



ORing WEB-site

# TXES-180-M12

➤ **EN50155 8-port unmanaged Ethernet switch with 8x10/100/500Base-T(X), M12 connector**

## Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provided 8x10/100/500Base-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



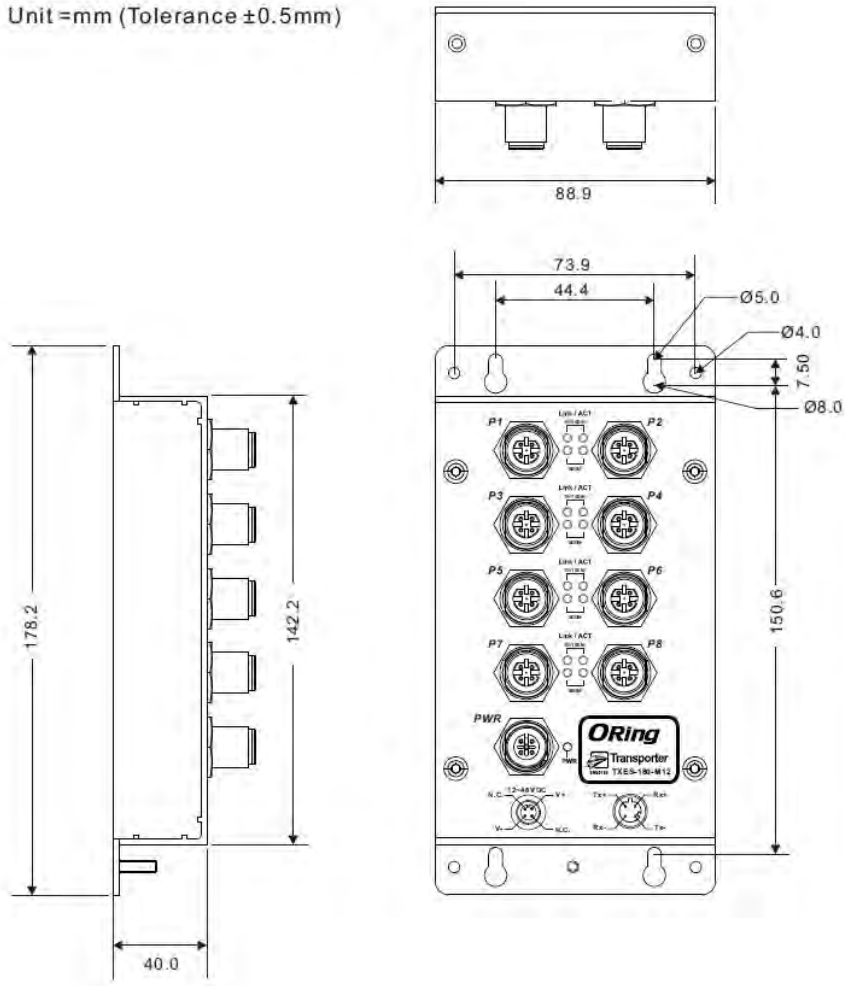
## Introduction

ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TXES-180-M12 is an un-managed Ethernet switch with 8x10/100/500Base-T(X) which is specifically designed for the toughest and fully compliant with EN50155 requirement. TXES-180-M12 EN50155 Ethernet switch use 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 -40°C to 75°C can satisfy most of operating environment. The TXES-180-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 application.

While installing in the train, TXES-180-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-180-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 are all connected to the Switch.

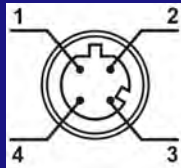
## Dimensions

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-180-M12   |
|--|--|
| Physical Ports                                 |  |
| 10/100/500Base-T(X) Ports in M12 Auto MDI/MDIX | 8 (4-pin female D-coding)  |
| Technology                                     |  |
| 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: 1.6Gbps  |
| LED indicators                                 |  |
| 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. |
| Power  |  |
| Input power                                    | 12-48VDC on 4-pin M12 A-coded male connector<br><b>*NOTICE: For ENS0155 railway applications, 24VDC power input is required.</b>   |
| Power consumption (Typ.)                       | 1.6 Watts max.   |
| Overload current protection                    | Present  |
| Reverse Polarity Protection                    | Present  |
| Physical Characteristic                        |  |
| 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)                                     | 550g   |
| Environmental                                  |  |
| 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   |
| Regulatory approvals                           |  |
| 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   |
| Other  | EN 50155 (IEC 61373)   |
| MTBF   | 1,560,399 hrs.   |
| Warranty                                       | 5 years  |

## Ordering Information

| Available Model   | Model Name   | Description  |
|---|--------------|--|
|   | TXES-180-M12 | EN50155 8-port unmanaged Ethernet switch with 5x10/100/500Base-T(X), M12 connector   |
| <b>Packing List</b> <ul style="list-style-type: none"><li>• TXES-180-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>• NDR/SDR power supply series</li></ul> |