TES-3080-M12(-BP2) SERIES

ORing WEB-site

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
- Supports O-Ring (recovery time < 10ms over 250 units of connection) and MSTP/RSTP/STP for Ethernet Redundancy
- O-Chain allow multiple redundant network rings
- Supports standard IEC 62439-2 MRP*NOTE (Media Redundancy Protocol) function
- Supports Modbus TCP protocol
- Supports PTP Client (Precision Time Protocol) clock synchronization
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Supports SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Port Trunking for easy of bandwidth management
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Supports LLDP Protocol
- 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 (-BP2 model only)
- Wall mounting enabled



EN50155 | O-Ring | O-Chain | Redundant PWR | -40~75°C Temperature | CE | FC | LEAD FREE

Introduction

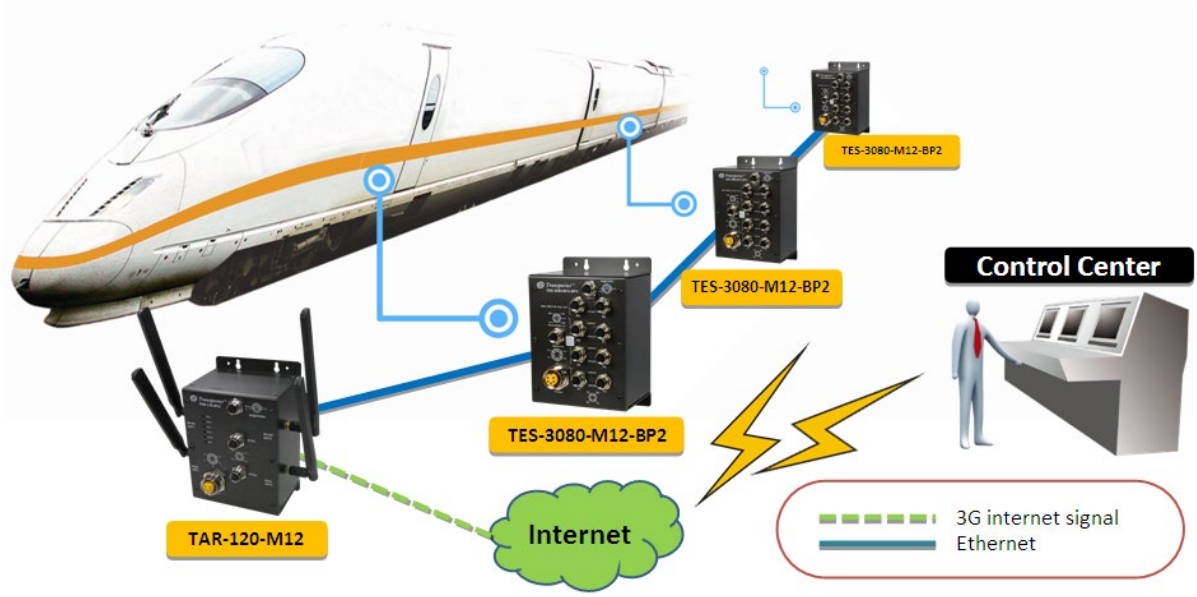
ORing's Transporter™ series managed Ethernet switches are designed for industrial applications such as rolling stock, vehicle, and railway. The TES-3080-M12(-BP2) series, which is compliant with the EN50155 standard, is a managed Redundant Ring Ethernet switch with 8x10/100Base-T(X) ports. With complete support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), O-Chain, MRP*NOTE and MSTP/RSTP/STP (IEEE 802.1s/w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technology. 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) series 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) series can be managed centralized and convenient by a powerful windows utility ~ Open-Vision. In addition, the wide operating temperature range from -40°C to 75°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.

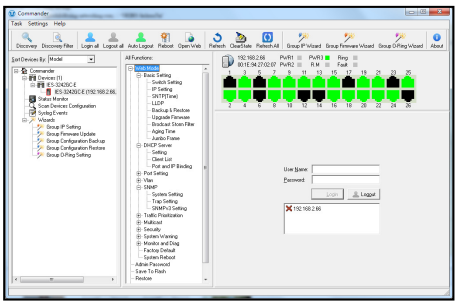
***NOTE: This function is available by request only**

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

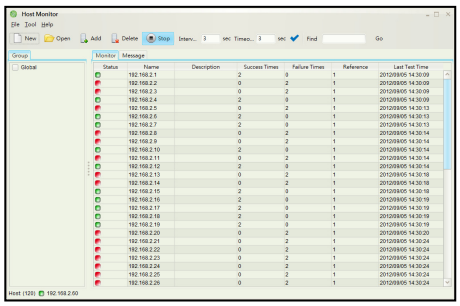
Open-Vision

ORing's switches are intelligent switches. Different from other traditional redundant switches, ORing provides a set of Windows Utility (Open-Vision) for user to manage and monitor all of industrial Ethernet switches on the industrial network.

