**GIGABIT PoE INJECTOR INDUSTRIAL**

**ORing**

# Quick Installation Guide

# INJ-102GT++ Series

## Industrial Gigabit PoE++ Injector

## Introduction

The **INJ-102GT++ Series** PoE Injector is not only an IEEE802.3at compliant device but also an advanced high power PoE injector. It is with intelligent detection that provided 2-ports 10/100/1000Base-T(X) PoE outputs.  The device does not turn on power until it detects a valid PoE signature from the PoE devices attached downstream on the Ethernet cable.  This protection against damage to non-PoE compliant equipment which may be connected to the Ethernet cable.  Therefore, only an IEEE 802.3at/802.3af compliant device can be powered with the **INJ-102GT++ Series** PoE Injector.  Typically in gigabit networks the maximum allowable CAT5 cable length is about 100 meters, due to the limitation of the Ethernet standards.  Because of its 24~57Vdc power input with boosting circuit, the total output power can be up to 90Watts or 180Watts[Note2] .  The installer doesn't need to worry about voltage drops caused by cable length.  The **INJ-102GT++ Series** PoE Injector can function with any PoE P.D. equipment which is fully compliant with the IEEE 802.3at/802.3af PoE standards.

**\*Note1: The equipment being powered must be fully IEEE 802.3at/802.3af compliant in order for the power supply to be able to sense the PoE devices signature and apply power. Power is supplied on Ethernet pins 1/2(V+) and 3/6 (V-)**
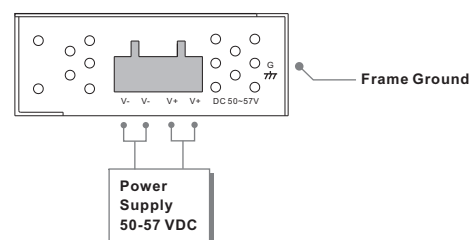
**\*Note2: LTPOE++™ PSE technology is applied on this product, only LTPOE++™ PD device attached can deliver more than 30 watts output power.**
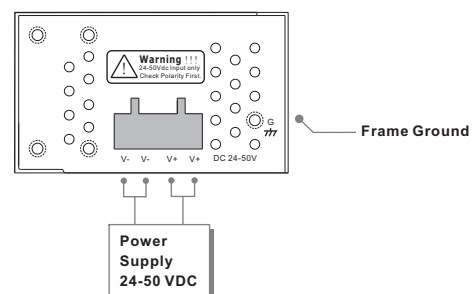
## Features

> **Supports 2x10/100/1000Base-T(X) for power and data Output**
> **Fully compliant with IEEE802.3at/802.3af standard**
> **Auto protection for Over Voltage Power Input and over current output**
> **Supports totally Power Output up to 90Watts (24V model) and 180Watts**
> **Supports Power Input range from 24Vdc to 50Vdc**
> **High reliability and rigid IP-30 housing**
> **DIN-Rail and wall-mount enabled**

