MEDIA CONVERTER INDUSTRIAL

ORing

# Quick Installation Guide

# IGPMC-111GP

# Industrial Gigabit PoE Media Converter

## Introduction

The **IGPMC-111GP** is a cost-effective solution for conversion between 10/100/1000Base-T(X) and 100/1000Base-X SFP interfaces, allowing you to extend communication distance by optical fiber. The device supports MDI/MDIX auto detection, so you don't need to use crossover wires. With a 10/100/1000Base-T(X) P.S.E. (Power Sourcing Equipment) port, the device can transmit electrical power up to 30 watts, along with data, to remote devices over standard twisted-pair cable in an Ethernet network. It also supports LFP (Link Fault Pass-through). When one side of the link fails, the other side continues to transmit packets and will wait for a response that never arrives from the disconnected side. LFP can be easily enabled using the DIP switch. Once enabled, the link will shut down as soon as it is notified that the other link has failed, giving the application software a chance to react to the situation. The **IGPMC-111GP** has a wide operating temperature range from -40~75°C and a wide voltage range between 50~57 VDC, so it is suitable for harsh operating environments.

## Package Contents

The series 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 |
|---|---|---|
| IGPMC-111GP |  | X 1 |
| DIN-rail Kit |  | X 1 |
| Wall-mount Kit |  | X 2 |
| QIG |  | X 1 |
| 4-pin terminal block |  | X 1 |

## Preparation

Before installation, 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

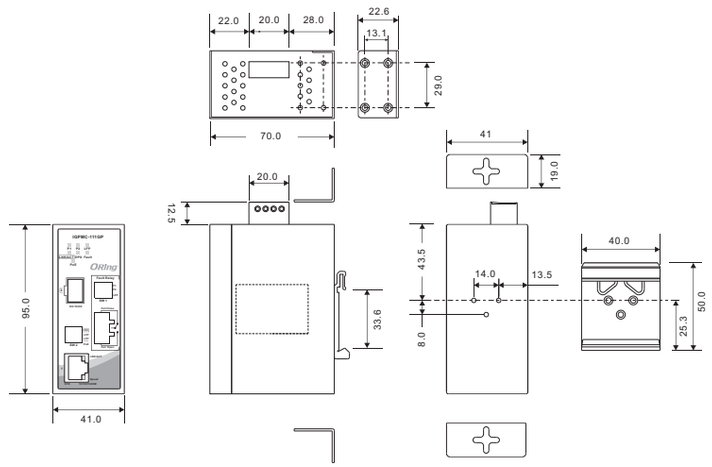
**Elevated Operating Ambient:** If installed in a closed cabinet, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

**Reduced Air Flow:** Installation of the equipment should be such that the amount of air flow required for safe operation of the equipment is not compromised.

**Mechanical Loading:** Mounting of the equipment in the din-rail should be such that a hazardous condition is not achieved due to uneven mechanical loading.

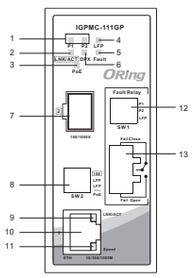
**Circuit Overloading:** Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

### Dimension (Unit: mm)



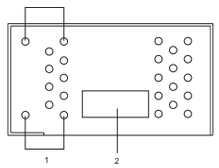

### Panel Layouts

**Front Panel**



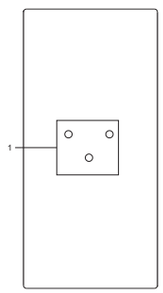

1. Power LED
2. LNK/ACK LED for SFP port
3. PoE power status
4. LFP status LED
5. Fault LED
6. Duplex LED for Giga port
7. SFP port
8. DIP-switch 2
9. Giga port LNK/ACT LED
10. Giga port
11. Giga port speed LED
12. DIP-switch 1
13. Faulty terminal

**Top Panel**




1. Wall-mount screw holes
2. Terminal block

**Real Panel**

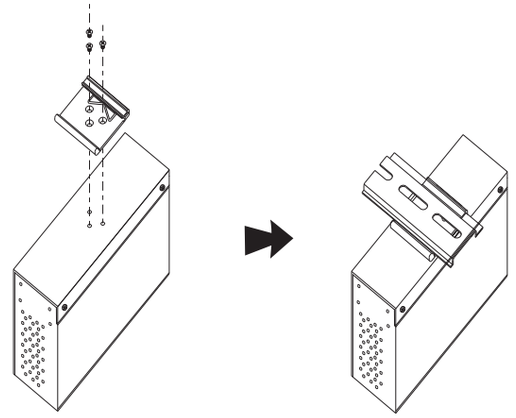



1. Din-rail screw holes

## Installation

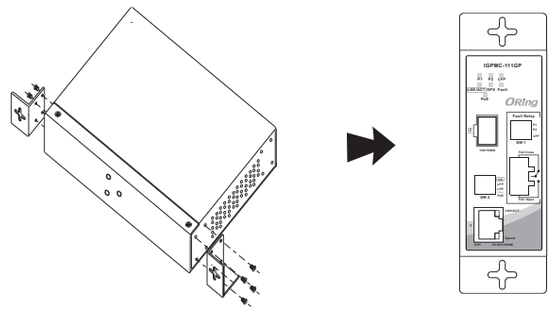
### DIN-rail Installation

**Step 1:** Slant the switch and screw the Din-rail kit onto the back of the switch, right in the middle of the back panel.
**Step 2:** Slide the switch onto a DIN-rail from the Din-rail kit and make sure the switch clicks into the rail firmly.



