TGS-1080-M12-BP2 Series

TGS-1080-M12-BP2 Series

1

Industrial Ethernet Switch

➤ *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

Full Gigabit   EN50155   Redundant PWR   -40~70°C Temperature   RoHS   Lead Free   CE   FC
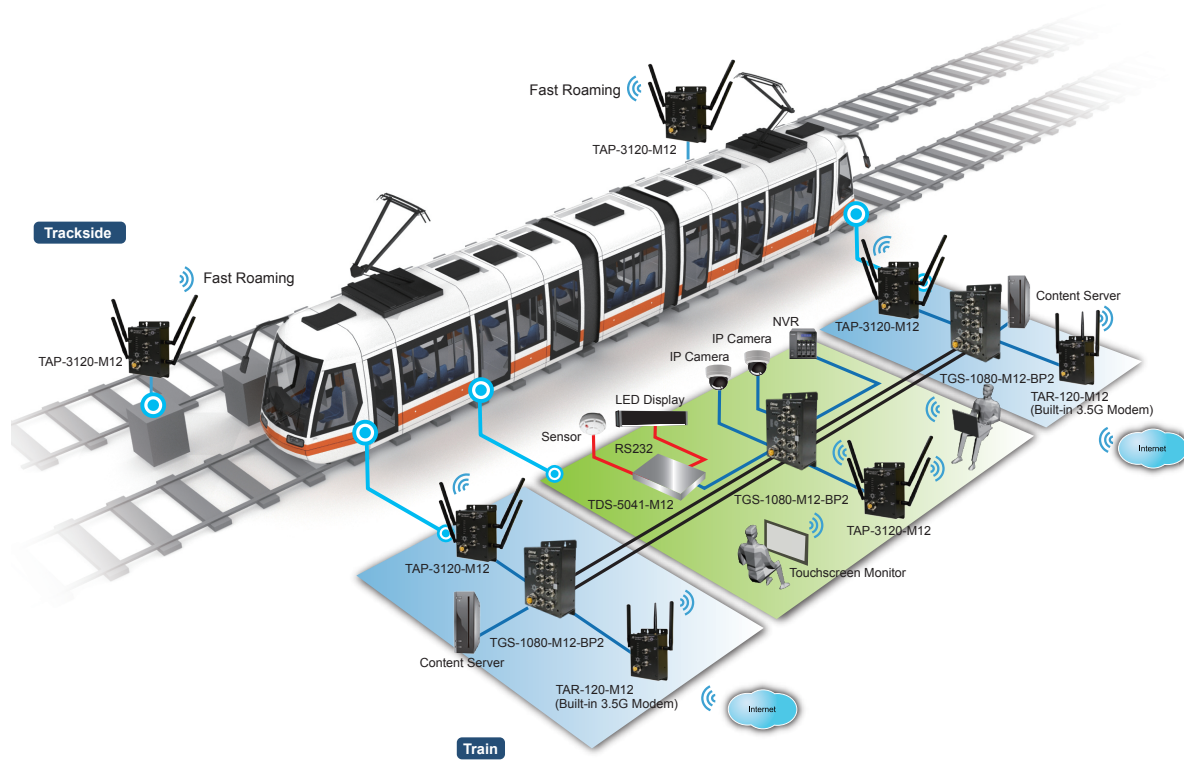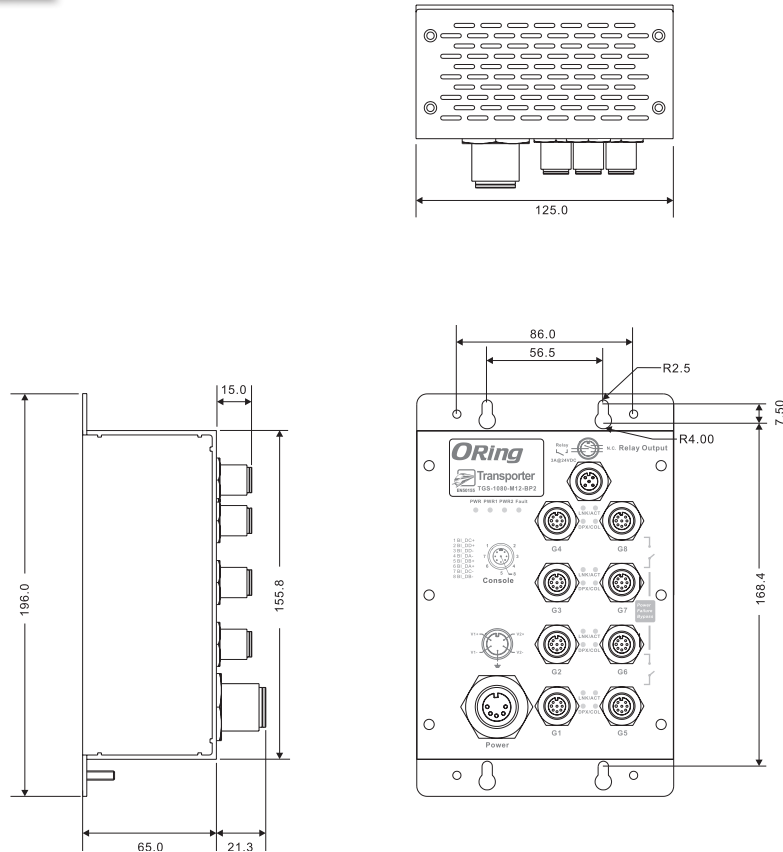
Introduction

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

Fast Roaming

TAP-3120-M12

Trackside

Fast Roaming

TAP-3120-M12

NVR

IP Camera

IP Camera

TAP-3120-M12

Content Server

Sensor

LED Display

RS232

TGS-1080-M12-BP2

TAR-120-M12
(Built-in 3.5G Modem)

Internet

TDS-5041-M12

TGS-1080-M12-BP2

TAP-3120-M12

Touchscreen Monitor

TAP-3120-M12

TGS-1080-M12-BP2

Content Server

TAR-120-M12
(Built-in 3.5G Modem)

Internet

Train

Dimensions

125.0

15.0

196.0

155.8

65.0   21.3

86.0

56.5

R2.5

R4.00

7.50

168.4

ORing

Transporter
TGS-1080-M12-BP2

PWR, PWR1 PWR2 Fault

n.c. Relay Output

Relay
24@24VDC

1 BI_DC+
2 BI_DD+
3 BI_DD-
4 BI_DB-
5 BI_DA+
6 BI_DA-
7 BI_DC-
8 BI_DB+

Console

G4   G8

G3   G7

G2   G6

Power   G1   G5

(Unit=mm)

Industrial
Ethernet Switch

Industrial
Media Converter

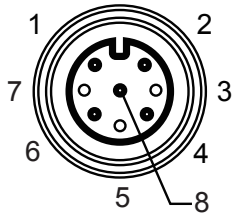Industrial
Device Server

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
Physical Ports		
10/100/1000Base-T(X) Ports in M12	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	
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.)	6.24 Watts	11.24 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)	1007	1235 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-1 AA B -M12-BP2

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

	Model Name	Description
Available Model	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

Packing List
- TGS-1080-M12-BP2 x 1
- Quick Installation Guide x 1

Optional Accessories (Can be purchased separately)
- M12C : M12 cable accessories

Industrial Ethernet Switch

Industrial Media Converter

Industrial Device Server

Industrial Wireless Access Point

Industrial Cellular VPN Router

Industrial M2M Gateway

Accessories

Network Management Software

X-ON Electronics

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