





Quick Installation Guide

Introduction

ORing's Transporter™ series managed PoE Ethernet switches are designed for industrial waterproof applications, such as rolling stock, vehicle, and railway applications. **TGPS-W9124GT-M12X-BP2-WV-IP54** is managed Redundant Ring Ethernet switch with 12x10/100/1000Base-T(X) P.S.E. and 4x10/100/1000Base-T(X) ports which is specifically designed for the toughest and fully compliant with EN50155 requirement. The switch support Ethernet Redundancy protocol, O-Ring (recovery time 30ms over 250 units of connection), O-Chain, MRP 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. **TGPS-W9124GT-M12X-BP2-WV-IP54** also support Power over Ethernet, a system to transmit electrical power up to 30 watts, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. Each **TGPS-W9124GT-M12X-BP2-WV-IP54** switch has 12x10/100B/1000Base-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 connection. **TGPS-W9124GT-M12X-BP2-WV-IP54** includes 2 sets of bypass ports that protect the network from failures and Network maintenance by ensuring network integrity during power loss. And support wide operating temperature from -40°C to 75°C. **TGPS-W9124GT-M12X-BP2-WV-IP54** can also be managed centralized and convenient by Open-Vision, Except the Web-based interface, Telnet and console (CLI) configuration. Therefore, the switch is one of the most reliable choices for EN50155 waterproof highly-managed Gigabit PoE Ethernet application.

Package Contents



The device is shipped with the following items. If any of these items is missing or damaged, please contact your customer service representative for assistance.

| Contents | Pictures | Number |
|-------------------------------|---|--------|
| TGPS-W9124GT-M12X-BP2-WV-IP54 |  | 1 |
| CD Card |  | 1 |
| Wall-mount Kit |  | 4 |
| QIG |  | 1 |



Preparation

Before you begin installing the device, make sure you have all of the package contents available and a PC with Microsoft Internet Explorer 6.0 or later, for using web-based system management tools.

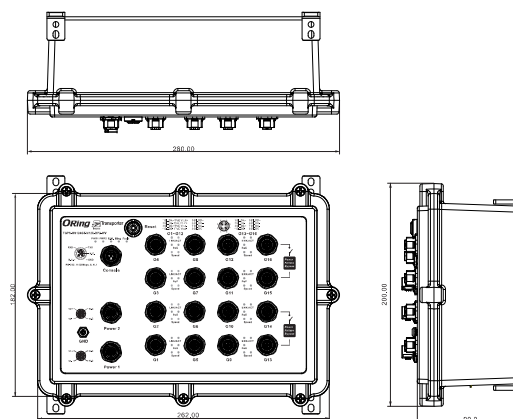
Safety & Warnings

-  When installed outdoors, make sure the connectors on the panel are facing down to prevent water intrusion.
-  Do not remove the water-proof casing, and do not touch or move the device when the antennas are transmitting or receiving signals.

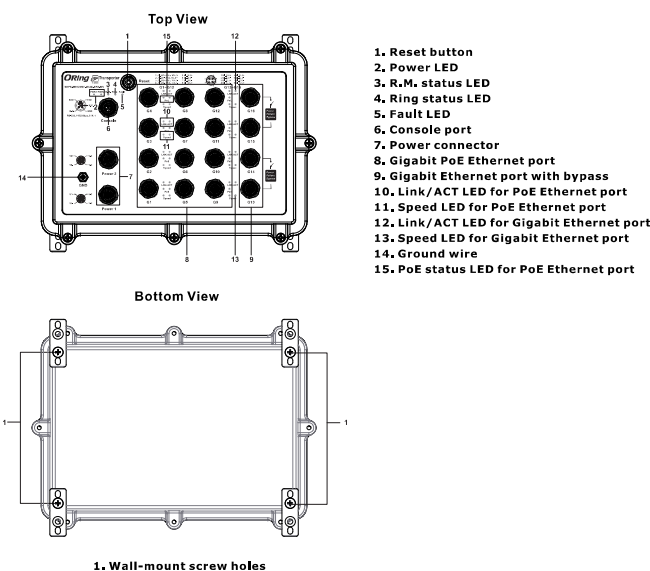
TGPS-W9124GT-M12X-BP2
-WV-IP54

-  When installing the device, make sure to keep the radiating at a minimum distance of 20 cm (7.9 inches) from all persons to minimize the potential for human contact during normal operation.
-  Do not operate the device near unshielded blasting caps or in an otherwise explosive environment unless the device has been modified for such use by qualified personnel.

