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

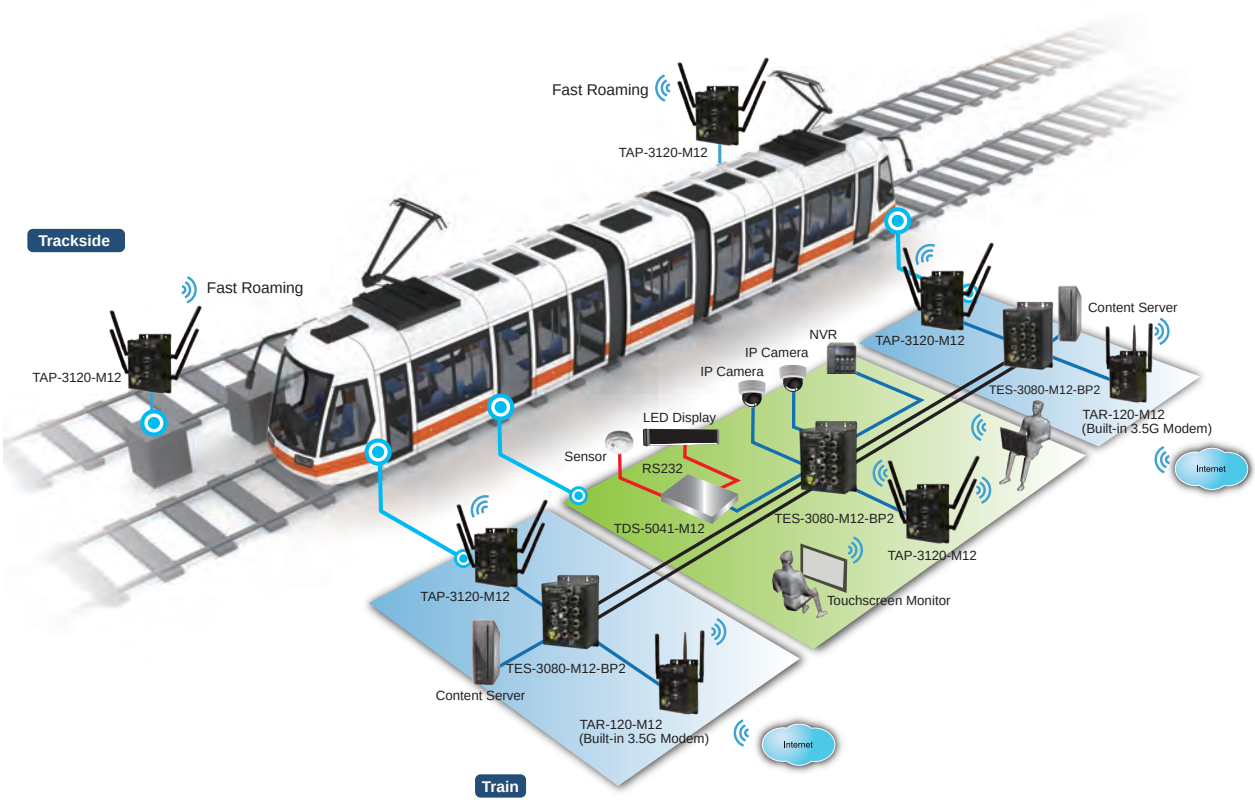
- Leading EN50155-compliant Ethernet switch for rolling stock application
- World's fastest Redundant Ethernet Ring: **O-Ring** (recovery time < 10ms over 250 units of connection)
- **Open-Ring** supports the other vendor's ring technology in open architecture
- **O-Chain** allow multiple redundant network 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.

