

### EN50155 20-port managed Gigabit Ethernet switch with 20x10/100/1000Base-T(X), M12 connector

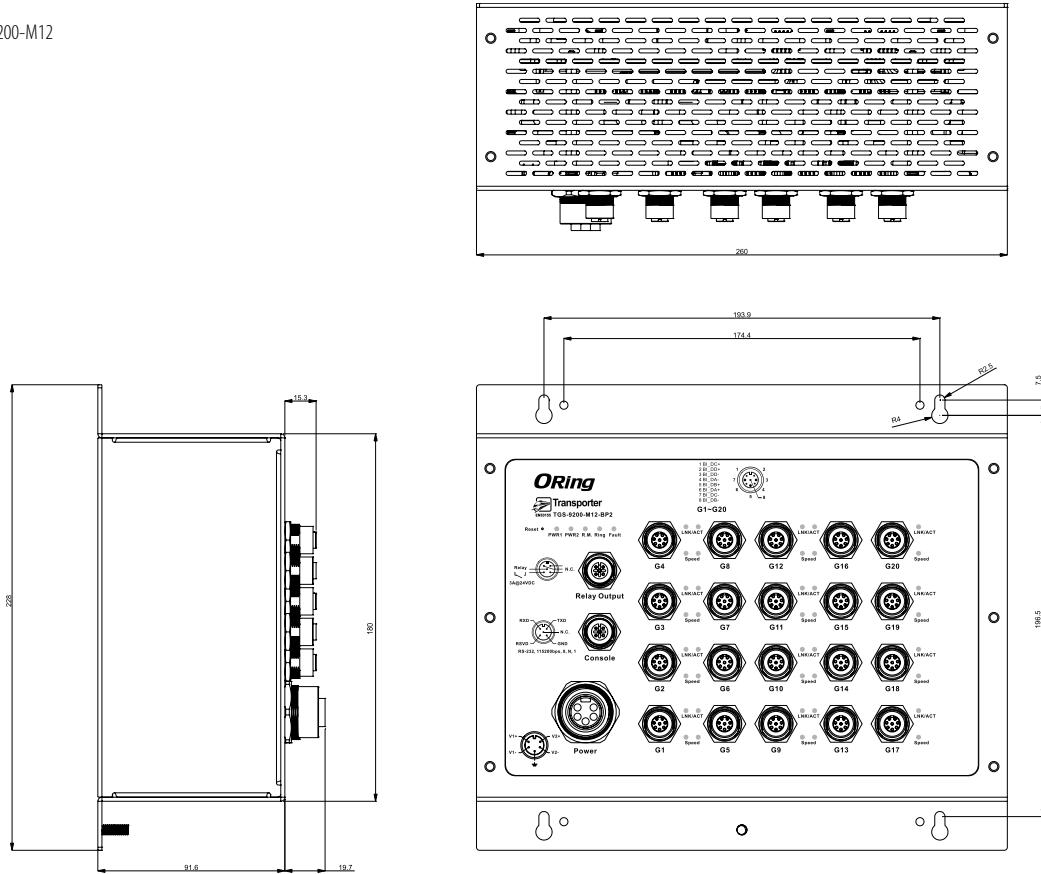
#### Features

- Leading EN50155-compliant Ethernet switch for rolling stock application
- Support **0-Ring** (recovery time < 30ms over 250 units of connection) and MSTP(RSTP/STP compatible) for Ethernet Redundancy
- **Open-Ring** support the other vendor's ring technology in open architecture
- **0-Chain** allow multiple redundant network rings
- Support standard IEC 62439-2 **MRP\*NOTE** (Media Redundancy Protocol) function
- Support IEEE 1588v2 clock synchronization
- Support IPV6 new internet protocol version
- Support Modbus TCP protocol
- Support IEEE 802.3az **Energy-Efficient Ethernet** technology
- Provided HTTPS/SSH protocol to enhance network security
- Support SMTP client
- Support IP-based bandwidth management
- Support application-based QoS management
- Support Device Binding security function
- Support DOS/DDOS auto prevention
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- Support SNMP v1/v2c/v3 & RMON & 802.1Q VLAN Network Management
- Support ACL, TACACS+ and 802.1x User Authentication for security
- Supports 9.6K Bytes Jumbo Frame
- Multiple notification for warning of unexpected event
- Web-based ,Telnet, Console (CLI), and Windows utility (**Open-Vision**) configuration
- Support LLDP Protocol
- Provided 2xRelay bypass function with four gigabit ports (-BP2 model)
- Wall mounting enabled

