

TGXPS-1080-M12-24V Series

➔ **EN50155 8-port unmanaged Gigabit PoE Ethernet switch with 8x10/100/500/1000Base-T(X) P.S.E., M12 connector, 24VDC power input**

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provide 8x10/100/500/1000Base-T(X) PoE (P.S.E.) ports
- Supports IEEE 802.3at compliant PoE with maximum 30Watts per port
- Support dual power inputs for power redundancy
- Built-in 2 sets of bypass ports (-BP2)
- 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



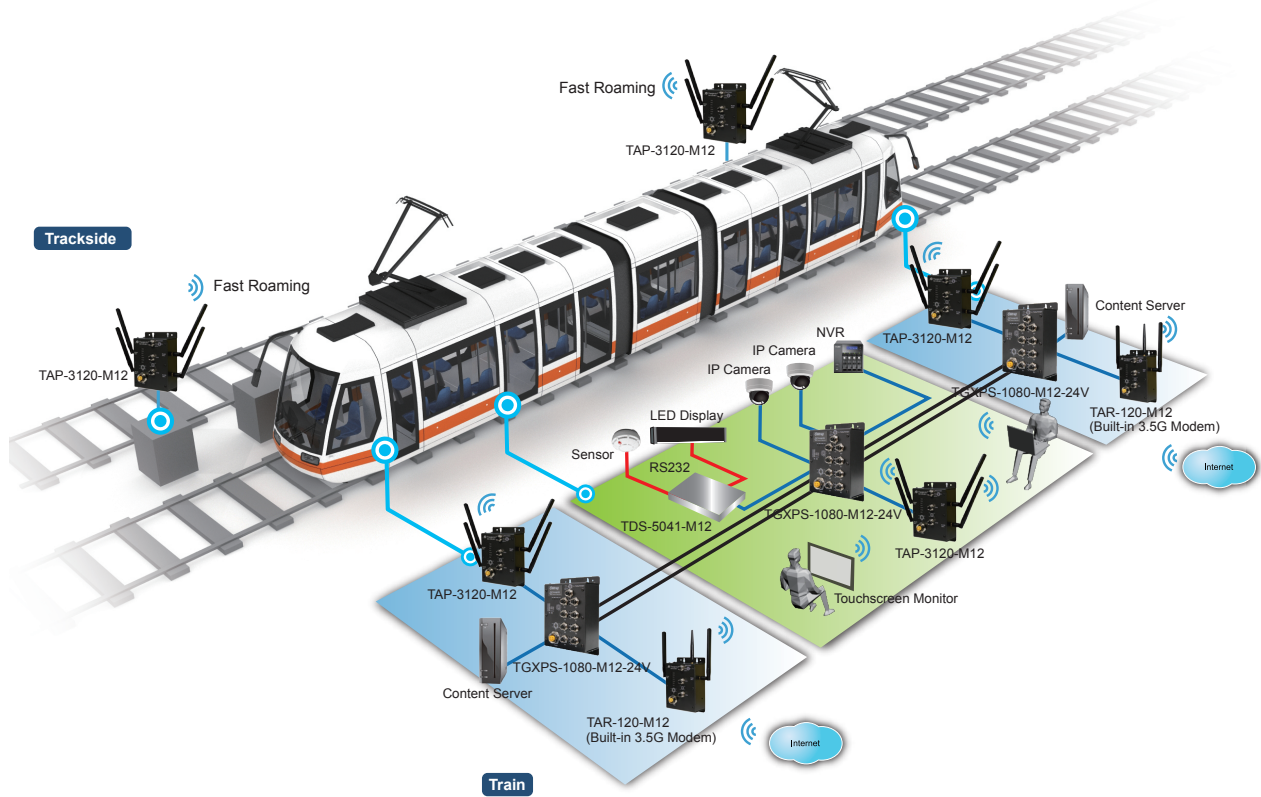
Introduction

ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TGXPS-1080-M12-24V is an un-managed PoE Ethernet switch with 8x10/100/500/1000Base-T(X) P.S.E. which is specifically designed for the toughest and fully compliant with EN50155 requirement. TGXPS-1080-M12-24V also supports Power over Ethernet, a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each TGXPS-1080-M12-24V switch has 8X10/100/500/1000Base-T(X) P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device (switch or hub for instance) that will provide power in a PoE setup. TGXPS-1080-M12-24V 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 PoE Ethernet application.

While installing in the train, TGXPS-1080-M12-24V is mainly used for in-train monitoring and Entertainment service due to its high speed Gigabit Ethernet connection and PoE capability. Devices connected will be IP camera or CCTV for the use of train surveillance. As an unmanaged Ethernet Switch, TGXPS-1080-M12-24V 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.