## Power Connection Guide

### INJ-102GT++



V- V- V+ V+ DC 50~57V

Frame Ground

Power Supply 50-57 VDC

### INJ-102GT++-24V



Warning !!!
24-50Vdc input only
Check Polarity First

V- V- V+ V+ DC 24-50V

Frame Ground

Power Supply 24-50 VDC

## Specifications

| ORing PoE Injector Model | INJ-102GT++ | INJ-102GT++-24V |
|---|---|---|
| **Physical Ports** | | |
| 10/100/1000 Base-T(X) Ports in RJ45 Auto MDI/MDIX | 2 | |
| 10/100/1000Base-T(X) P.S.E. Port in RJ45 Auto MDI/MDIX | 2 | |
| **Operating Voltage** | | |
| Input Voltage | 50 ~ 57 Vdc | 24 ~ 50 Vdc |
| Output Power | 57V / 3157mA, 180 Watts max. [Note2] (Total of 2 ports) | 50V / 1800mA, 90 Watts max. [Note2] (Total of 2 ports) |
| **LED Indicators** | | |
| Power indicator | PWR: 1 x LED Green On: Power is on and functioning Normally. | |
| PoE Indicators | 2 x LED Blue On: PoE Device Link Blue Off: None PoE Device Detected | |
| **Protection** | | |
| Short Circuit Protection | Present | |
| Over Load Protection | Present | |
| High Voltage Protection | Present | |
| **Physical Characteristic** | | |
| Enclosure | IP-30 | |
| Dimension (W x D x H) | 26.1(W) x 70(D) x 95(H)mm (1.03x 2.76 x 3.74inch.) | 41(W) x 70(D) x 95(H)mm (1.61x 2.76 x 3.74inch.) |
| Weight (g) | 300 g | 369 g |
| **Environmental** | | |
| Storage Temperature | -40 to 80°C (-40 to 176°F) | |
| Operating Temperature | -25 to 70°C (-13 to 158°F) | |
| Operating Humidity | 5% to 90% 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 | |
| **Warranty** | 5 years | |

**\*Note2: LTPOE++™ PSE technology is applied on this product, only when an LTPoE++™ Powered Device (PD) is attached can the PSE port deliver more than 30 watts output power.**
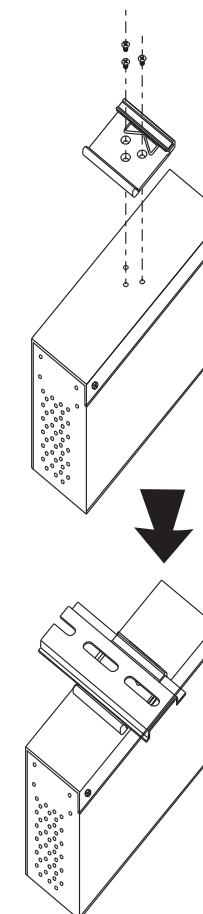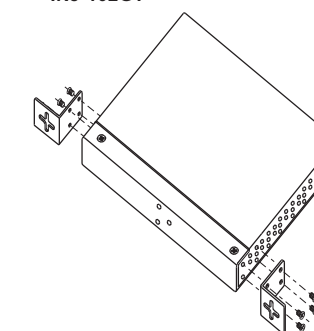
## Installation

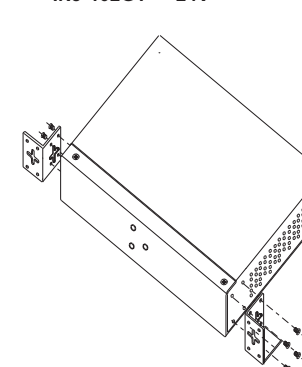### Din-Rail Install Step

■ INJ-102GT++
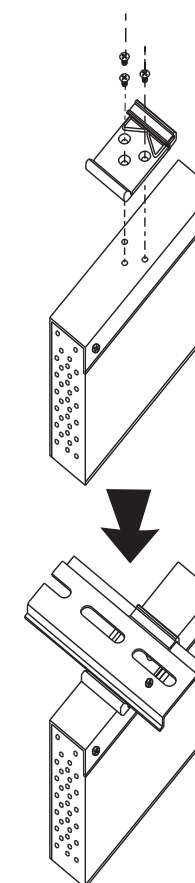


■ INJ-102GT++-24V



### Wall-mounted Install Step

■ INJ-102GT++



■ INJ-102GT++-24V

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# Quick Installation Guide

## INJ-102GT++ Series — Industrial Gigabit PoE++ Injector

## Front Panel

INJ-102GT++
- PWR
- Data IN
- 1
- PoE OUT
- 1  2 PoE
- Data IN
- 2
- PoE OUT 10/100/1000T

Power LED
Gigabit Data Port
Gigabit PoE Port

INJ-102GT++-24V
- PWR
- Data IN
- 1
- PoE OUT
- 1  2 PoE
- Data IN
- 2
- PoE OUT 10/100/1000T

