| Code Definition | 10/100/500Base-T(X) Port Number | Additional Port Number |
|-----------------|---------------------------------|------------------------|
| <b>Option</b>   | - <b>5</b> : 5 ports            | - <b>0</b> : 0 ports   |

| Available Model | Model Name   | Description  |
|-----------------|--------------|--|
|                 | TXES-150-M12 | EN50155 5-port unmanaged Ethernet switch with 5x10/100/500Base-T(X), M12 connector |

|  |   |
|--|---|
| <b>Packing List</b> <ul style="list-style-type: none"> <li>• TXES-150-M12 x 1</li> <li>• Quick Installation Guide x 1</li> </ul> | <b>Optional Accessories</b> <ul style="list-style-type: none"> <li>• M12 cable series</li> <li>• Power supply series: SDR/NDR series</li> </ul> |
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