TGXS-1080-M12 Series

EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/500/1000Base-T(X), M12 connector

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provided 8x10/100/500/1000Base-T(X) ports
- Supports 9216 byte jumbo frame
- Supports dual power inputs for power redundancy
- Built-in 2 sets of bypass ports (-BP2 only)
- Support auto-negotiation and auto-MDI/MDI-X
- Support store and forward transmission
- Support flow control
- M12 connectors to guarantee reliable operation against environmental disturbances
- Rigid IP-30 housing design
- Wall mounting enabled

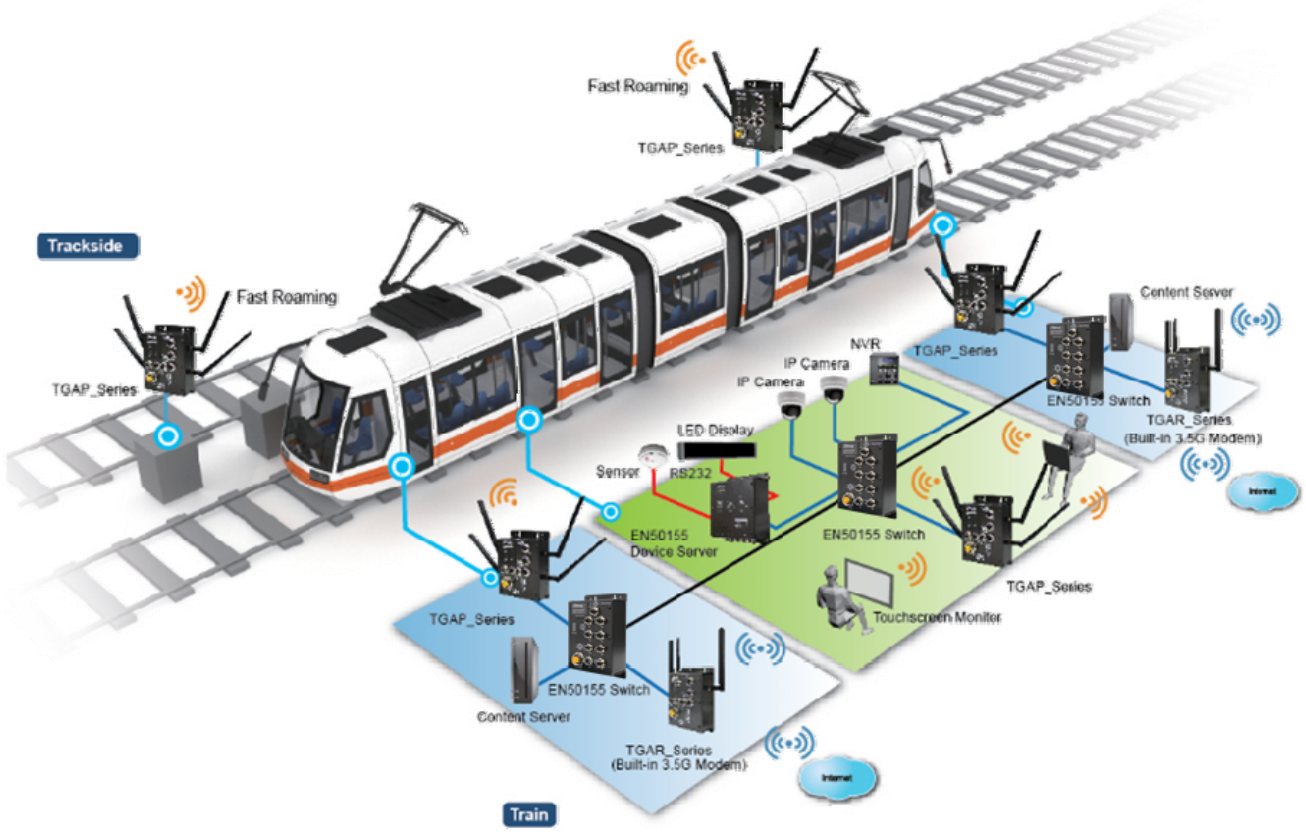
Introduction

ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TGXS-1080-M12 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 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-unmanaged Ethernet application.

While installing in the train, TGXS-1080-M12 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 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.

Practical Operation

TGXS-1080-M12 can be used in connecting several Ethernet devices like IP-Camera or other Ethernet devices. In addition, there are two different power inputs to avoid interruption caused by power down. When the primary DC power input fails, the backup power input will take over immediately to guarantee a non-stop operation.



