



TES-3080-M12-BP2 Series

TES-3080-M12-BP2 Series

➔ **EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector and 2xbypass included**

Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- World's fastest Redundant Ethernet Ring: **O-Ring** (recovery time < 10ms over 250 units of connection)
- **Open-Ring** supports the other vendor's ring technology in open architecture
- **O-Chain** allow multiple redundant network rings
- Support standard IEC 62439-2 **MRP^{NOTE}** (Media Redundancy Protocol) function
- STP/RSTP:2004/MSTP supported
- Support IPV6 new internet protocol version
- Supports **PTP Client** (Precision Time Protocol) clock synchronization
- Provided HTTPS/SSH protocol to enhance network security
- Support Modbus/TCP protocol
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Port Trunking for easy of bandwidth management
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Supports LLDP protocol
- Support TACACS+ and 802.1x User Authentication for security
- Port lock to prevent access from unauthorized MAC address
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Windows utility (**Open-Vision**) supports centralized management and configurable by Web-based, Telnet, and Console (CLI)
- M12 connectors to guarantee reliable operation against environmental disturbances
- Built-in 2 sets of bypass ports
- Wall mounting enabled



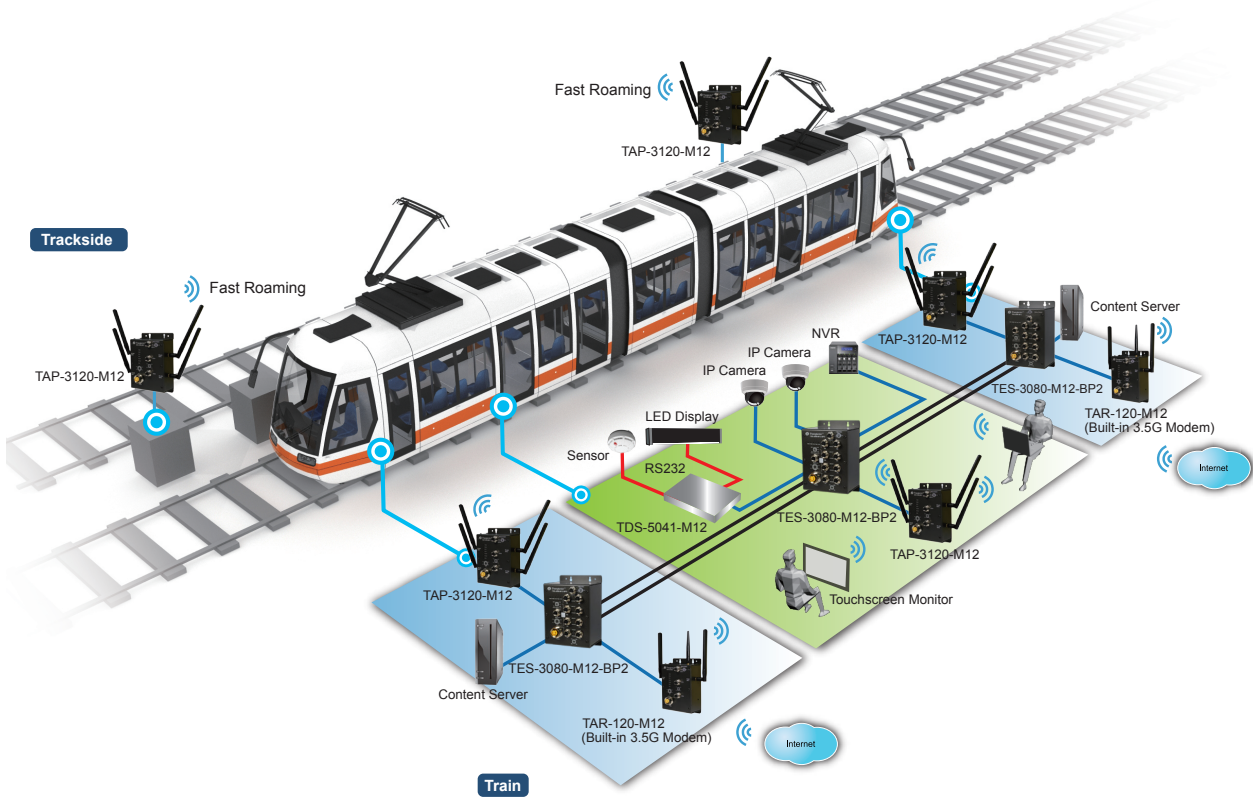
Introduction

ORing's Transporter™ series managed Ethernet switches are designed for industrial applications such as rolling stock, vehicle, and railway. The TES-3080-M12-BP2, which is compliant with the EN50155 standard, is a managed Redundant Ring Ethernet switch with 8x10/100Base-T(X) ports (4 of these ports also double as 2 sets of bypass ports). With complete support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-Chain and MSTP/RSTP:2004/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. Another Open-Ring technology is also supported which can applied for other vendor's proprietary ring. O-Chain is the revolutionary network redundancy technology that provides the add-on network redundancy topology for any backbone network, O-Chain allows multiple redundant network rings of different redundancy protocols to join and function together as a larger and more robust compound network topology. O-Chain providing ease-of-use while maximizing fault-recovery swiftness, flexibility, compatibility, and cost-effectiveness in one set of network redundancy topology. TES-3080-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. TES-3080-M12-BP2 includes 2 sets of bypass ports that protect the network from failures and Network maintenance by ensuring network integrity during power loss. TES-3080-M12-BP2 can be managed centralized and convenient by a powerful windows utility ~ Open-Vision. In addition, the wide operating temperature range from -40 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 Ethernet application.

