

TGXS-1080-M12-MV SERIES

➤ **EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/500/1000Base-T(X), M12 connector, 110VDC power input**

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provide 8x10/100/500/1000Base-T(X) ports
- Built-in 2 sets of bypass ports (-BP2 model only)
- Built-in 24VDC@3A relay output for warning system
- 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



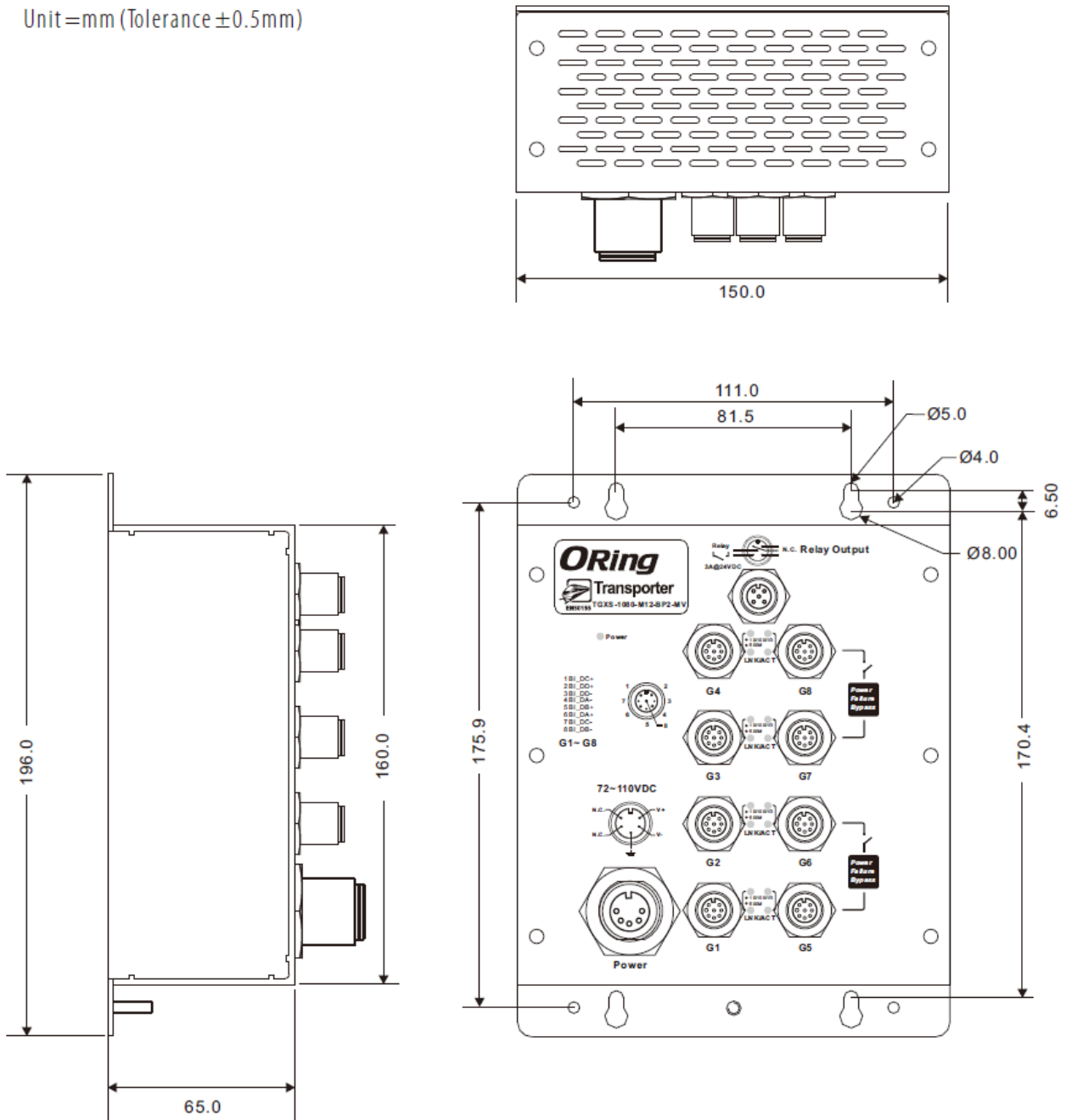
Introduction

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-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.