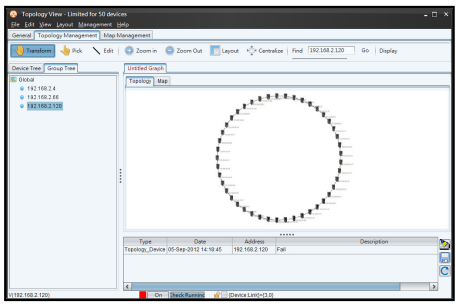




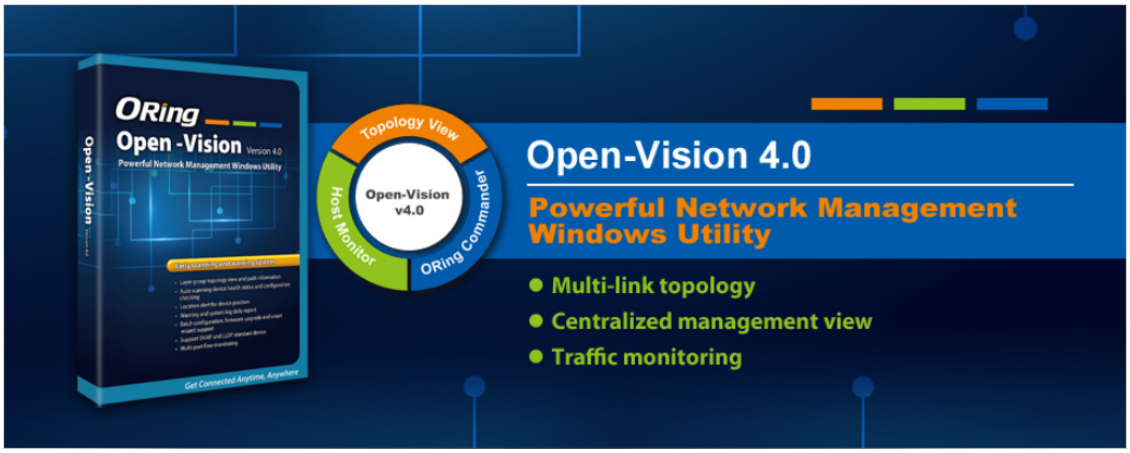
Commander



Host Monitor



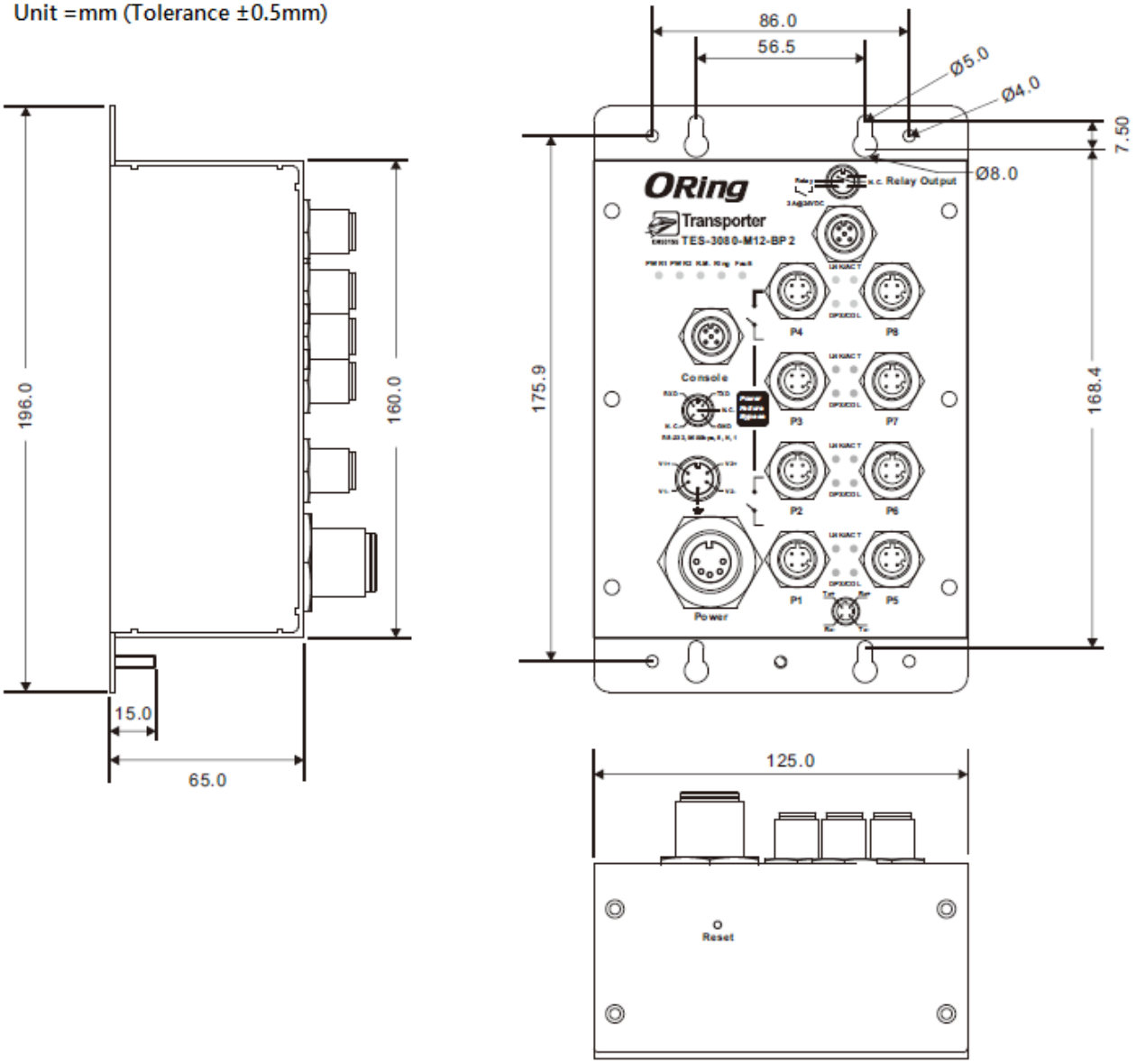
Topology View



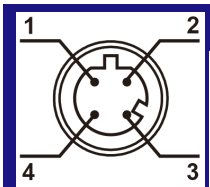
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Dimensions

Unit =mm (Tolerance ±0.5mm)



Pin Definition



D-Coding M12

10/100Base-T(X) M12 port	
Pin No.	Description
#1	Tx+
#2	Rx+
#3	Tx-
#4	Rx-

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Specifications

ORing Switch Model	TES-3080-M12-BP2	TES-3080-M12
Physical Ports		
10/100Base-T(X) Ports in M12 Auto MDI/MDIX	8 (4-pin female D-coding with 2 * bypass included)	8 (4-pin female D-coding)
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 802.1D for STP (Spanning Tree Protocol) IEEE 802.1p for COS (Class of Service) IEEE 802.1Q for VLAN Tagging 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	8k	
Packet Buffer Size	1Mbit	
Priority Queues	4	
Processing	Store-and-Forward	
Switch Properties	Switching latency: 7us Switching bandwidth: 1.6 Gbps 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	
Software Features	STP/RSTP/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	
Network Redundancy	O-Ring O-Chain MRP*NOTE STP/RSTP/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 (Power)	Green: Power LED x 2	
Ring Master Indicator (R.M.)	Green: Indicates that the system is operating in O-Ring Master mode	
O-Ring Indicator (Ring)	Green: Indicates that the system operating in O-Ring mode Green Blinking: Indicates that the Ring is broken.	
Fault Indicator (Fault)	Red: Indicate unexpected event occurred	
10/100Base-T(X) M12 Port Indicator	Green for port Link/Act: On for link-up, Off for link-down, Blinking for Act. Amber for Duplex/Collision: On for Full-Duplex, Off for Half-Duplex, Blinking for Half-Duplex and collision occurs	