Connections of Ethernet devices

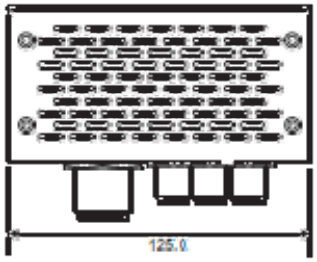
Pin Definition

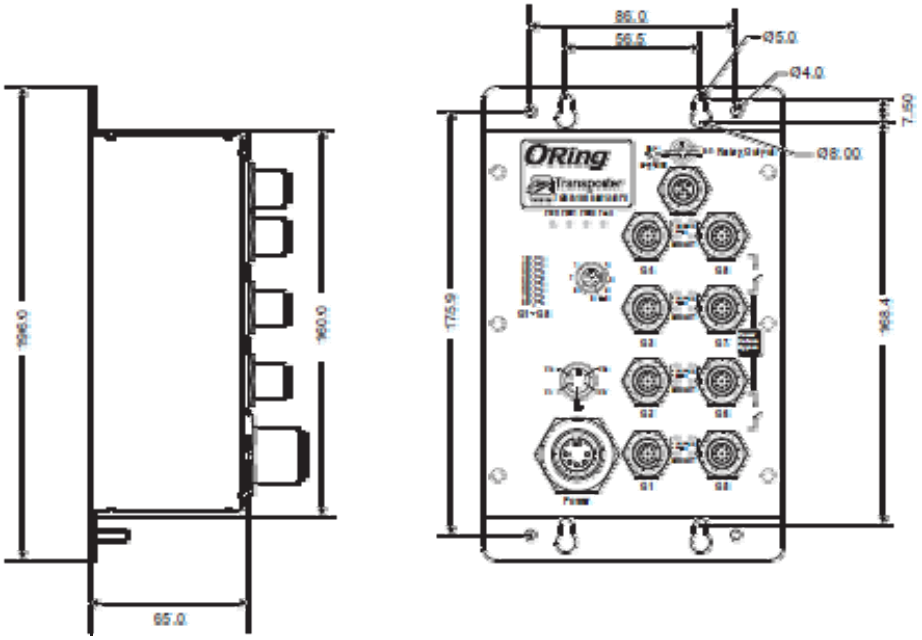
- 10/100/500/1000Base-T(X) M12 port

M12 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-

Dimension

Unit =mm (Tolerance ±0.5mm)





Specifications

ORing Switch Model	TGXS-1080-M12	TGXS-1080-M12-BP2
Physical Ports		
10/100/500/1000Base-T(X) Ports in M12	**8 x M12 connector (8-pin female A-coding)**	**8 x M12 connector (8-pin female A-coding, bypass function included by last 4 ports)**
Technology		
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	
LED indicators		
Power indicator	Green : Power LED x 3	
Fault indicator	Amber: Indicate PWR1 or PWR2 failure	

10/100/500/1000Base-T(X) M12 port indicator	Top for 10/100/1000Mbps port Link/Act indicator. Green for 1Gbps link, Amber for 10/100 Mbps link Bottom Amber for 500Mbps port Link/Act indicator	
Fault contact		
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin female A-coding)	
Power		
Redundant Input power	Dual DC inputs. 12~48VDC on 5-pin M23 connector	
Power consumption (Typ.)	7 Watts	
Overload current protection	Present	
Reverse polarity protection	Present	
Physical Characteristic		
Enclosure	IP-30	
Dimension (W x D x H)	125 (W) x 65 (D) x196 (H) mm	
Weight (g)	812 g	834 g
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 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 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	409156 hrs	256215 hrs
Warranty	5 years	

Ordering Information

TGXS-1AAB–M12–BP2

Code Definition	10/100/500/1000Base-T(X) Port Number	Additional Port Number
Option	**- 08:** 8 ports	**- 0:** 0 port

Available Model	Model Name	Description
	TGXS-1080-M12	EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/500/1000Base-T(X), M12 connector
	TGXS-1080-M12-BP2	EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/500/1000Base-T(X), M12 connector and 2xbypass included

Packing List

- **TGXS-1080-M12(-BP2) x 1**
- **Quick Installation Guide x 1**

Optional Accessories

- **M12C: M12 cable accessories**
- **Power Supply: SDR/NDR series**