PoE LED

Ⓐ    Ⓑ
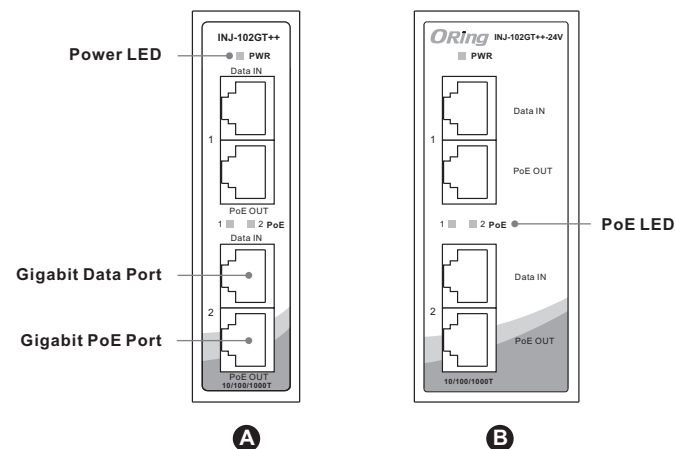
## Connector and Pin Definition

### 1000Base-T

| | RJ-45 Input (Data Only) | | RJ-45 Output (Data and Power) | |
|---|---|---|---|---|
| | Symbol | Description | Symbol | Description |
| 1 | BI_DA+ | Data BI_DA+ | BI_DA+ (Vdc+) | Data BI_DA+ and Feeding power(+) |
| 2 | BI_DA- | Data BI_DA- | BI_DA- (Vdc+) | Data BI_DA- and Feeding power(+) |
| 3 | BI_DB+ | Data BI_DB+ | BI_DB+ (Vdc-) | Data BI_DB+ and Feeding power(-) |
| 4 | BI_DC+ | Data BI_DC+ | BI_DC+ | Data BI_DC+ |
| 5 | BI_DC- | Data BI_DC- | BI_DC- | Data BI_DC- |
| 6 | BI_DB- | Data BI_DB- | BI_DB- (Vdc-) | Data BI_DB- and Feeding power(-) |
| 7 | BI_DD+ | Data BI_DD+ | BI_DD+ | Data BI_DD+ |
| 8 | BI_DD- | Data BI_DD- | BI_DD- | Data BI_DD- |

### 10/100Base-T(X)

| | RJ-45 Input (Data Only) | | RJ-45 Output (Data and Power) | |
|---|---|---|---|---|
| | Symbol | Description | Symbol | Description |
| 1 | Rx+ | Data Receive | Rx+ (Vdc+) | Data Receive and Feeding power(+) |
| 2 | Rx- | Data Receive | Rx- (Vdc+) | Data Receive and Feeding power(+) |
| 3 | Tx+ | Data Transmit | Tx+ (Vdc-) | Data Transmit and Feeding power(-) |
| 4 | NC | Not Connected | NC | Not Connected |
| 5 | NC | Not Connected | NC | Not Connected |
| 6 | Tx- | Data Transmit | Tx- (Vdc-) | Data Transmit and Feeding power(-) |
| 7 | NC | Not Connected | NC | Not Connected |
| 8 | NC | Not Connected | NC | Not Connected |

Note: pins 3 and 6 (-Vdc) should not be shorted to ground

## Accessory

① 4-Pin Terminal block

② Dust Cover (RJ-45)

③ Screw (M3 X3)

④ 25mm Wall-mounted kit

⑤ 40mm Wall-mounted kit

⑥ 25mm DIN-Rail kit

⑦ 40mm DIN-Rail kit
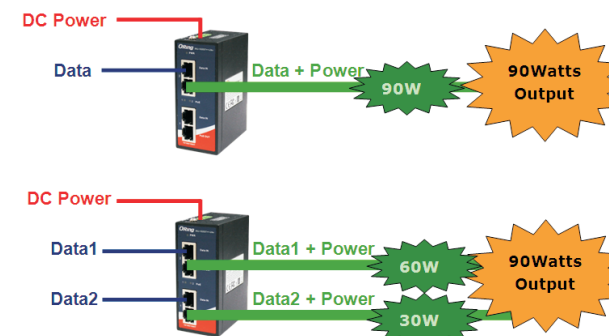
⑧ Power Cable with power jack