***NOTE: This function is available by request only**

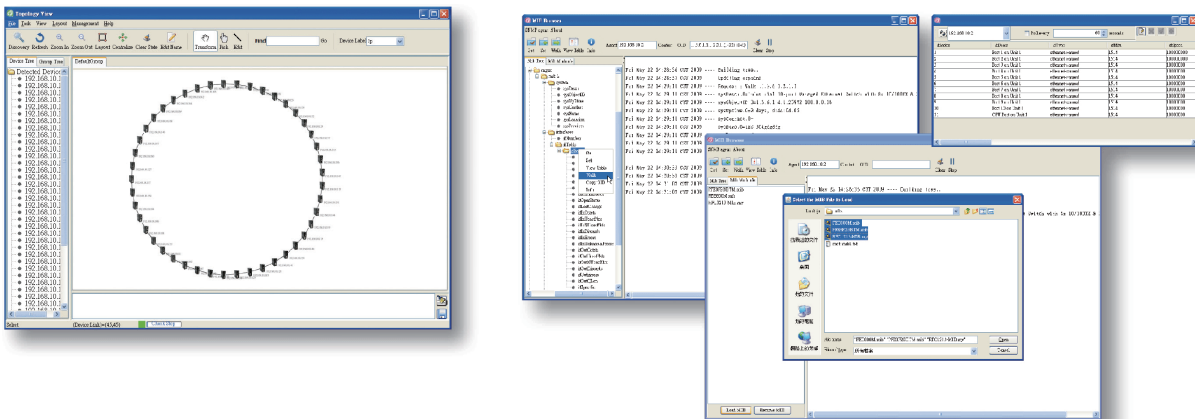
Practical Operation

Industrial Ethernet Switch

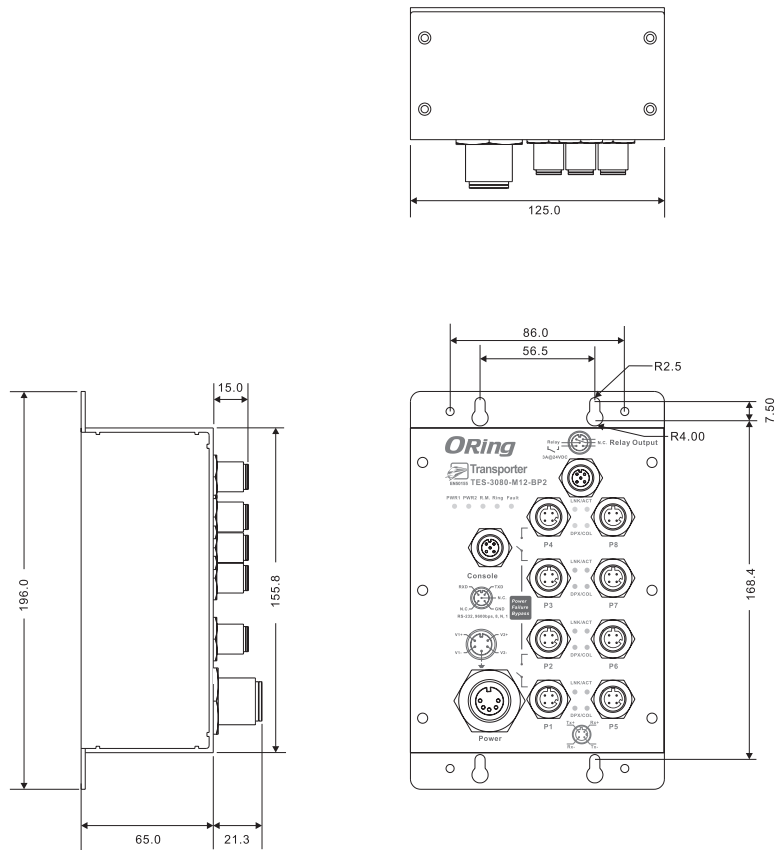


Open-Vision

ORing's switches are intelligent switches. Being different from other traditional redundant switches, ORing's managed and lite-managed switches feature a set of Windows utility (Open-Vision) for the user to manage and monitor all of industrial Ethernet switches on the industrial network.

