



Quick Installation Guide

TPS-3082GT-M12-BP1/-24V

EN50155 10-port managed PoE Ethernet switch

Introduction

ORing's Transporter™ series managed Ethernet switches are designed for industrial applications, such as rolling stock, vehicle, and railway applications. **TPS-3082GT-M12-BP1/-24V** are managed PoE Redundant Ring Ethernet switches with 8x10/100Base-T(X) P.S.E. and 2x10/100/1000Base-T(X) ports which is specifically designed for the toughest application 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. Another Open-Ring technology is also supported which can applied for other vendor's proprietary ring. **TPS-3082GT-M12-BP1/-24V** also support Power over Ethernet, a system to transmit electrical power, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. **TPS-3082GT-M12-BP1/-24V** EN50155 Ethernet switches use M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. **TPS-3082GT-M12-BP1/-24V** can be managed centralized and convenient by a powerful windows utility ~ Open-Vision. In addition, the wide operating temperature range from -40°C to 70°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.



Specifications

ORing Switch Model	TPS-3082GT-M12-BP1	TPS-3082GT-M12-BP1-24V
Physical Ports		
10/100 Base-T(X) Ports in M12 Auto MDI/MDIX	8 x M12 connector (4-pin M12 D-coding)	
10/100/1000Base-T(X) ports in M12	4 x M12 connector (Two 4-pin M12 D-coding connectors establish one gigabit connection)	
RS-232 Serial Console Port	RS-232 in M12 connector (5-pin A-coding). Baud rate setting: 9600bps, 8, N, 1	
Technology		
Ethernet Standards	IEEE 802.3 for 10Base-T IEEE 802.3ab for 1000Base-TX IEEE 802.3ab for 1000Base-T 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.)	

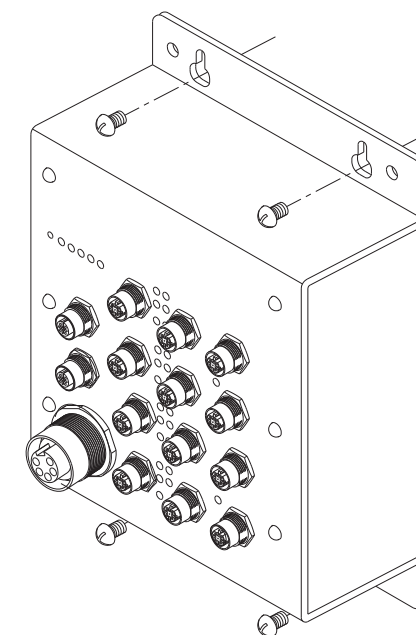
MAC Table	8192 MAC addresses
Priority Queues	4
Processing	Store-and-Forward
Switch Properties	Switching latency: 7 μs Switching bandwidth: 5.6Gbps Max. Number of Available VLANs: 4096 IGMP multicast groups: 1024 Port rate limiting: User Define
Security Features	Enable/disable ports, MAC based port security 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 SNMPv3 encrypted authentication and access security
Software Features	STP/RSTP/MSTP (IEEE 802.1D/w/s) Redundant 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, Open-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	Green for port Link/Act. Green for PoE indicator. Amber for duplex indicator
10/100/1000Base-T(X) M12 Port Indicator	Green for port Link/Act. Amber for 100Mbps indicator
Fault Contact	
Relay	Relay output to carry capacity of 3A at 24VDC on M12 connector (5-pin M12 A-coding)
Power	
Redundant Input Power	Dual 48 VDC on 5-pin M23 connector Dual 24~36 VDC on 5-pin M23 connector
Power Consumption (Typ.)	9 Watts (power consumption of P.S.E. is not included)
Overload Current Protection	Present
Reverse Polarity Protection	Not Present
Physical Characteristic	
Enclosure	IP-40
Dimension (W x D x H)	188(W) x 75(D) x 196(H) mm (7.40 x 2.95 x 7.72 inch.)
Weight (g)	1450g TBD
Environmental	
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
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
Free Fall	IEC60068-2-32
Vibration	IEC60068-2-6
Safety	EN60950-1
Warranty	5 years

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)
- > Open-Ring support the other vendor's ring technology in open architecture
- > 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
- > Provided hardware bypass function on gigabit ports when power failure occurred
- > 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

Installation

Wall-mounted Install Step



Quick Installation Guide

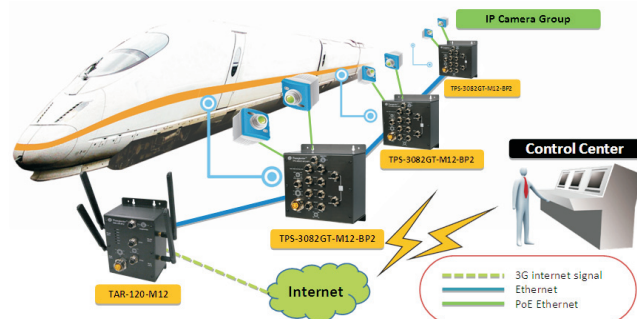
TPS-3082GT-M12-BP1/-24V

EN50155 10-port managed PoE Ethernet switch

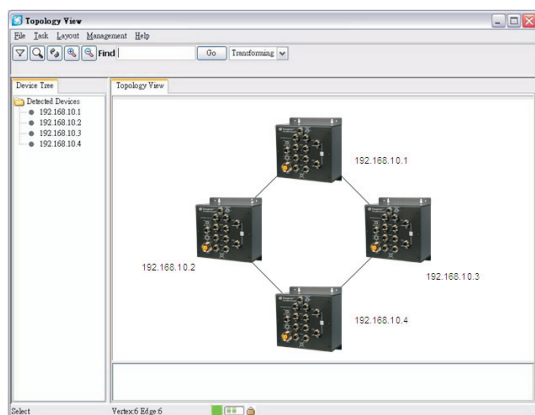
Open-Vision

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.