Dimension Unit =mm (Tolerance ±0.5mm)



Panel Layouts



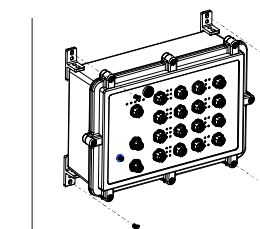
1. Wall-mount screw holes


Installation

Wall-mount

Follow the steps below to install the device to the wall.

- Step 1:** Screw the Four pieces of wall-mount kits onto bottom side of the switch. A total of four screws are required.
- Step 2:** Hold the device upright against the wall.
- Step 3:** Insert four screws through the holes at the top of the plate and fasten the screws to the wall.



-  Instead of screwing the screws in all the way, it is advised to leave a space of about 2mm to allow room for sliding the switch between the wall and the screws.

Wiring

For pin assignments of power and console port, please refer to the following tables.

Grounding

Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI). Run the ground connection from the grounding pin on the power connector to the grounding surface prior to connecting devices.


Power port pinouts

The device supports two sets of power supply and uses the M12 S-coded 4-pin male connector on the front panel for power inputs.

- Step 1:** Insert a power cable to the power connector on the device.
- Step 2:** Rotate the outer ring of the cable connector until a snug fit is achieved. Make sure the connection is tight.



Console port pinouts

-  The switch has one RS-232 (M12 A-code 5-pin male) console port, located on the front panel. Use a M12-to-DB9 console cable to connect the console port to your PC's COM port.



Network Connection

The switch has twelve 10/100/1000Base-T(X) P.S.E and four 10/100/1000Base-T(X) Ethernet ports in the form of M12 connector. Depending on the Link type, the switch uses CAT 3, 4, 5, 5e UTP cables to connect to network devices (PCs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

| Cable | Type | Max. Length | Connector |
|------------|----------------------------|--------------------|-------------------------------------|
| 10BASE-T | Cat. 3, 4, 5 100-ohm | UTP 100 m (328 ft) | 8-pin female M12 X-coding connector |
| 100BASE-TX | Cat. 5 100-ohm UTP | UTP 100 m (328 ft) | 8-pin female M12 X-coding connector |
| 1000BASE-T | Cat. 5/Cat. 5e 100-ohm UTP | UTP 100 m (328 ft) | 8-pin female M12 X-coding connector |

Quick Installation Guide

For pin assignments of the Ethernet ports, please refer to the following tables.



| 10/100/1000Base-T(X) M12 X-coding | |
|-----------------------------------|----------------|
| Pin No. | Pin Definition |
| #1 | BI_DA+ |
| #2 | BI_DA- |
| #3 | BI_DB+ |
| #4 | BI_DB- |
| #5 | BI_DD+ |
| #6 | BI_DD- |
| #7 | BI_DC- |
| #8 | BI_DC+ |

| 10/100/1000Base-T(X) P,S,E, M12 | |
|---------------------------------|-----------------------|
| X-coding | |
| Pin No. | Pin Definition |
| #1 | BI_DA+ with PoE Vout+ |
| #2 | BI_DA- with PoE Vout+ |
| #3 | BI_DB+ with PoE Vout- |
| #4 | BI_DB- with PoE Vout- |
| #5 | BI_DD+ |
| | BI_DD- |
| #7 | BI_DC- |
| #8 | BI_DC+ |

➤ Configurations

After installing the switch and connecting cables, the green power LED should turn on. Please refer to the following tablet for LED indication.

| LED | Color | Status | Description |
|---|-------------|----------|--|
| PWR1 | Green | On | DC power module 1 activated |
| PWR2 | Green | On | DC power module 2 activated |
| R.M | Green | On | Device operating in Ring Master mode |
| Ring | Green | On | Ring enabled |
| | | Blinking | Ring structure is broken |
| Fault | Amber | On | Errors occur (i.e. power failure or port malfunctioning) |
| 10/100/1000Base-T(X) P.S.E Ethernet ports | | | |
| LNK/ACT | Green | On | Port is linked |
| | | Blinking | Transmitting data |
| PoE | Green | On | Power supplied over Ethernet |
| | Green | On | Port is running at 1000Mbps |
| Speed | Amber | On | Port is running at 100Mbps |
| | Green/Amber | Off | Port is running at 10Mbps |
| 10/100/1000Base-T(X) Ethernet ports | | | |
| LNK/ACT | Green | On | Port is linked |
| | | Blinking | Transmitting data |
| Speed | Green | On | Port is running at 1000Mbps |
| | Amber | On | Port is running at 100Mbps |
| | Green/Amber | Off | Port is running at 10Mbps |

