



TGS-1080-M12-BP2 Series

# TGS-1080-M12-BP2 Series

→ *EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/1000Base-T(X), M12 connector and 2xbypass included*

## Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Provide 8x10/100/1000Base-T(X) ports
- Support dual power inputs for power redundancy
- Built-in 2 sets of bypass ports
- 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

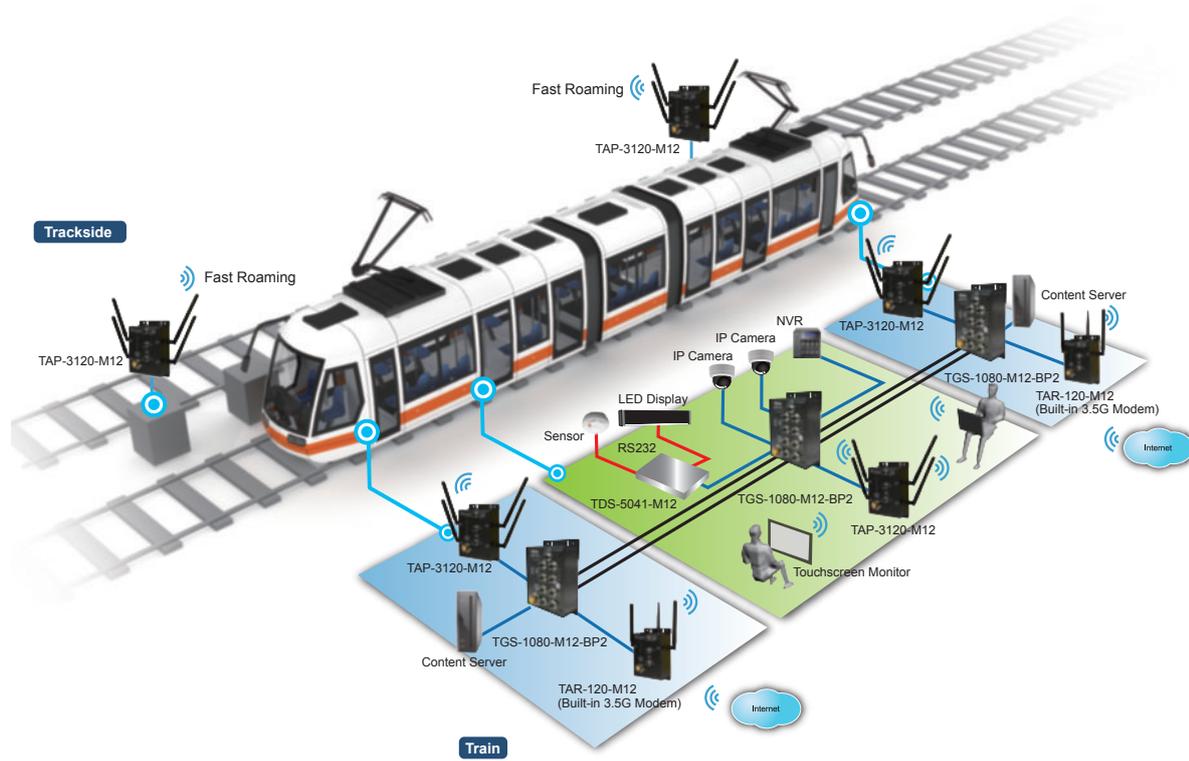


## Introduction

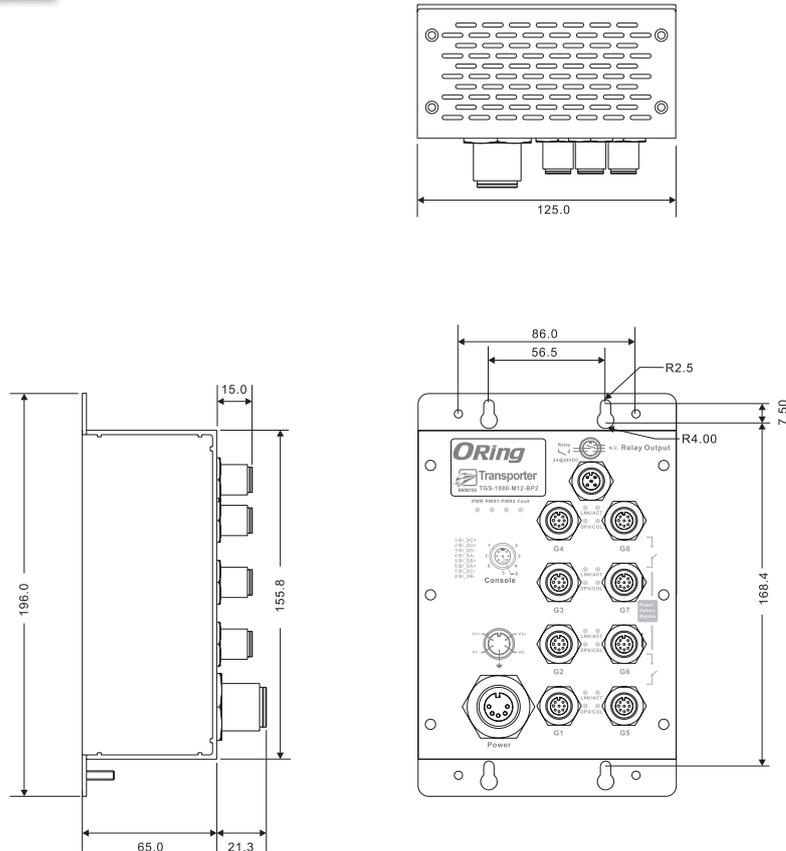
ORing's Transporter™ series un-managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TGS-1080-M12-BP2 is an un-managed Ethernet switch with 8x10/100/1000Base-T(X) which is specifically designed for the toughest and fully compliant with EN50155 requirement. Each TGS-1080-M12-BP2 switch has 8x10/100/1000Base-T(X) ports. TGS-1080-M12-BP2 EN50155 Ethernet switch uses M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. TGS-1080-M12-BP2 includes 2 sets of bypass ports that protect the network from failures and Network maintenance by ensuring network integrity during power loss. 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-BP2 can be used for train backbone Ethernet connection. TGS-1080-M12-BP2 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-BP2 reliable in any kinds of transporter applications



## Dimensions



(Unit=mm)

Industrial Ethernet Switch

Industrial Media Converter

Industrial Device Server

Industrial Wireless Access Point

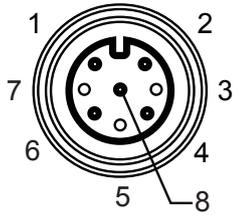
Industrial Cellular VPN Router

Industrial M2M Gateway

Accessories

Network Management Software

## 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-      |

## Specifications

| ORing Switch Model                      | TGS-1080-M12-BP2   | TGS-1080-M12-BP2-MV                          |
|---|--|--|
| <b>Physical Ports</b>                   |  |  |
| 10/100/1000Base-T(X) Ports in M12       | 8 x M12 connector (8-pin A-coding, bypass function included by last 4 ports)   |  |
| <b>Technology</b>                       |  |  |
| Ethernet Standards                      | IEEE 802.3 for 10Base-T<br>IEEE 802.3u for 100Base-TX<br>IEEE 802.3ab for 1000Base-T<br>IEEE 802.3x for Flow control               |  |
| MAC Table                               | 8K MAC addresses   |  |