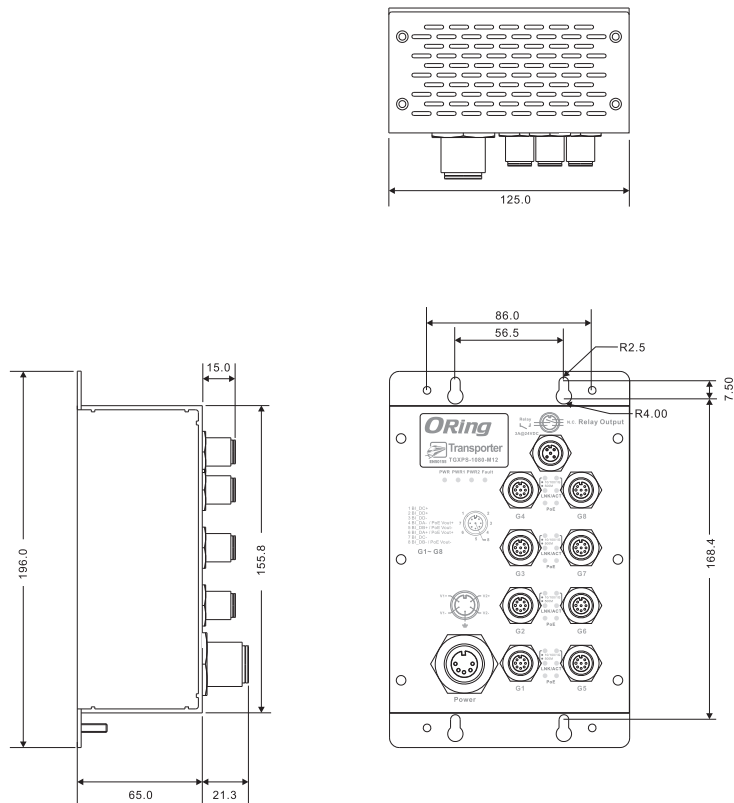
Practical Operation

TGXPS-1080-M12-24V can be used in connecting several PoE P.D. Ethernet devices like IP-Camera or other Ethernet devices. In addition, there are two different power inputs at terminal block 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.



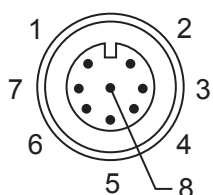
Connections of Ethernet devices

Dimensions



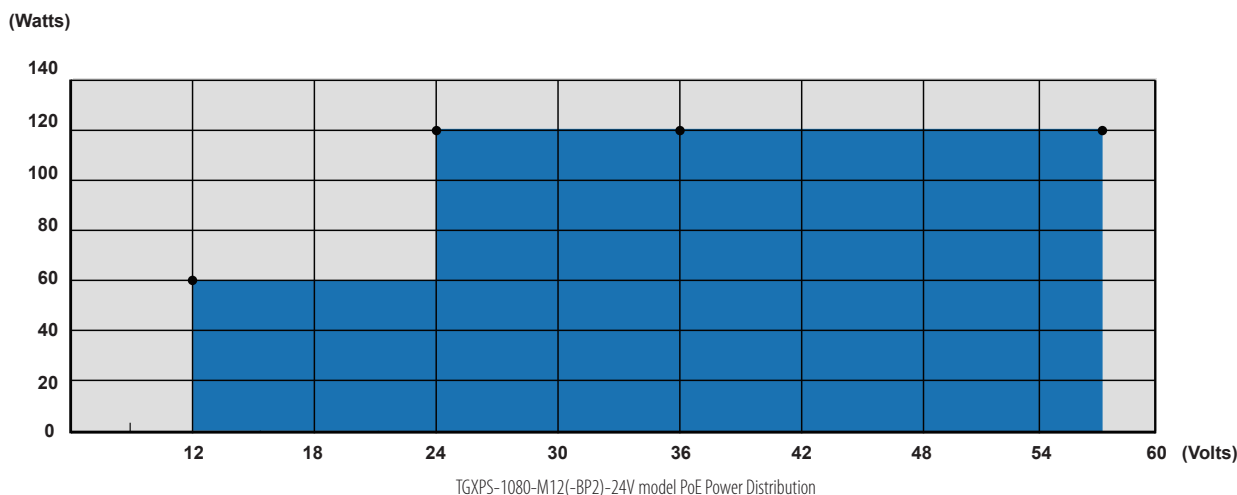
(Unit=mm)

Pin Definition



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

PoE Power Distribution



Specifications

ORing Switch Model	TGXPS-1080-M12-24V	TGXPS-1080-M12-BP2-24V
Physical Ports		
10/100/500/1000Base-T(X) Ports in M12 With P.S.E.	8 x M12 connector (8-pin A-coding)	8 x M12 connector (8-pin 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 IEEE 802.3at compliant PoE specification (Maximum 30Watts per port)	
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 and PoE indicator	Top for 10/100/1000Mbps port Link/Act indicator. Green for 1Gbps link, Amber for 10/100 Mbps link Middle Amber for 500Mbps port Link/Act indicator Bottom blue for PoE Injected indicator	

Fault contact	
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin A-coding)
Power	
Redundant Input power	Dual DC inputs. 24 (12~57VDC) VDC on 5-pin M23 connector
Power consumption (Typ.)	8 Watts (power consumption of P.S.E. is not included)
PoE Output Power	60 Watts (12~24VDC) / 120 Watts (24~57VDC)
Overload current protection	Present
Reverse polarity protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	125 (W) x 65 (D) x 196 (H) mm
Weight (g)	979 g 1001 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 15B, EN 50121-3-2 (EN 50155)
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
MTBF	442602 hrs 273770 hrs
Warranty	5 years

Ordering Information

TGXPS-1 AA B -M12-BP2-24V

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

Available Model	Model Name	Description
	TGXPS-1080-M12-24V	EN50155 8-port unmanaged Gigabit PoE Ethernet switch with 8x10/100/500/1000Base-T(X) P.S.E., M12 connector, 24VDC power inputs
	TGXPS-1080-M12-BP2-24V	EN50155 8-port unmanaged Gigabit PoE Ethernet switch with 8x10/100/500/1000Base-T(X) P.S.E., M12 connector and 2xbypass included, 24VDC power inputs

Packing List <ul style="list-style-type: none"> TGXPS-1080-M12-24V x 1 Quick Installation Guide x 1 	Optional Accessories <ul style="list-style-type: none"> M12C : M12 cable accessories
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