TGPS-1080-M12 Series

EN50155 8-port unmanaged Gigabit PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E., M12 connector

Features

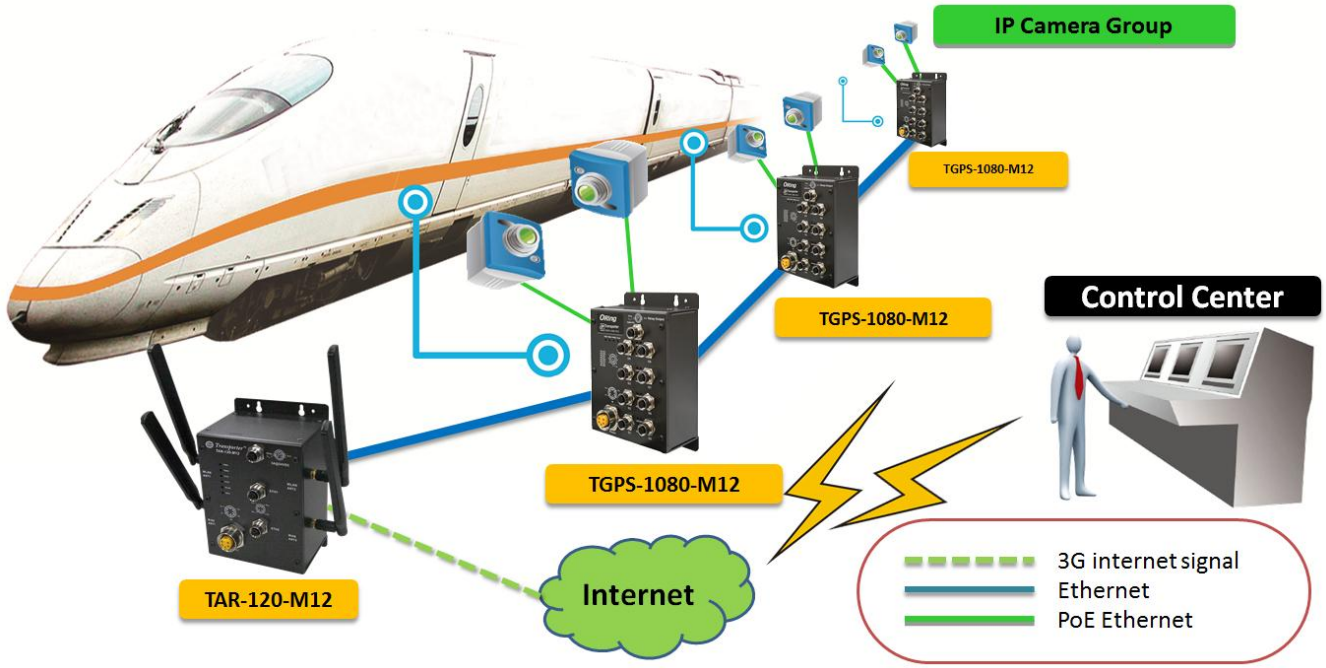
- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provide 8x10/100/1000Base-T(X) PoE (P.S.E.) ports
- Supports IEEE 802.3at compliant PoE with maximum 30Watts per port
- Support dual power inputs for power redundancy
- Support auto-negotiation and auto-MDI/MDI-X
- Support store and forward transmission
- Support flow control
- M12 connectors to guarantee reliable operation against environmental disturbances
- Rigid IP-40 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 TGPS-1080-M12 is an un-managed PoE Ethernet switch with 8x10/100/1000Base-T(X) P.S.E. which is specifically designed for the toughest and fully compliant with EN50155 requirement. TGPS-1080-M12 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 TGPS-1080-M12 switch has 8X10/100/1000Base-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. TGPS-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 70°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.