| Processing                              | Store-and-Forward  |  |
| <b>LED Indicators</b>                   |  |  |
| 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<br>Bottom Amber for Duplex / Collision indicator |  |
| <b>Fault contact</b>                    |  |  |
| Relay                                   | Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin A-coding)  |  |
| <b>Power</b>                            |  |  |
| 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.)                | 6.24 Watts   | 11.24 Watts                                  |
| Overload current protection             | Present  |  |
| Reverse polarity protection             | Present  |  |
| <b>Physical Characteristic</b>          |  |  |
| Enclosure                               | IP-40  |  |
| Dimension (W x D x H)                   | 125 (W) x 65 (D) x 196 (H) mm  |  |
| Weight (g)                              | 1007   | 1235 g                                       |
| <b>Environmental</b>                    |  |  |
| 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-1 **AA** **B** -M12-BP2

| Code Definition | 10/100/1000Base-T(X) Port Number | Additional Port Number |
|-----------------|----------------------------------|------------------------|
| <b>Option</b>   | - <b>08</b> : 8 ports            | - <b>0</b> : 0 port    |

| Available Model  | Model Name  | Description   |
|--|---|---|
|  | TGS-1080-M12-BP2  | EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/1000Base-T(X), M12 connector and 2xbypass included |
| TGS-1080-M12-BP2-MV  | EN50155 8-port unmanaged Gigabit Ethernet switch with 8x10/100/1000Base-T(X), M12 connector and 2xbypass included, middle-voltage power input |   |
| <b>Packing List</b>  |   | <b>Optional Accessories (Can be purchased separately)</b>   |
| <ul style="list-style-type: none"> <li>TGS-1080-M12-BP2 x 1</li> <li>Quick Installation Guide x 1</li> </ul> |   | <ul style="list-style-type: none"> <li>M12C : M12 cable accessories</li> </ul>                                    |

- Industrial Ethernet Switch
- Industrial Media Converter
- Industrial Device Server
- Industrial Wireless Access Point
- Industrial Cellular VPN Router
- Industrial M2M Gateway
- Accessories
- Network Management Software