



TGS-1080-M12 Series

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

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provide 8x10/100/1000Base-T(X) ports
- 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

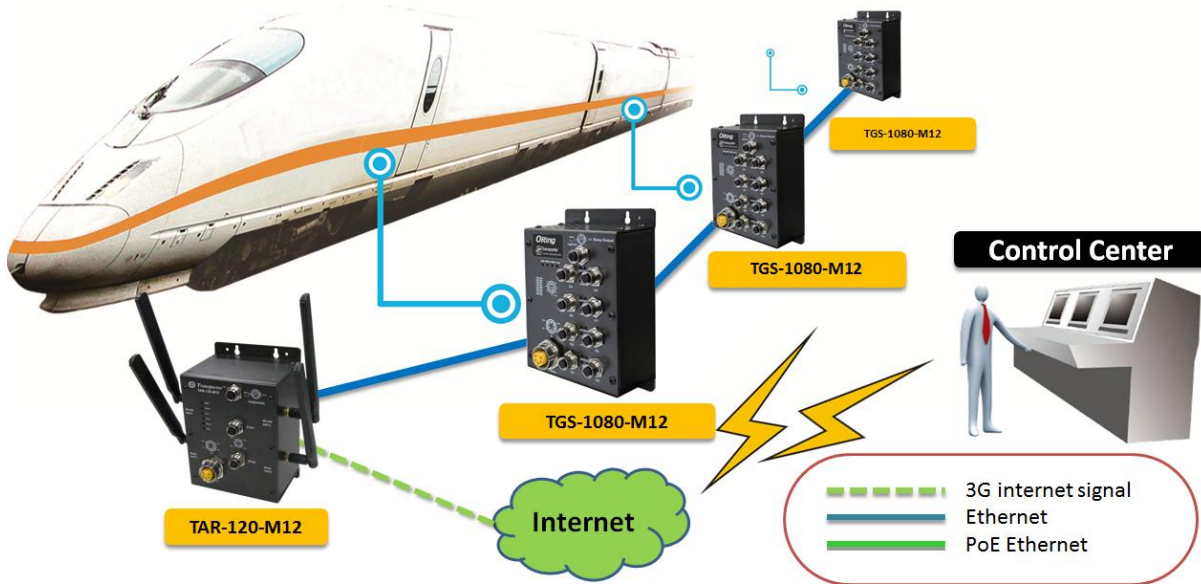


Introduction

ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TGS-1080-M12 is an un-managed Ethernet switch with 8x10/100/1000Base-T(X) which is specifically designed for the toughest and fully compliant with EN50155 requirement. Each TGS-1080-M12 switch has 8X10/100/1000Base-T(X) ports. TGS-1080-M12 EN50155 Ethernet switch uses 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 application.

Practical Operation

TGS-1080-M12 can be used for train backbone Ethernet connection. TGS-1080-M12 has 8-port Gigabit Ethernet ports which provides high transmission rate for any Ethernet devices connected to this Ethernet Switch. The designs of rugged housing and wide operating temperature range from -40 ~ 70°C, makes TGS-1080-M12 reliable in any kinds of transporter applications



Connections of Ethernet devices

Pin Definition



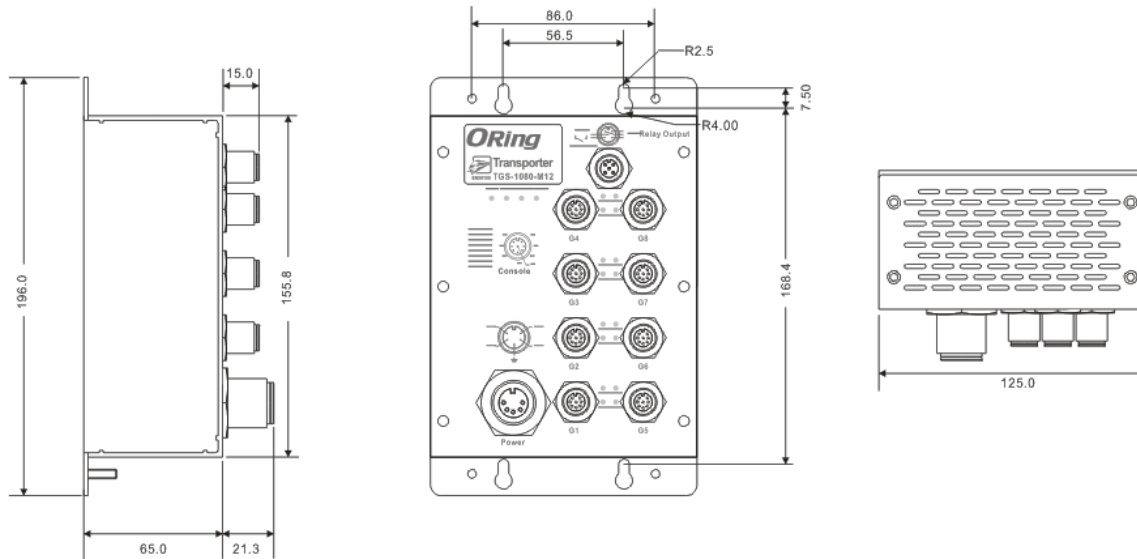
- 10/100/1000Base-T(X) M12 port

| 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

Dimension (Unit =mm)



Specifications

| ORing Switch Model | TGS-1080-M12 | TGS-1080-M12-MV |
|---|--|-----------------------|
| Physical Ports | | |
| 10/100/1000Base-T(X) Ports in M12 | 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 | |
| MAC Table | 8K MAC addresses | |
| Processing | Store-and-Forward | |
| LED indicators | | |
| Power indicator | Green : Power LED x 3 | Green : Power LED x 1 |
| Fault indicator | Amber : Indicate PWR1 or PWR2 failure | |
| 10/100/1000Base-T(X) M12 port indicator | Top for port Link/Act indicator. Green for 1Gbps link, Amber for 10/100 Mbps link Bottom Amber for Duplex / Collision 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. 12~48VDC on 5-pin M23 connector | 72~110VDC power input on 5-pin M23 connector |
| Power consumption (Typ.) | 2.88 Watts | 7.88 Watts |
| Overload current protection | Present | |
| Reverse polarity protection | Present | |
| Physical Characteristic | | |
| Enclosure | IP-40 | |
| Dimension (W x D x H) | 125 (W) x 65 (D) x196 (H) mm | |
| Weight (g) | 967 g | 1195 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, EN61373 | |
| Free Fall | IEC60068-2-32 | |
| Vibration | IEC60068-2-6, EN61373 | |
| Warranty | 5 years | |

Ordering Information

TGS-1AAB-M12

| | | |
|------------------------|----------------------------------|---|
| Code Definition | 10/100/1000Base-T(X) Port Number | Additional Port Number |
| Option | - 08: 8 ports | - 0: 0 port |
| Available Model | Model Name | Description |
| | TGS-1080-M12 | EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/1000Base-T(X), M12 connector |
| | TGS-1080-M12-MV | EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/1000Base-T(X), M12 connector, middle-voltage power input |

Packing List

- TGS-1080-M12 x 1
- Quick Installation Guide x 1

Optional Accessories

- M12C : M12 cable accessories