TPS-3082GF-MM-M12-QODC

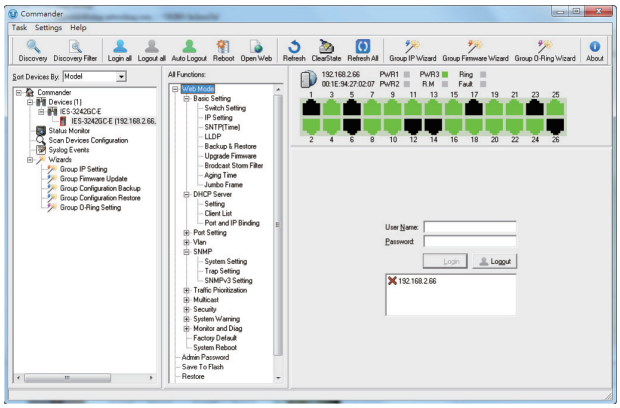
EN50155 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2x1000Base-SX, Q-ODC connector

Features

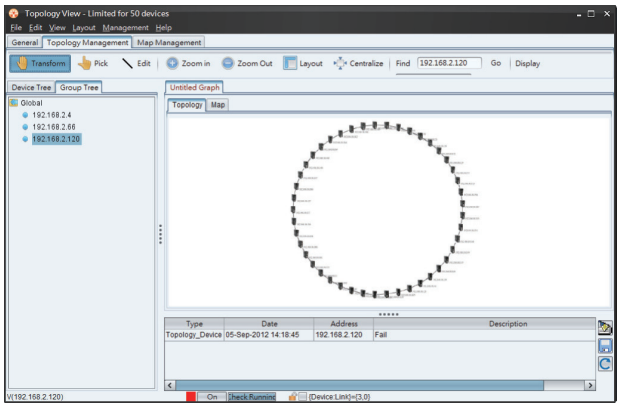
- Leading EN50155-compliant Ethernet switch for rolling stock application
- 8 ports P.S.E. fully compliant with IEEE802.3af standard, provide up to 15.4 Watts per port
- World's fastest Redundant Ethernet Ring: O-Ring (recovery time < 10ms over 250 units of connection)
- STP/RSTP/MSTP supported
- Support PTP Client (Precision Time Protocol) clock synchronization
- IGMP v2/v3 (IGMP snooping support) for filtering multicast traffic
- SNMP v1/v2c/v3 support for secured network management
- RMON for traffic monitoring
- Support VLAN and LLDP protocol
- DHCP assign each Equipment IP by each Port
- Provide two Gigabit fiber port with Q-ODC connector
- Event notification through Syslog, Email, SNMP trap, and Relay Output
- Windows utility (Open-Vision) support centralized management and configurable by Web-based ,Telnet, and Console (CLI)
- M12 connectors to guarantee reliable operation against environmental disturbances
- Wall mounting enabled

Introduction

ORing's Transporter™ series managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The TPS-3082GF-MM-M12-QODC is a managed PoE Redundant Ring Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2x1000Base-SX Q-ODC ports which is specifically designed for the toughest and fully compliant with EN50155 requirement. With completely support of Ethernet Redundancy protocol, O-Ring (recovery time < 10ms over 250 units of connection), Open-Ring 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. TPS-3082GF-MM-M12-QODC also supports Power over Ethernet, a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each TPS-3082GF-MM-M12-QODC switch has 8X10/100Base-T(X) P.S.E. (Power Sourcing Equipment) ports. P.S.E. is a device (switch or hub for instance) that will provide power in a PoE setup. TPS-3082GF-MM-M12-QODC EN50155 Ethernet switch use M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. TPS-3082GF-MM-M12-QODC 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.