### Wall-mounting

**Step 1:** Screw the two pieces of wall-mount kits onto both sides of the switch. A total of eight screws are required, as shown below.
**Step 2:** Use the switch, with wall mount plates attached, as a guide to mark the correct locations of the four screws.
**Step 3:** Insert four screw heads through the large parts of the keyhole-shaped apertures, and then slide the switch downwards. Tighten the four screws for added stability.



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## Network Connection

The device has a standard Ethernet port. According to the link type, the device uses CAT 3, 4, 5, 5e UTP cables to connect to any other network devices (Pcs, servers, switches, routers, or hubs). Please refer to the following table for cable specifications.

**Cable Types and Specifications:**

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

For pin assignments for different types of cables, please refer to the following tables.

| 10/100Base-T(X) P.S.E. RJ-45 Definition | |
|---|---|
| Pin No. | **Assignment** |
| #1 | TD+ with PoE Power input + |
| #2 | TD- with PoE Power input + |
| #3 | RD+ with PoE Power input - |
| #4 | Not used |
| #5 | Not used |
| #6 | RD- with PoE Power input - |
| #7 | Not used |
| #8 | Not used |

| 1000Base-T P.S.E. RJ-45 Pin Definition | |
|---|---|
| Pin No. | Description |
| #1 | BI_DA+ with PoE Power input + |
| #2 | BI_DA- with PoE Power input + |
| #3 | BI_DB+ with PoE Power input - |
| #4 | BI_DC+ |
| #5 | BI_DC- |
| #6 | BI_DB- with PoE Power input - |
| #7 | BI_DD+ |
| #8 | BI_DD- |

**DIP Switch Setting**

| 3-PIN DIP-Switch 1 | | Description | |
|---|---|---|---|
| DIP-Switch No. | Function | DIP-Switch Status | |
| 1 | Power-1 failure detection | ON | When power-1 failure, enable relay output |
| | | OFF | Disable power-1 failure detection |
| 2 | Power-2 failure detection | ON | When power-2 failure, enable relay output |
| | | OFF | Disable power-2 failure detection |
| 3 | LFP warning detection | ON | LFP signals when detected, enable relay output |
| | | OFF | Disable LFP signals detection |

| 3-PIN DIP-Switch 2 | | Description | |
|---|---|---|---|
| DIP-Swith No. | Function | DIP-Switch Status | |
| 1 | 100/1000Base-FX mode selection | ON | 100Base-FX mode |
| | | OFF | 1000Base-FX mode |
| 2 | LFP function | ON | Enable LFP function |
| | | OFF | Disable LFP function |
| 3 | LFP control PoE output | ON | LFP signal when it is detected, the PoE output is stopped |
| | | OFF | PoE continuous power supply |

## Wiring

The switch supports dual redundant power supplies which are located on the 4-pin terminal block.

**STEP 1:** Insert the negative/positive wires into the V-/V+ terminals, respectively.

**STEP 2:** To keep the DC wires from pulling loose, use a small flat-blade screwdriver to tighten the wire-clamp screws on the front of the terminal block connector.


## Configurations

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

### LED indication table

| LED | Color | Status | Description |
|---|---|---|---|
| **PW1** | Green | On | DC power module 1 activated |
| **PW2** | Green | On | DC power module 2 activated |
| **PoE** | Green | On | Power is supplied over Ethernet cable |
| **Fault** | Amber | On | An unexpected event occurred |
| 10/100/1000 Base-T(X) RJ45 Port | | | |
| **LNK/ACT** | Green | On | Port is linked |
| | | Blinking | Acting |
| | | Off | Port is disconnected |
| **Speed** | Amber | On | Port running at 100Mbps |
| | | Off | Port running at 10Mbps |
| | Green | On | Port running at 1000Mbps |
| **Duplex** | Green | On | Full-Duplex |
| | | Off | Half-Duplex |
| SFP Port | | | |
| **LNK/ACT** | Green | On | Port is linked |
| LFP | | | |
| **Status** | Amber | On | LFP function failed |

## Specifications

| ORing Media Converter Model | IGPMC-111GP |
|---|---|
| **Physical Ports** | |
| 10/100/1000 Base-T(X) Ports in RJ45 Auto MDI/MDIX | **1** |
| 100/1000Base-X SFP port | **1** |
| **Technology** | |
| Ethernet standards | IEEE 802.3i for 10Base-T<br>IEEE 802.3u for 100Base-TX and 100Base-FX<br>IEEE 802.3ab for 1000Base-T<br>IEEE 802.3z for 1000Base-X<br>IEEE 802.3at PoE specification (up to 30 Watts per port for P.S.E.) |
| Jumbo Frame | 9K Bytes (1G mode only) |
| **Fault contact** | |
| Relay | Relay output to carry capacity of 1A at 24VDC at pin terminal block |
| **Power** | |
| Input power | Dual 50 ~ 57 VDC voltage power inputs in 4 pin terminal block |
| Power consumption(Typ.) | 4 Watts |
| Overload current protection | Present |
| Reverse polarity protection | Present on terminal block |
| **Physical Characteristic** | |
| Enclosure | IP-30 |
| Dimension (W x D x H) | 41 (W) x 70 (D) x 95 (H)mm (1.61 x 2.76 x 3.74 inch) |
| Weight (g) | 291g |
| **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** | |
| EMI | FCC Part 15, CISPR (EN55022) class A |
| 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 |
| **MTBF** | 1,116,093hrs |
| **Warranty** | 5 years |

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