Fault Contact		
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin A-coding, female connector)	

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

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Reset Function		
Reset Button	< 5 sec: System reboot, > 5 sec: Factory default	
Power		
Input Power	Dual 12-48VDC on 5-pin M23 female connector ***NOTICE: For EN50155 applications, it supports 24VDC power input only.**	
Power Consumption (Typ.)	5 Watts	
Overload Current Protection	Present	
Reverse Polarity Protection	Present	
Physical Characteristic		
Enclosure	IP-30	
Dimension (W x D x H)	125 (W) x 65 (D) x 196 (H) mm 4.92 (W) x 2.56 (D) x 7.72 (H) inch	
Weight (g)	894 g	
Environmental		
Storage Temperature	-40 to 85°C (-40 to 185°F)	
Operating Temperature	-40 to 75°C (-40 to 167°F)	
Operating Humidity	5% to 95% non-condensing	
Regulatory Approvals		
EMC	CE EMC (EN 55024, EN 55022), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2)	
EMI	EN 55022, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A	
EMS	EN 55024 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-8(PFMF), IEC/EN 61000-4-11 (DIP))	
Shock	IEC60068-2-27	
Free Fall	IEC60068-2-31	
Vibration	IEC60068-2-6	
Safety	EN 60950-1	
Other	EN 50155 (IEC 61373)	
MTBF	772743.7657 hrs.	815272.4837 hrs.
Warranty	5 years	

Ordering Information

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

Packing List
- TES-3080-M12(-BP2) x 1
- ORing Tool CD x 1
- Quick Installation Guide x 1

Optional Accessories
- Open-Vision M500: Powerful Network Management Windows Utility Suit, 500 IP devices
- M12 cable series
- Power supply series

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000