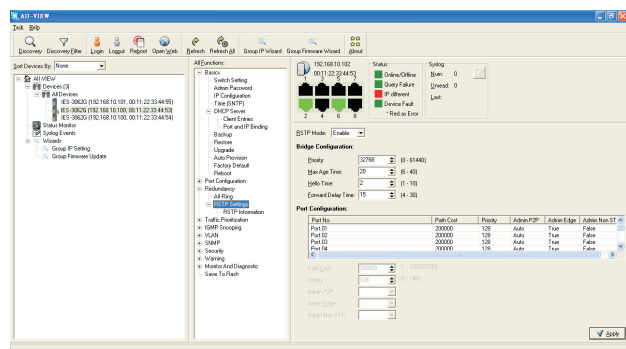
Network connection



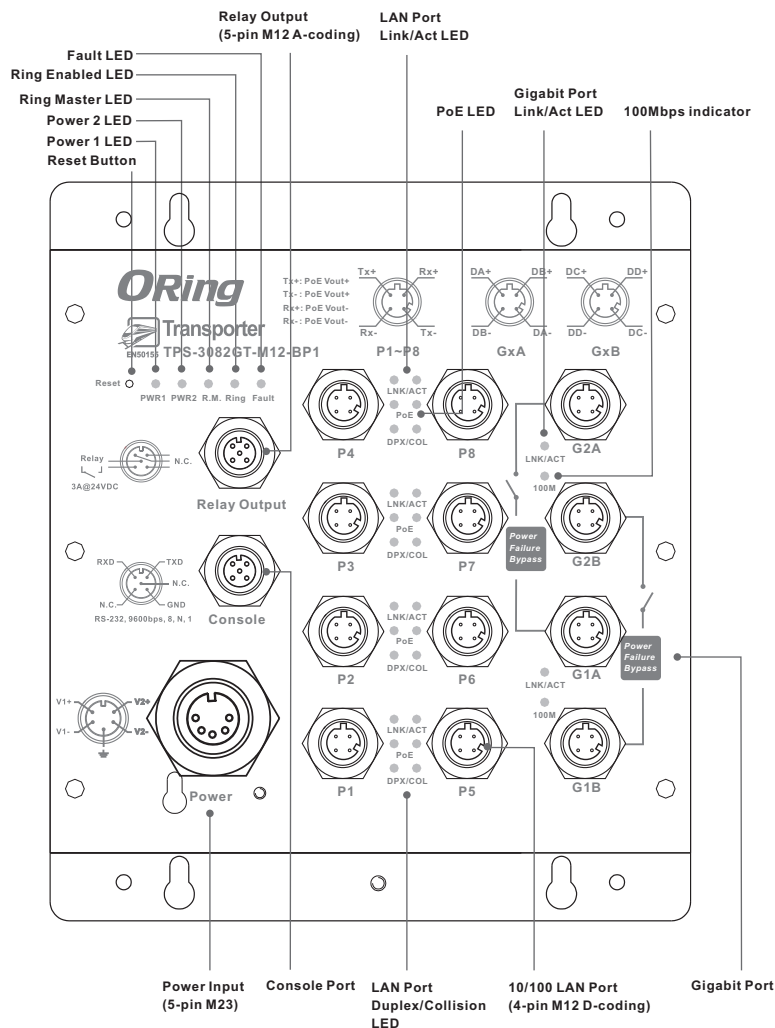
Topology View



Monitoring and Configuration interface

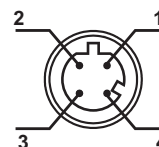


Front Panel



PoE Pin Definition

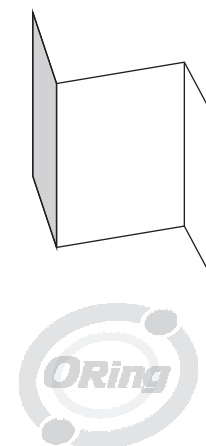
M12 D-coding Pin Definition	
Pin No.	Description
# 1	RD+ with PoE Power input -
# 2	TD+ with PoE Power input +
# 3	RD- with PoE Power input -
# 4	TD- with PoE Power input +



Accessory

① QIG

② CD



Packing list

Model name	Description	Accessory
TPS-3082GT-M12-BP1	EN50155 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2x10/100/1000Base-T(X), M12 connector and 1xbypass included	① X 1, ② X 1
TPS-3082GT-M12-BP1-24V	En50155 10-port managed PoE Ethernet switch with 8x10/100Base-T(X) P.S.E. and 2x10/100/1000Base-T(X), M12 connector and 1xbypass included, 24VDC power inputs	① X 1, ② X 1



ORing Industrial Networking Corp.

Copyright© 2013 ORing
All rights reserved.



TEL: +886-2-2218-1066 Website: www.oring-networking.com
FAX: +886-2-2218-1014 E-mail: support@oring-networking.com