Practical Operation

TGPS-1080-M12 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

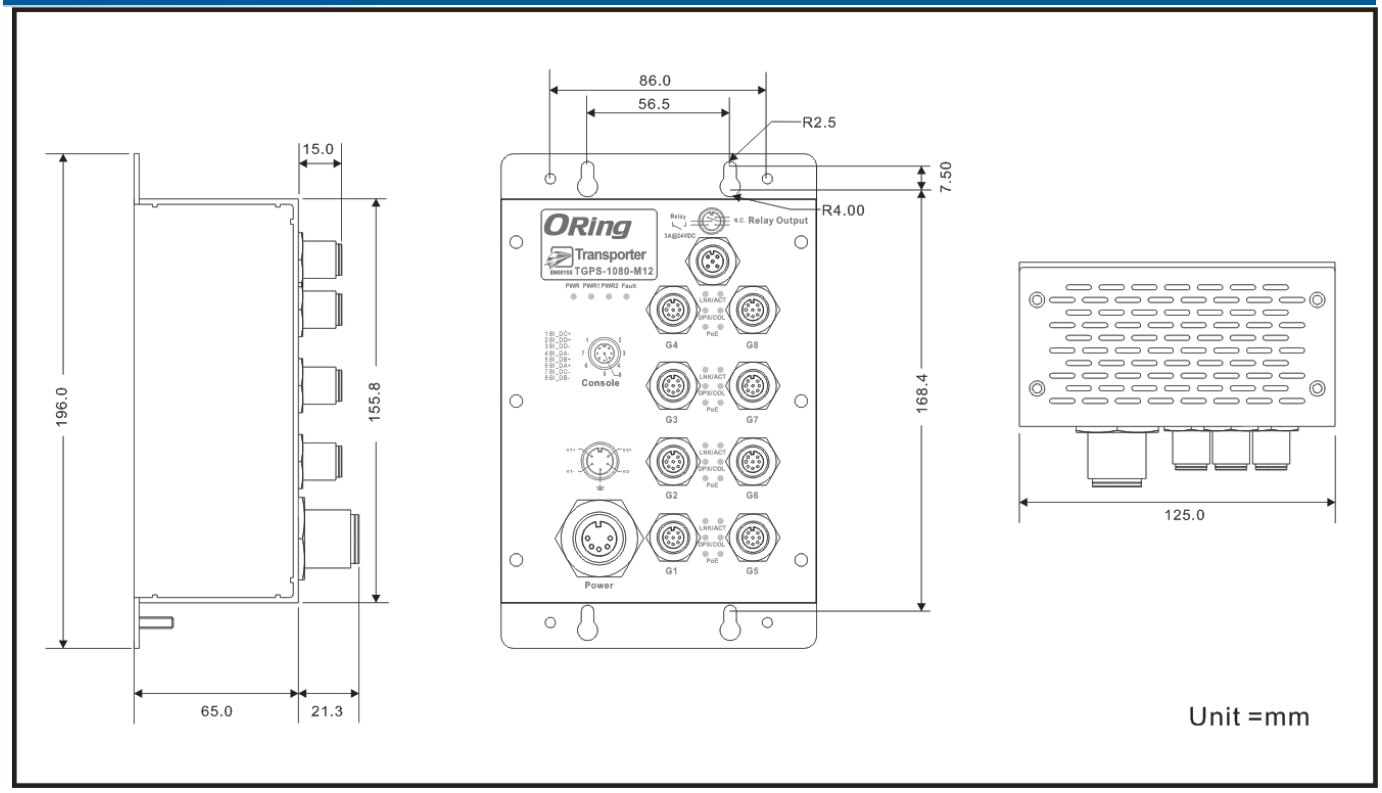
Pin Definition

- 10/100/1000Base-T(X) P.S.E. M12 port

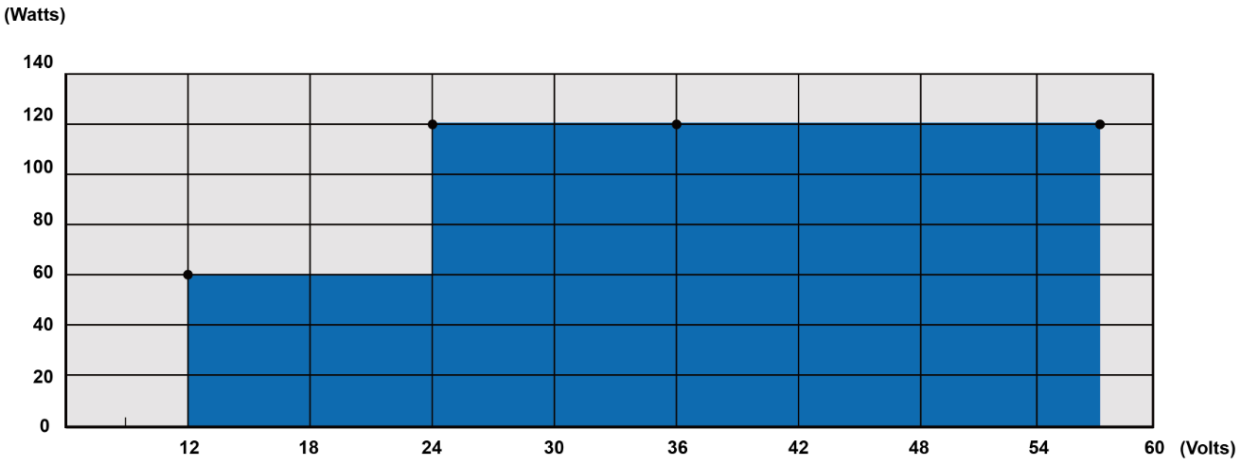
M12 Pin Definition	
Pin No.	Description
#1	BI_DC+
#2	BI_DD+
#3	BI_DD-
#4	BI_DA- / PoE Vout+

#5	BI_DB+ / PoE Vout-
#6	BI_DA+ / PoE Vout+
#7	BI_DC-
#8	BI_DB- / PoE Vout-

Dimension



PoE Power Distribution



TGPS-1080-M12-24V model PoE Power Distribution

Specifications

ORing Switch Model	TGPS-1080-M12	TGPS-1080-M12-24V
Physical Ports		
10/100/1000Base-T(X) Ports in M12 With P.S.E.	**8 x M12 connector (8-pin A-coding)**	
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	8K MAC addresses	
Processing	Store-and-Forward	
LED indicators		
Power indicator	Green : Power LED x 3	
Fault indicator	Amber : Indicate PWR1 or PWR2 failure	
10/100/1000Base-T(X) M12 port indicator and PoE indicator	Top for port Link/Act indicator. Green for 1Gbps link, Amber for 10/100 Mbps link Middle Amber for Duplex / Collision 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. 50~57VDC on 5-pin M23 connector	Dual DC inputs. 24 (12~57VDC) VDC on 5-pin M23 connector
Power consumption (Typ.)	6 Watts (power consumption of P.S.E. is not included)	11 Watts (power consumption of P.S.E. is not included)
PoE Output Power	240 Watts	60 Watts (12~24VDC) / 120 Watts (24~57VDC)
Overload current protection	Present	
Reverse polarity protection	NOT Present	
Physical Characteristic		
Enclosure	IP-40	
Dimension (W x D x H)	125 (W) x 65 (D) x196 (H) mm	
Weight (g)	930 g	988 g
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-40 to 70°C (-40 to 158°F)	
Operating Humidity	5% to 95% Non-condensing	
Regulatory approvals		
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)	
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11	
Shock	IEC60068-2-27	
Free Fall	IEC60068-2-32	
Vibration	IEC60068-2-6	
Warranty	5 years	

Ordering Information

TGPS-1AAB–M12

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

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

Packing List

- **TGPS-1080-M12 x 1**
- **Quick Installation Guide x 1**

Optional Accessories

- **M12C : M12 cable accessories**