

# TES-250-M12



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## ➔ EN50155 5-port lite-managed Ethernet switch with 5x10/100Base-T(X), M12 connector

### Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Fastest Redundant Ethernet Ring: **O-Ring** (recovery time < 10ms over 250 units of connection)
- **Open-Ring** support the other vendor's ring technology in open architecture
- **O-Chain** support the multiple redundant ring technology
- Provides **Fast recovery technology** for Ethernet multi-redundancy
- Supports STP/RSTP standard redundant protocol
- SNMP v1/v2c/v3 support for secured network management
- Supports LLDP protocol
- Configurable by Web-based interface and Windows utility (Open-Vision)
- Event notification through Syslog, Email, and SNMP trap
- Ultra-rugged enclosure M12 connector for toughest industrial usages
- Wall mounting enabled

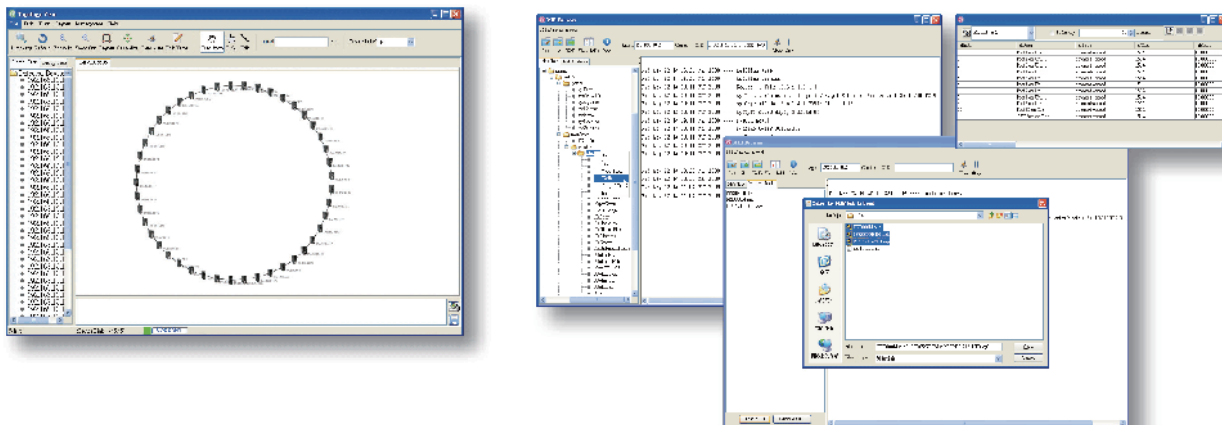
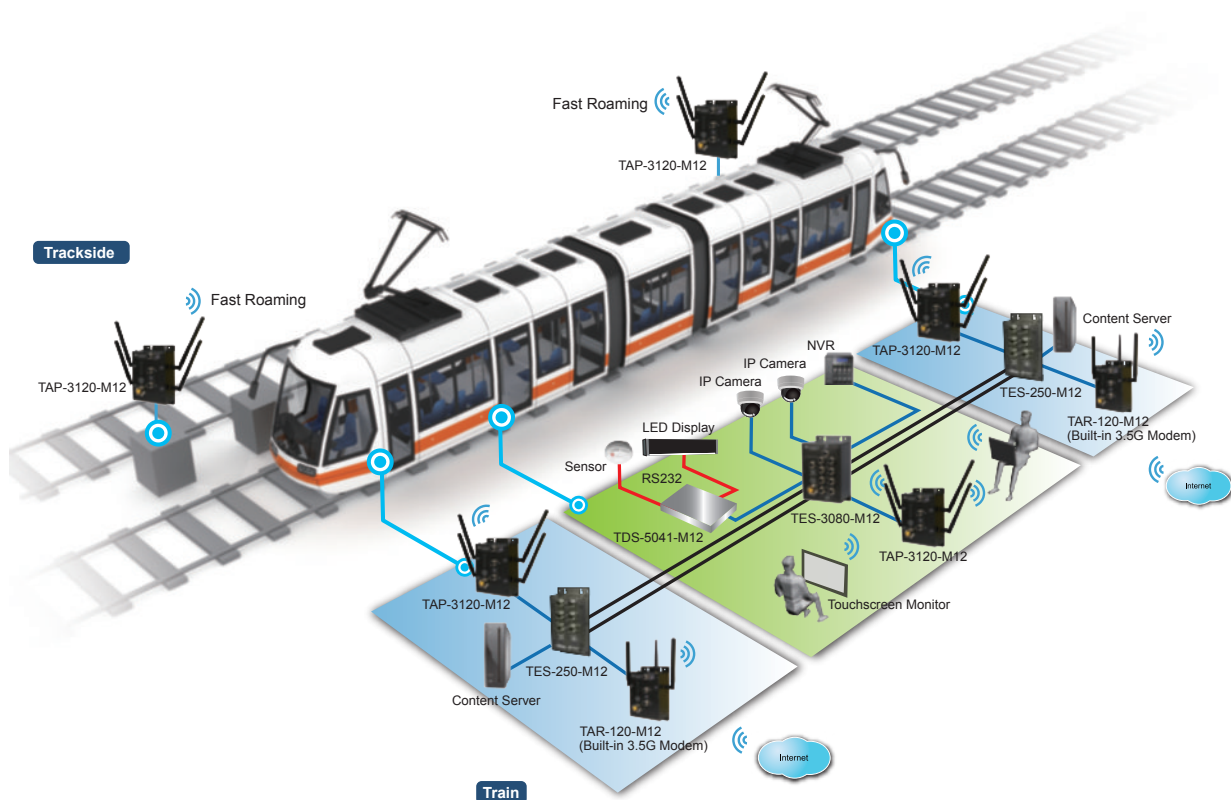