Dimensions

Unit = mm (Tolerance ±0.5mm)



Pin Definition

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



A-Coding M12

#6	#6	BI_DA+
	#7	BI_DC-
	#8	BI_DB-

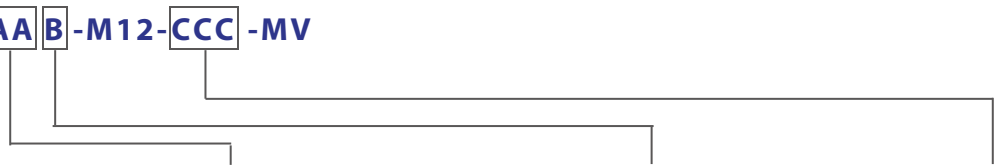
Specifications

ORing Switch Model	TGXS-1080-M12-MV	TGXS-1080-M12-BP2-MV
Physical Ports		
10/100/500/1000Base-T(X) Ports in M12 Auto MDI/MDIX	8 (8-pin female A-coding)	8 (8-pin female A-coding and 2-sets bypass function included)
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	
Packet buffer	1.5Mbits	
Processing	Store-and-Forward	
Switch Properties	Switching latency: <2.5 μ s Switching bandwidth: 16Gbps Throughput (packet per second): 11.905Mpps@64Bytes packet	
Jumbo frame	Up to 9216 Bytes	
LED indicators		
Power Indicator (Power)	Green: Power LED x 1	
10/100/500/1000Base-T(X) M12 Port Indicator	Top dual color LED for 10/100/1000Mbps port Link/Act indicator: Green on for 1Gbps link-up/active, Amber on for 10/100Mbps link-up/active. Middle Amber LED for 500Mbps port Link/Act indicator: On for link-up, Off for link-down, Blinking for active.	
Fault contact		
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin A-coding, female connector)	
Power		
Input power	72/110 (50.4-137.5) VDC on 5-pin 7/8-inch male connector	
Power consumption (Typ.)	≤13 Watts, 72VDC/0.16A (11W), 96VDC/0.13A (12W), 110VDC/0.12A (13W)	
Overload current protection	Present	
Reverse Polarity Protection	Present	
Physical Characteristic		
Enclosure	IP-30	
Dimension (W x D x H)	150 (W) x 65 (D) x196 (H) mm 5.91 (W) x 2.56 (D) x 7.72 (H) inch	
Weight (g)	1320 g	1350 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 55024, 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 55024 (IEC/EN 61000-4-2 (ESD: Contact 4KV, Air 8KV), IEC/EN 61000-4-3 (RS 80MHz to 1GHz: 3V/m 1kHz 80% AM), IEC/EN 61000-4-4 (EFT Power 0.5KV, Signal 0.5KV), IEC/EN 61000-4-5 (Surge: Power 0.5KV), IEC/EN 61000-4-6 (CS 150K-80MHz: 3Vrms 1kHz 80% AM), 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 (LVD) - Pending	
Other	EN 50155 (IEC 61373) – Pending	
MTBF	229,943 hrs.	172,182 hrs.
Warranty	5 years	

Ordering Information

TGXS-1 **AA** **B** -M12- **CCC** -MV



Code Definition	10/100/500/1000Base-T(X) Port Number	Additional Port Number	Additional Function
Option	-08: 8 ports	-0: 0 ports	-BP2: 2-sets bypass function included

Available Model	Model Name	Description
	TGXS-1080-M12-BP2-MV	EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/500/1000Base-T(X), M12 connector and 2xbypass included, 110VDC power input
	TGXS-1080-M12-MV	EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/500/1000Base-T(X), M12 connector, 110VDC power input
Packing List		Optional Accessories
<ul style="list-style-type: none"> TGXS-1080-M12(-BP2)-MV x 1 Quick Installation Guide x 1 		<ul style="list-style-type: none"> M12 cable series