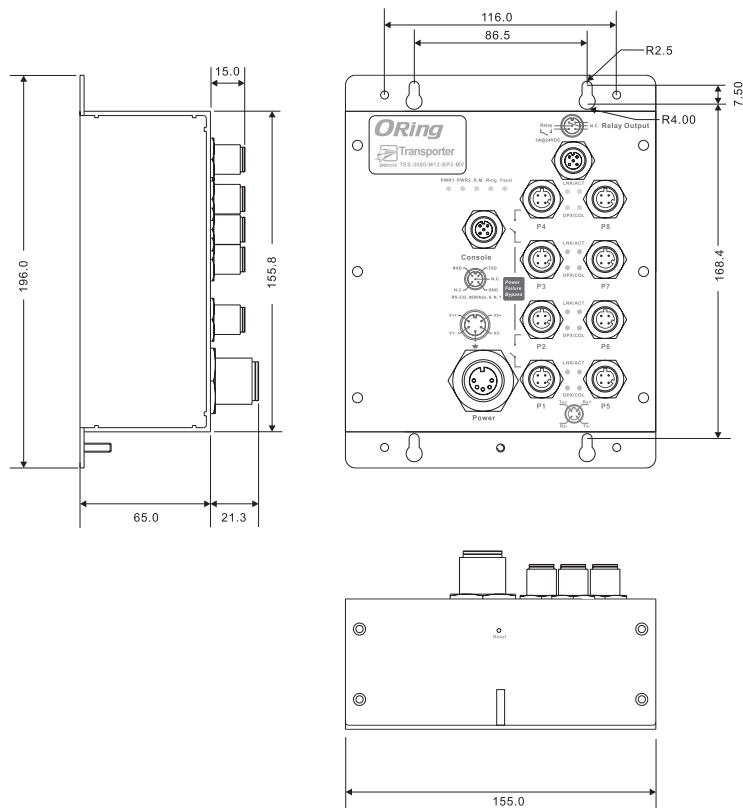


Dimensions



TES-3080-M12-BP2

Dimensions



TES-3080-M12-BP2-MV/HV

Specifications

| ORing Switch Model | TES-3080-M12-BP2 | TES-3080-M12-BP2-MV | TES-3080-M12-BP2-HV |
|---|---|---------------------|---------------------|
| Physical Ports | | | |
| 10/100 Base-T(X) Ports in M12 Auto MDI/MDIX | 8 x M12 connector (D-coding) | | |
| RS-232 Serial Console Port | RS-232 in M12 connector (A-coding). Baud rate setting: 9600bps, 8, N, 1 | | |
| Technology | | | |
| Ethernet Standards | IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3x for Flow control IEEE 802.3ad for LACP (Link Aggregation Control Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1D-2004 for RSTP:2004 (Rapid Spanning Tree Protocol 2004) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1s for MSTP (Multiple Spanning Tree Protocol) IEEE 802.1x for Authentication IEEE 802.1AB for LLDP (Link Layer Discovery Protocol) | | |
| MAC Table | 8192 MAC addresses | | |
| Priority Queues | 4 | | |
| Processing | Store-and-Forward | | |
| Switch Properties | Switching latency: 7 μs Switching bandwidth: 1.6Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define | | |
| Security Features | Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Supports Q-in-Q VLAN for performance & security to expand the VLAN space Radius centralized password management SNMP v1/v2c/v3 encrypted authentication and access security Https / SSH enhance network security | | |
| Software Features | STP/RSTP:2004/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units TOS/Diffserv supported Quality of Service (802.1p) for real-time traffic VLAN (802.1Q) with VLAN tagging and GVRP supported IGMP Snooping for multicast filtering Port configuration, status, statistics, monitoring, security SNTP for synchronizing of clocks over network Support PTP Client (Precision Time Protocol) clock synchronization DHCP Server / Client support Port Trunk support MVR (Multicast VLAN Registration) support Modbus TCP | | |
| Network Redundancy | O-Ring Open-Ring O-Chain STP RSTP:2004 MSTP | | |
| Warning / Monitoring System | Relay output for fault event alarming Syslog server / client to record and view events Include SMTP for event warning notification via email Event selection support | | |
| LED Indicators | | | |
| Power Indicator | Green : Power LED x 2 | | |