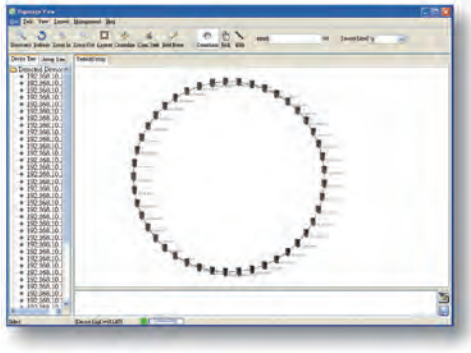
*NOTE: This function is available by request only

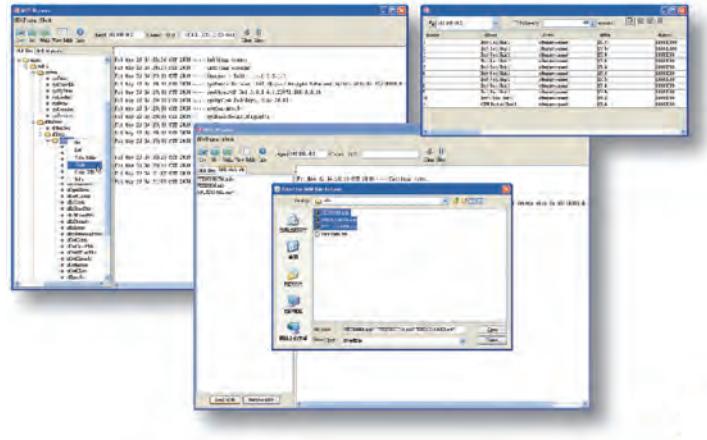
Practical Operation



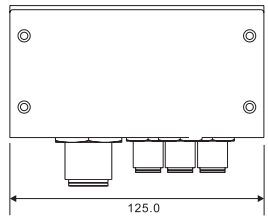
Open-Vision

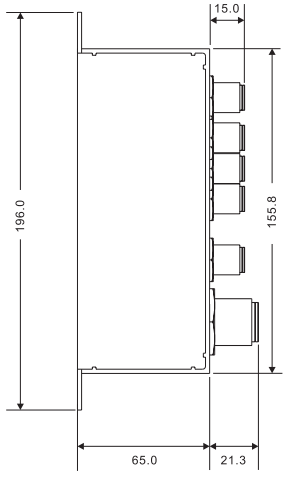
ORing's switches are intelligent switches. Being different from other traditional redundant switches, ORing's managed and lite-managed switches feature a set of Windows utility (Open-Vision) for the user to manage and monitor all of industrial Ethernet switches on the industrial network.

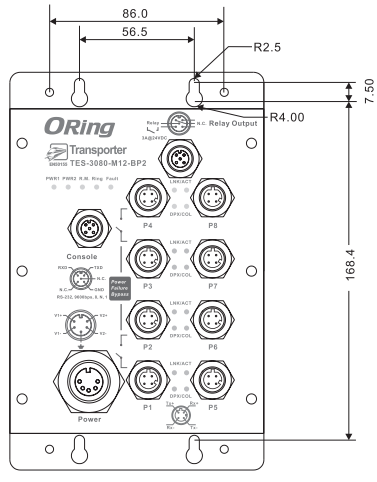




Dimensions

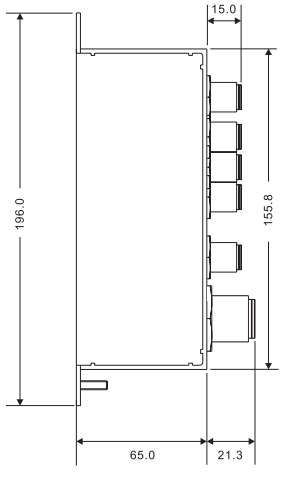


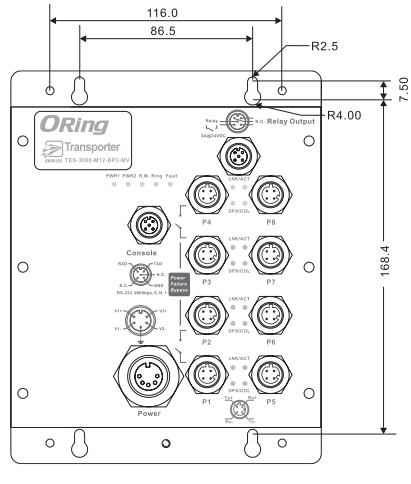


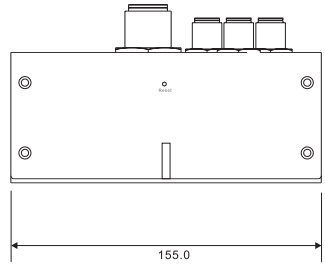


TES-3080-M12-BP2

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

	Model Name	Description
Available Model	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