### Introduction

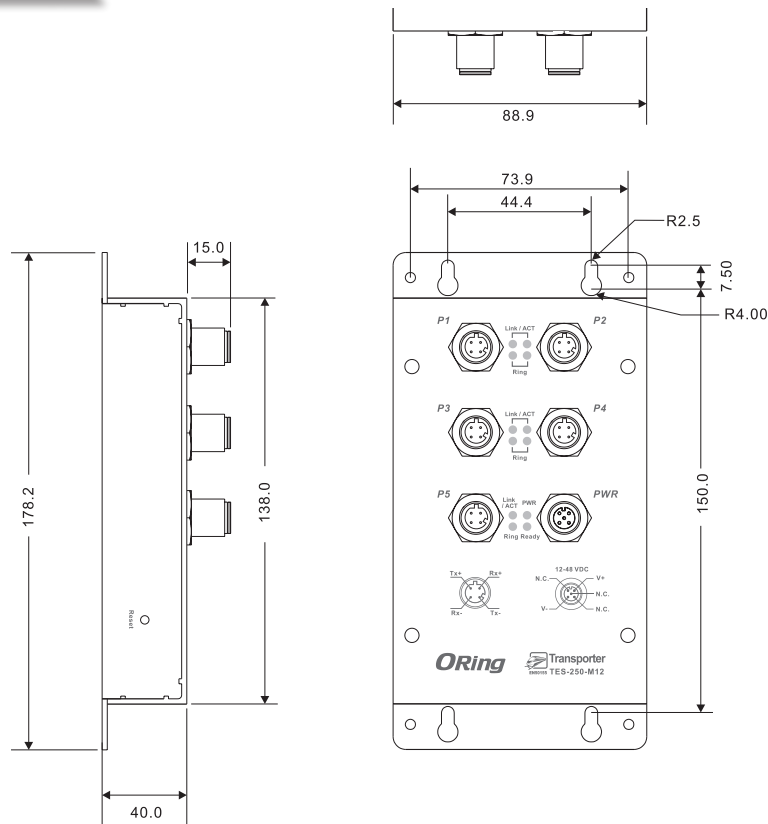
ORing's Transporter series Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. TES-250-M12 is a lite-managed redundant ring Ethernet switch with 10/100Base-T(X) ports which is compliant with EN50155 request. With complete support of Ethernet redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring, O-Chain and STP/RSTP(IEEE802.1w/D) can protect your mission-critical applications from network interruptions or temporary malfunctions with its fast recovery technologies. It is specifically designed for the toughest industrial environments. TES-250-M12 EN50155 Ethernet switch uses M12 connectors to ensure tight, robust connections and guarantees reliable operation against environmental disturbances, such as vibration and shock. TES-250-M12 can be managed centralized by a powerful windows utility — Open-Vision. In addition, the wide operating temperature range from -40~70°C can satisfy most of operating environment. The TES-250-M12 can be easily adopted in almost all kinds of applications and provides the most rugged solutions for managing your network. Therefore, the switch is one of the most reliable choices for rolling stock and highly-managed Ethernet applications.

## 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



Specifications

ORing Switch Model	TES-250-M12
Physical Ports	
10/100 Base-T(X) Ports in M12 Auto MDI/MDIX	5 x M12 connector (D-coding)
Technology	
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3x for Flow control IEEE 802.1D for STP (Spanning Tree Protocol) IEEE 802.1w for RSTP (Rapid Spanning Tree Protocol) IEEE 802.1AB for LLDP (Link Layer Discovery Protocol)
MAC Table	1024 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching bandwidth: 1.0Gbps VLAN: Port Based
Security Features	Enable/Disable ports VLAN to segregate and secure network traffic SNMP v3 encrypted authentication and access security
Software Features	STP/RSTP (IEEE 802.1D/w) Redundant Ring (O-Ring) with recovery time less than 10ms over 250 units Port configuration, status, statistics, monitoring, security
Network Redundancy	O-Ring Open-Ring O-Chain Fast recovery STP
LED Indicators	
Power Indicator	Green : Power LED x 1

Ring Master Indicator	Green : Indicate system operated in O-Ring Master mode
O-Ring Indicator	Amber : Indicate port operated in O-Ring mode (per port)
10/100Base-T(X) RJ45 Port Indicator	Green for port Link/Act. (per port)
<b>Power</b>	
Input Power	12~ 48 VDC power input in 5-pin M12 connector (A-coding)
Power Consumption (Typ.)	3 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present
<b>Physical Characteristics</b>	
Enclosure	IP-40
Dimensions (W x D x H)	88.9 (W) x 40 (D) x 178.2 (H)mm(3.5 x 1.57 x 7 inch)
Weight (g)	375g
<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

<b>Regulatory Approvals</b>	
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-2 **A** **B** -M12

Code Definition	10/100Base-T(X) Port Number	Additional Port Number
<b>Option</b>	- <b>5</b> : 5 ports	- <b>0</b> : 0 port

Available Model	Model Name	Description
	TES-250-M12	EN50155 5-port lite-managed Ethernet switch with 5x10/100Base-T(X), M12 connector

### Packing List

- TES-250-M12
- ORing Tool CD
- Quick Installation Guide

### Optional Accessories (Can be purchased separately)

- 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
- SDR-240-48, 240W DIN-Rail power supply
- SDR-480-48, 480W DIN-Rail power supply
- M12C series cables with M12 connectors