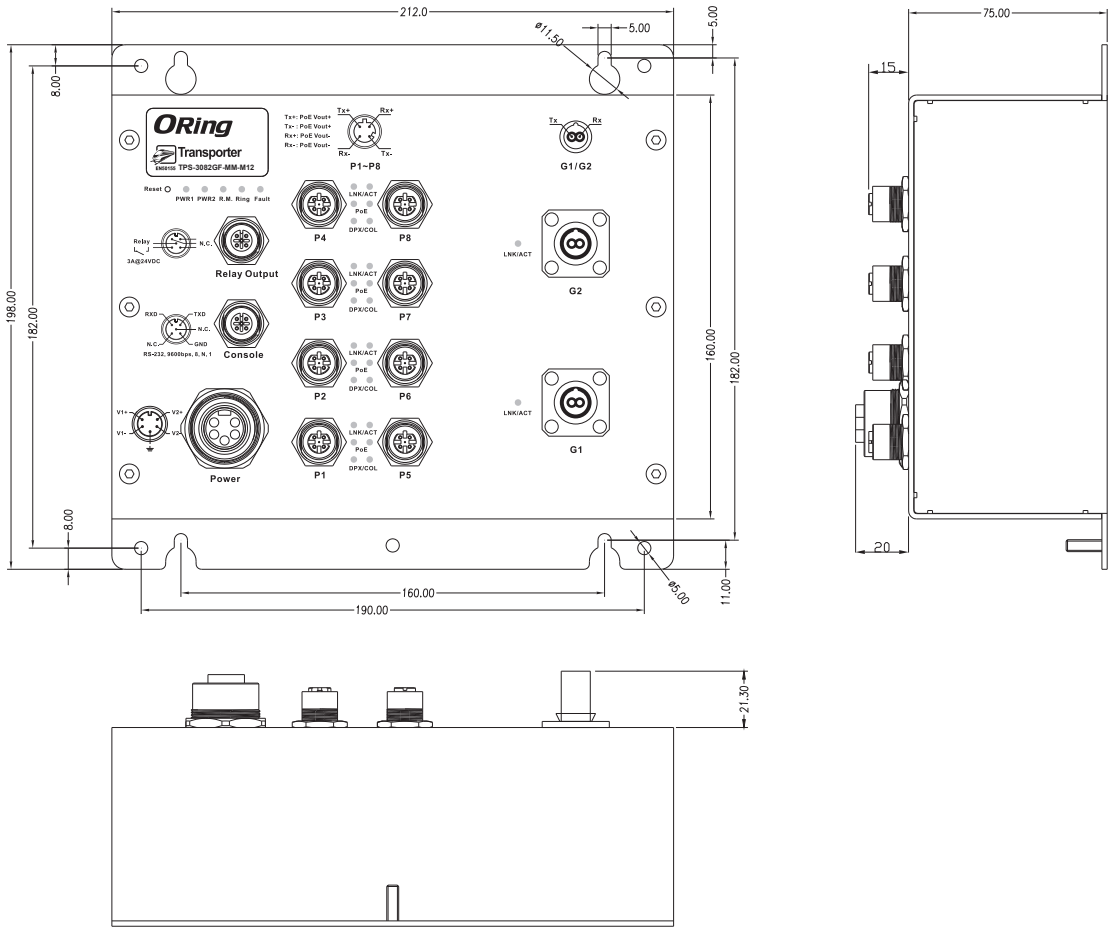


Commander



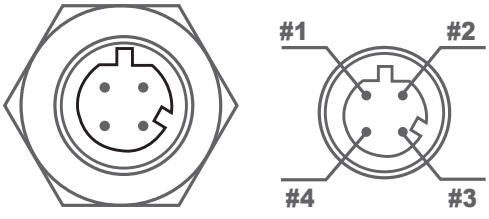
Topology View

Dimensions



(Unit=mm)

PoE Pin Definition



M12 D-coding Pin Definition	
Pin No.	Description
#1	TX+ with PoE Vout+
#2	RX+ with PoE Vout-
#3	TX- with PoE Vout+
#4	RX- with PoE Vout-

Specifications

ORing Switch Model		TPS-3082GF-MM-M12-QODC
Physical Ports		
10/100 Base-T(X) Ports in M12 Auto MDI/MDIX with P.S.E.		**8 x M12 connector (4-pin D-coding)**
1000Base-SX Fiber Ports in Q-ODC connector		**2 x Q-ODC connector**
RS-232 Serial Console Port		**RS-232 in M12 connector (A-coding). Baud rate setting: 9600bps, 8, N, 1**
Fiber Ports Specification	Fiber Ports Number	2
	Fiber Ports Standard	1000Base-SX
	Fiber Mode	Multi-mode
	Fiber Diameter (μm)	62.5/125 μm @ 50/125 μm
	Fiber Optical Connector	Q-ODC
	Typical Distance (Km)	0.55 Km
	Wavelength (nm)	850 nm
	Max. Output Optical Power (dbm)	-4 dbm
	Min. Output Optical Power (dbm)	-9.5 dbm
	Max. Input Optical Power (Saturation)	0 dbm
	Min. Input Optical Power (Sensitivity)	-18 dbm
	Link Budget (db)	8.5 db
Technology		
Ethernet Standards		IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX IEEE 802.3z for 1000Base-X 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) IEEE 802.3af PoE specification (up to 15.4 Watts per port for P.S.E.)
MAC Table		8192 MAC addresses
Priority Queues		4
Processing		Store-and-Forward
Switch Properties		Switching latency: 7 us Switching bandwidth: 5.6Gbps 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
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 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	Green : Power LED x 2
R.M. Indicator	Green : Indicate system operated in O-Ring Master mode
O-Ring Indicator	Green : Indicate system operated in O-Ring mode
Fault Indicator	Amber : Indicate unexpected event occurred
10/100Base-T(X) M12 PoE Port Indicator	Up Green for port Link/Act. Down Green for PoE indicator. Amber for Collision/Duplex indicator.
1000Base-SX Q-ODC Port Indicator	Green LED for Link/Act indicator
Fault contact	
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin A-coding)
Power	
Redundant Input Power	Dual DC inputs. 48VDC on 5-pin M23 connector
Power Consumption (Typ.)	10.75W
PoE Output Power	120 watts
Overload Current Protection	Present
Reverse Polarity Protection	Present
Physical Characteristic	
Enclosure	IP-30
Dimension (W x D x H)	212 (W) x 75 (D) x 198 (H) mm
Weight (g)	1462g
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	EN 55022, EN 55024(CE EMC),EN 50121-4,EN 60945, FCC, EN 50121-3-2(EN50155), EN 61000-6-2, EN 61000-6-4,IEC 61000-3-2 ,IEC 61000-3-3
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
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	5 years

Ordering Information

TPS-3 AA B CC – DD –M12-QODC

Code Definition	10/100Base-T(X) P.S.E. Port Number	Additional Port Number	Additional Port Number	Fiber Optical Mode
Option	**- 08:** 8 ports	**- 2:** 2 ports	**- GF**: 1000Base-X Fiber Ports	**- MM**: Multi-mode

	Model Name	Description
Available Model	TPS-3082GF-MM-M12-QODC	EN50155 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2x1000Base-SX, multi-mode, 550m/850nm, Q-ODC connector

Packing List

- TPS-3082GF-MM-M12-QODC 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
- M12C : M12 cable accessories
- DR-75-48 : 75 Watts DIN-Rail power supply
- DR-120-48 : 120 Watts DIN-Rail power supply
- Console cable