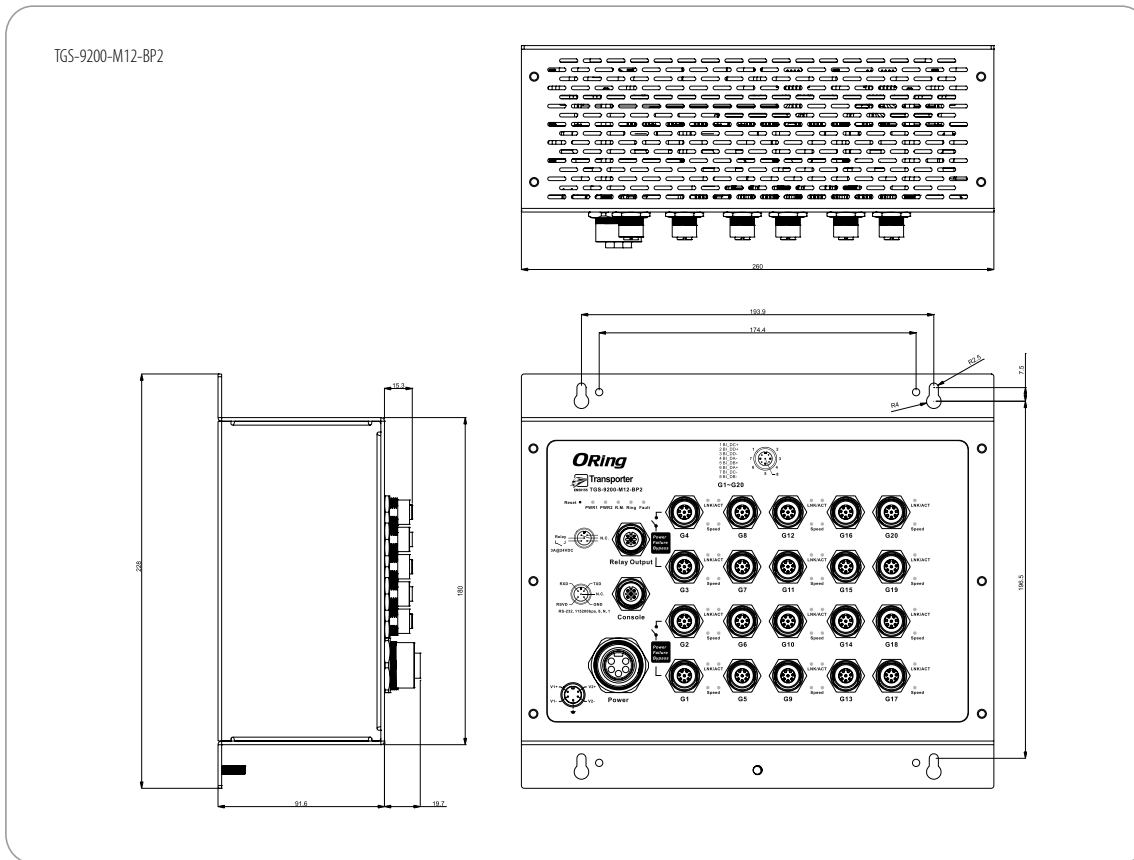


## Dimensions

TGS-9200-M12



## EN50155 Ethernet Switch



### Specifications

ORing Switch Model	TGS-9200-M12	TGS-9200-M12-BP2
<b>Physical Ports</b>		
10/100/1000Base-T(X) ports in M12 Auto MDI/MDIX	20 (8-pin A-coding)	20 (8-pin A-coding with 2 x bypass function included)
<b>Technology</b>		
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3ab for 1000Base-T 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 802.1w 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	
Priority Queues	8	
Processing	Store-and-Forward	
Switch Properties	Switching latency: 7 us Switching bandwidth: 40Gbps Max. Number of Available VLANs: 4095 IGMP multicast groups: 256 for each VLAN Port rate limiting: User Define	
Jumbo frame	Up to 9.6K Bytes	

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Security Features	Device Binding security feature Enable/disable ports, MAC based port security Port based network access control (802.1x) VLAN (802.1Q) to segregate and secure network traffic Radius centralized password management SNMPv3 encrypted authentication and access security Https / SSH enhance network security	
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant Ring (O-Ring) with recovery time less than 30ms 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 IP-based bandwidth management Application-based QoS management DOS/DDOS auto prevention Port configuration, status, statistics, monitoring, security DHCP Server/Client/Relay SMTP Client Modbus TCP	
Network Redundancy	O-Ring Open-Ring O-Chain MRP* <b>NOTE</b> MSTP (RSTP/STP compatible)	
RS-232 Serial Console Port	RS-232 in M12 (A-coding) connector with console cable. 115200bps, 8, N, 1	
<b>LED Indicators</b>		
Power Indicator (PWR)	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)	Amber : Indicate unexpected event occurred	
10/100/1000Base-T(X) M12 Port Indicator	Up of Green LED for Link/Act indicator. Down of dual color LED for Ethernet speed indicator : Green LED for 1000Mbps, Amber for 100Mbps, Off for 10Mbps	
<b>Fault contact</b>		
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin A-coding)	
<b>Power</b>		
Redundant Input power	Dual DC inputs. 12~48VDC on 5-pin M23 connector	Dual DC inputs. 12~48VDC on 5-pin M23 connector
Power Consumption (Typ.)	20 Watts	20.5 Watts
Overload Current Protection	Present	
Reverse Polarity Protection	Present	
<b>Physical Characteristics</b>		
Enclosure	IP-30	
Dimensions (W x D x H)	260 (W) x 91.6 (D) x 228 (H) mm (10.24 x 3.60 x 8.98 inch.)	
Weight (g)	2513 g	2535 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	
<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	IEC60068-2-31	
Vibration	IEC60068-2-6	
Warranty	5 years	

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## Ordering Information

TGPS-9 **AA** **B** -M12-**CCC**

Code Definition	10/100/1000Base-T(X) P.S.E. Port Number	Additional Port Number	Bypass Function
<b>Option</b>	- <b>20</b> : 20 ports	- <b>0</b> : 0 port	- <b>BP2</b> : 2xbypass function included

	Model Name	Description
Available Model	TGS-9200-M12	EN50155 20-port managed Gigabit Ethernet switch with 20x10/100/1000Base-T(X), M12 connector
	TGS-9200-M12-BP2	EN50155 20-port managed Gigabit Ethernet switch with 20x10/100/1000Base-T(X), M12 connector and 2xbypass included

Packing List	Optional Accessories
<ul style="list-style-type: none"><li>• TGS-9200-M12</li><li>• Quick Installation Guide</li><li>• ORing Tool CD</li></ul>	<ul style="list-style-type: none"><li>• Open-Vision M500 : Powerful Network Management Windows Utility Suit, 500 IP devices</li><li>• M12C : M12 cable accessories</li><li>• Console cable</li></ul>