

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

#### Features

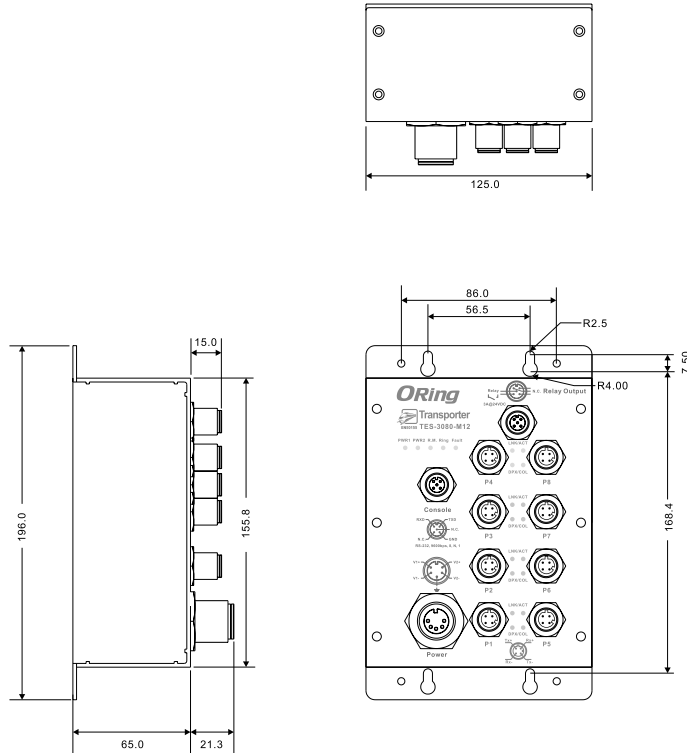
- Leading EN50155-compliant Ethernet switch for rolling stock application
- Fastest Redundant Ethernet Ring: **O-Ring** (recovery time < 10ms over 250 units of connection)
- **Open-Ring** supports the other vendor's ring technology in open architecture
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-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



# TES-3080-M12

## EN50155 Ethernet Switch

### Dimensions



(Unit=mm)

### Specifications

ORing Switch Model	TES-3080-M12
<b>Physical Ports</b>	
10/100 Base-T(X) Ports in M12 (D-coding) 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
<b>Technology</b>	
<b>Ethernet Standards</b>	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)
<b>MAC Table</b>	8192 MAC addresses
<b>Priority Queues</b>	4
<b>Processing</b>	Store-and-Forward
<b>Switch Properties</b>	Switching latency: 7 μs Switching bandwidth: 1.6Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define

## EN50155 Ethernet Switch

Security Features	<p>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 &amp; security to expand the VLAN space                  Radius centralized password management                  SNMP v1/v2c/v3 encrypted authentication and access security                  Https / SSH enhance network security</p>
Software Features	<p>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                  Supports <b>PTP Client</b> (Precision Time Protocol) clock synchronization                  DHCP Server / Client support                  Port Trunk support                  MVR (Multicast VLAN Registration) support                  Modbus TCP</p>
Network Redundancy	<p>O-Ring                  Open-Ring                  O-Chain                  STP                  RSTP:2004                  MSTP</p>
Warning / Monitoring System	<p>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</p>
<b>LED Indicators</b>	
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
<b>Fault Contact</b>	
Relay	Relay output to carry capacity of 3A at 24VDC(M12 connector with A-coding)
<b>Power</b>	
Redundant Input Power	Dual 12~48VDC on 5-pin M23 connector
Power Consumption (Typ.)	5 Watts
Overload Current Protection	Present
Reverse Polarity Protection	Present
<b>Physical Characteristics</b>	
Enclosure	IP-30
Dimensions (W x D x H)	125 (W) x 65 (D) x 196 (H)mm (4.92 x 2.56 x 7.72 inch)
Weight (g)	896 g
<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

## EN50155 Ethernet Switch

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

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

Available Model	Model Name	Description
	TES-3080-M12	EN50155 8-port managed Ethernet switch with 8x10/100Base-T(X), M12 connector

### Packing List

- TES-3080-M12
- ORing Tool CD
- Quick Installation Guide

### Optional Accessories (Can be purchased separately)

- Open-Vision M500, Powerful Network Management Windows Utility Suite, 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 : M12 cable accessories