

## Quick Installation Guide

## TGXS-1080-M12-MV Series



EN50155 8-port unmanaged  
Gigabit Ethernet switch

## Introduction

ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The **TGXS-1080-M12-MV** is an un-managed Ethernet switch with 8x10/100/500/1000Base-T(X) which is specifically designed for the toughest and fully compliant with EN50155 requirement. **TGXS-1080-M12-MV** 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. Therefore, the switch is one of the most reliable choices for rolling stock and highly-managed Ethernet application. While installing in the train, **TGXS-1080-M12-MV** is mainly used for in-train monitoring and Entertainment service due to its high-speed Gigabit Ethernet connection. Devices connected will be IP camera or CCTV for the use of train surveillance. As an unmanaged Ethernet Switch, **TGXS-1080-M12-MV** 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.

## Package Contents





The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

Contents	Pictures	Number
TGXS-1080-M12-MV or TGXS-1080-M12-BP2-MV		1
QIG		1

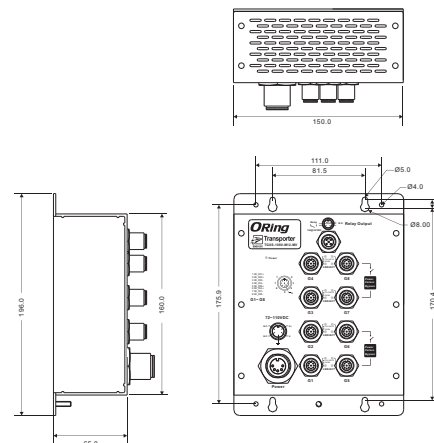
## Preparation

Before you begin installing the device, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

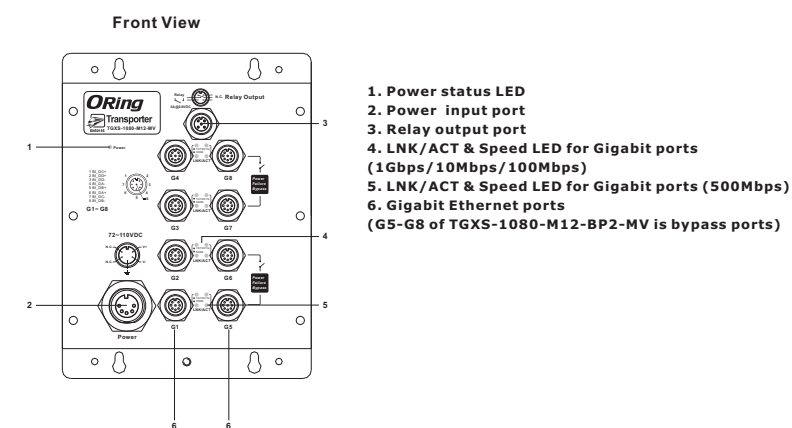
## Safety &amp; Warnings

-  **Elevated Operating Ambient:** If installed in a closed environment, make sure the operating ambient temperature is compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.
-  **Reduced Air Flow:** Make sure the amount of air flow required for safe operation of the equipment is not compromised during installation.
-  **Mechanical Loading:** Make sure the mounting of the equipment is not in a hazardous condition due to uneven mechanical loading.
-  **Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

## Dimension Unit =mm (Tolerance ±0.5mm)



## Panel Layouts



## Installation

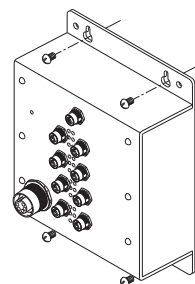
## Wall-mount

The device can be fixed to the wall. Follow the steps below to install the device on the wall.

**Step 1:** Hold the device upright against the wall

**Step 2:** Insert four screws through the large opening of the keyhole-shaped apertures at the top and bottom of the unit and fasten the screw to the wall with a screwdriver.

**Step 3:** Slide the device downwards and tighten the four screws for added stability.



Instead of screwing the screws in all the way, it is advised to leave a space of about 2mm to allow room for sliding the switch between the wall and the screws.

## Wiring

For pin assignments of power, console and relay output ports, please refer to the following tables.

## Grounding

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the grounding pin on the power connector to the grounding surface prior to connecting devices.

## Power port pinouts

The device supports one set of power supplies and uses the 7/8 inch 5-pin male connector on the front panel for the power input.

**Step 1:** Insert a power cable to the power connector on the device.

**Step 2:** Rotate the outer ring of the cable connector until a snug fit is achieved. Make sure the connection is tight.



## Relay output port pinouts

The switch uses the M12 A-coded 5-pin female connector on the front panel for relay output. Use a power cord with an M12 A-coded 5-pin male connector to connect the relay.

The relay contacts will detect user-configured events and form an open circuit when an event is triggered.



## Network Connection

The device provides Ethernet ports in M12 connector type. According to the link type, the switch uses CAT 3, 4, 5, 5e UTP cables to connect to any other network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	M12 A-coding connector
100BASE-TX	Cat. 5 100-ohm UTP	UTP 100 m (328 ft)	M12 A-coding connector
1000BASE-T	Cat. 5/Cat. 5e 100-ohm UTP	UTP 100 m (328ft)	M12 A-coding connector

For pin assignments of the LAN ports, please refer to the following tables.



10/100/500/1000Base-T(X) M12 port Pin Definition	
Pin No.	Description
#1	BI_DC+
#2	BI_DD+
#3	BI_DD-
#4	BI_DA-
#5	BI_DB+
#6	BI_DA+
#7	BI_DC-
#8	BI_DB-

## Configurations

After installing the switch and connecting cables, start the device by turning on power. The green power LED should turn on. Please refer to the following tablet for LED indication.

LED	Color	Status	Description
PWR	Green	On	Power is enabled
10/100/500/1000Base-T(X) Ethernet ports			
LNK/ACT	Green	On	Port is linked
Speed (Upper LED)	Green	On	Port is running at 1Gbps
Speed (Lower LED)	Amber	On	Port is running at 10/100 Mbps
Speed (Lower LED)	Amber	On	Port is running at 500Mbps

## Specifications

ORing Switch Model	TGXS-1080-M12-MV	TGXS-1080-M12-BP2-MV
<b>Physical Ports</b>		
10/100/500/1000Base-T(X) Ports in M12	<b>8 x M12 connector (8-pin A-coding, female connector)</b>	<b>8 x M12 connector (8-pin A-coding, female connector, bypass function included by last 4 ports)</b>
<b>Technology</b>		
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T IEEE 802.3x for Flow control	
MAC Table	4K MAC addresses	
Processing	Store-and-Forward	
<b>Fault Contact</b>		
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin M12 A-coding)	
<b>Power</b>		
Input power	72/96/110VDC (50.4-154VDC), 7/8 inch 5-pin male connector	
Power Consumption(Typ.)	72VDC@9Watts Max. 110VDC@12Watts Max.	
Overload Current Protection	Present	
Reverse Polarity Protection	Present	
<b>Physical Characteristic</b>		
Enclosure	IP-30	
Dimension (W x D x H)	150(W) x 65(D) x 196(H) mm (5.9 x 2.56 x 7.66 inch.)	
Weight (g)	1320 g	1350 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 55024, EN 55032), FCC Part 15B, EN 50155(EN 50121-1, EN 50121-3-2)	
EMI	EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15B class A	
EMS	EN 55024 (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 60950-1	
Other	EN 50155 (IEC 61373)	
MTBF	224,424 hours	210,870 hours
Warranty	5 years	

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