⑨ QIG

## Packing list

| Model name | Model Description | Accessory |
|---|---|---|
| INJ-102GT++ | Industrial 2-port Gigabit High Power PoE++ Injector | ①X 1, ④X 4, ⑤X 8, ⑥X 2, ⑧X 1, ⑨X 1, ⑩X 1 |
| INJ-102GT++-24V | Industrial 2-port Gigabit High Power PoE++ Injector, 24VDC Input | ①X 1, ④X 4, ⑤X 8, ⑥X 2, ⑧X 1, ⑨X 1, ⑩X 1 |

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## Application

DC Power
Data
Data + Power
90W
90Watts Output

DC Power
Data1
Data2
Data1 + Power
Data2 + Power
60W
30W
90Watts Output

## Communication Connections

### 1000Base-T Ethernet Port Connection

■ RJ45 (8-pin, MDI) Port Pinouts

| Pin | MDI |
|---|---|
| 1 | BI_DA+ |
| 2 | BI_DA- |
| 3 | BI_DB+ |
| 4 | BI_DC+ |
| 5 | BI_DC- |
| 6 | BI_DB- |
| 7 | BI_DD+ |
| 8 | BI_DD- |

■ RJ45 (8-pin, MDI-X) Port Pinouts

| Pin | MDI-X |
|---|---|
| 1 | BI_DB+ |
| 2 | BI_DB- |
| 3 | BI_DA+ |
| 4 | BI_DD+ |
| 5 | BI_DD- |
| 6 | BI_DA- |
| 7 | BI_DC+ |
| 8 | BI_DC- |

### 10/100Base-T(X) Ethernet Port Connection

■ RJ45 (8-pin, MDI) Port Pinouts

| Pin | Single |
|---|---|
| 1 | Tx+ |
| 2 | Tx- |
| 3 | Rx+ |
| 6 | Rx- |

■ RJ45 (8-pin, MDI-X) Port Pinouts

| Pin | Single |
|---|---|
| 1 | Rx+ |
| 2 | Rx- |
| 3 | Tx+ |
| 6 | Tx- |

■ RJ45 (8-pin) to RJ45 (8-Pin) Straight-Through Cable Wiring

Switch Port — Straight-Through Cable — NIC Port
RJ-45 Connector — RJ45 Plug Pin1 — RJ-45 Connector

| | | | | |
|---|---|---|---|---|
| Tx+ | 3 | | 3 | Rx+ |
| Tx- | 6 | | 6 | Rx- |
| Rx+ | 1 | | 1 | Tx+ |
| Rx- | 2 | | 2 | Tx- |
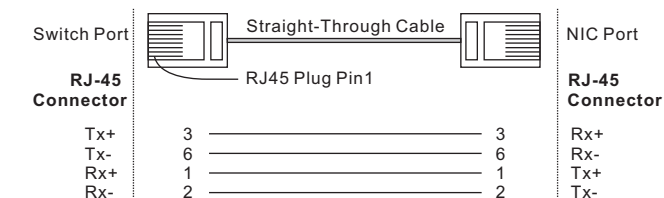
■ RJ45 (8-pin) to RJ45 (8-Pin) Cross-Over Cable Wiring

Switch Port (NIC Port) — Cross-Over Cable — Switch Port (NIC Port)
RJ-45 Connector — RJ45 Plug Pin1 — RJ-45 Connector

| | | | | | |
|---|---|---|---|---|---|
| (Rx+) | Tx+ | 3 | 1 | Rx+ | (Tx+) |
| (Rx-) | Tx- | 6 | 2 | Rx- | (Tx-) |
| (Tx+) | Rx+ | 1 | 3 | Tx+ | (Rx+) |
| (Tx-) | Rx- | 2 | 6 | Tx- | (Rx-) |