Follow the steps below to log in and access the system:

1. Launch the Internet Explorer and type in IP address of the device. The default static IP address is **192.168.10.1**



2. Log in web UI:

For K9 or K12 Ver.: both are "admin"

Please enter your user ID and password

ID

Password

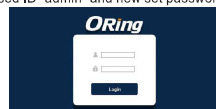
[Apply](#) [Cancel](#)

S12 cybersecurity Ver.:

Set new password



Used ID "admin" and new set password to log in



**TGPS-W9124GT-M12X-BP2
-WV-IP54**

3. After logging in, you should see the following screen.

[illegible]

- **Resetting**

To restore the device configurations back to the factory defaults, press the **Reset** button for 5 seconds. Once the power indicator starts to flash, release the button. The device will then reboot and return to factory defaults.

▣ Specifications

| Oring Switch Model | TGPS-W9124GT-M12X-BP2-WV-IP54 |
|--|---|
| Physical Ports | |
| 10/100/1000 Base-T(X) with P,S,E Ports in M12 Auto MDI /MDIX | 12 (8-pin female X-coding) |
| 10/100/1000Base-T(X) ports in M12 Auto MDI/MDIX | 4 (8-pin female X-coding with 2xbypass function included) |
| Technology | |
| 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) IEEE 802.3at PoE specification (up to 30 Watts per port for P,S,E.) IEEE 802.3af PoE specification (up to 15.4 Watts per port for P,S,E.) |
| MAC Table | 8k |
| Packet Buffer Size | 4Mbits |
| Priority Queues | 8 |
| Processing | Store-and-Forward |
| Switch Properties | Switching latency: <7 μs Switching bandwidth: 32Gbps Throughput (packet per second): 23,608Mpps@64Bytes packet Max. Number of Available VLANs: 4095 IGMP multicast groups: 128 for each VLAN Port rate limiting: User Define |
| Jumbo Frame | Up to 9,6K Bytes |
| 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 |

EN50155 Industrial IP-54 managed Gigabit PoE Ethernet switch

| | |
|-----------------------------|--|
| Network Redundancy | O-Ring O-Chain MRP MSTP (RSTP/STP compatible) |
| RS-232 Serial Console Port | RS-232 in 5-pin M12 female A-coding connector. Baud rate setting: 115200bps, 8, N, 1 |
| Reset Function | |
| Reset Button | < 5 sec: System reboot, > 5 sec: Factory default |
| Power | |
| Input Power | Dual 24+10VDC (power rating: 16.4~137.5VDC) on dual 4-pin male 5-coding connector |
| Power Consumption(Typ.) | 29Watts (power consumption of P.S.E. is not included) |
| Total PoE Output Power | ≥ 24VDC: 60 Watts Max, power budget ≥ 48VDC: 90 Watts Max, power budget |
| OverLoad Current Protection | Present |
| Reverse Polarity Protection | Present |
| Physical Characteristic | |
| Enclosure | IP-54 |
| Dimension (W x D x H) | 280 (W) x 90 (D) x 200 (H) mm (11.02 x 3.54 x 7.87 inch.) |
| Weight (g) | 3187 g |
| 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 | CE EMC (EN 55035, EN 55032), FCC Part 15 B, EN 50155(EN 50121-1, EN 50121-3-2) |
| EMI | EN 55032, CISPR32, EN 61000-3-2, EN 61000-3-3, FCC Part 15 B class A |
| EMS | EN 55035 (IEC/EN 61000-4-2 (ESD), IEC/EN 61000-4-3 (RS), IEC/EN 61000-4-4 (EFT), IEC/EN 61000-4-5 (Surge), IEC/EN 61000-4-6 (CS), IEC/EN 61000-4-6(PHMF), IEC/EN 61000-4-11 (DIP)) |
| Shock | IEC60068-2-27 |
| Free Fall | IEC60068-2-31 |
| Vibration | IEC60068-2-6 |
| Safety | EN 62368-1 |
| Other | EN 50155(IEC 61373) |
| Warranty | 5 years |



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