| R.M. Indicator | Green : Indicates that the system is operating in O-Ring Master mode | | |
| O-Ring Indicator | Green : Indicates that the system is operating in O-Ring mode | | |
| Fault Indicator | Amber : Indicates unexpected event occurred | | |
| 10/100Base-T(X) M12 Port Indicator | Green for port Link/Act. Amber for Duplex/Collision | | |

| Fault Contact | | | |
|-----------------------------|--|---------------------------------------|---|
| Relay | Relay output to carry capacity of 3A at 24VDC on M12 connector (A-coding) | | |
| Power | | | |
| Redundant Input Power | Dual 12~48VDC on 5-pin M23 connector | Dual 72~144VDC on 5-pin M23 connector | Dual 88~373VDC / 85~264VAC on 5-pin M23 connector |
| Power Consumption (Typ.) | 5 Watts | | |
| Overload Current Protection | Present | | |
| Reverse Polarity Protection | Present | | |
| Physical Characteristics | | | |
| Enclosure | IP-40 | | |
| Dimensions (W x D x H) | 125 (W) x 65 (D) x 196 (H)mm (4.92 x 2.56 x 7.72 inch) | 155 (W) x 65 (D) x 196 (H) | 155 (W) x 65 (D) x 196 (H) |
| Weight (g) | 894 g | 1304 g | 1304 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 | | |
| Safety | EN60950-1 | | |
| Warranty | 5 years | | |

Ordering Information

TES-3 **AA** **B** -M12-BP2-**CC**

| Code Definition | 10/100Base-T(X) Port Number | Additional Port Number | Power Input Type |
|-----------------|-----------------------------|------------------------|--|
| Option | - 08 : 8 ports | - 0 : 0 port | - MV : middle-voltage power input - HV : high-voltage power input |

| Available Model | Model Name | Description |
|-----------------|---------------------|--|
| | TES-3080-M12-BP2 | EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector and 2xbypass included |
| | TES-3080-M12-BP2-MV | EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector and 2xbypass included, middle-voltage power input |
| | TES-3080-M12-BP2-HV | EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector and 2xbypass included, high-voltage power input |

Packing List

- TES-3080-M12-BP2
- ORing Tool CD
- Quick Installation Guide
- Console Cable

Optional Accessories

- Open-Vision M500 : Powerful Network Management Windows utility Suit, 500 IP devices
- DR-45 series : 45 Watts DIN-Rail power supply
- DR-75 series : 75 Watts DIN-Rail power supply
- DR-120 series : 120 Watts DIN-Rail power supply
- M12C : M12 cable accessories