

# Quick Installation Guide

## TINJ-101GT-M12-24V

## EN50155 Industrial PoE Injector



### Introduction

ORing's Transporter™ series PoE Injectors are designed for industrial applications, such as rolling stock, vehicle, and railway applications. The **TINJ-101GT-M12** PoE Injector is an advanced IEEE802.3at compliant device with Intelligent Detection that provided 1-port 10/100/1000 Base-T(X) PoE output which is compliant with EN50155 requirement. It is specifically designed for the toughest industrial environments. **TINJ-101GT-M12** EN50155 PoE Injector use M12 connectors to ensure tight, robust connections, and guarantee reliable operation against environmental disturbances, such as vibration and shock. 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. Because of this intelligent detection, only an IEEE 802.3at/802.3af compliant device can be powered with the **TINJ-101GT-M12** PoE Injector. Typically in Ethernet networks the maximum allowable CAT5 cable length is about 100 meters, due to the limitation of the Ethernet standards. Because of its 50V insertion, the installer doesn't need to worry about voltage drops caused by cable length. The **TINJ-101GT-M12** PoE Injector can function with any PoE P.D. equipment which is fully compliant with the IEEE 802.3at/802.3af PoE standards.

**Note:** 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 4/6 (V+) and 5/8 (V-).

### Package Contents

The product 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
TINJ-101GT-M12-24V		1
QIG		1

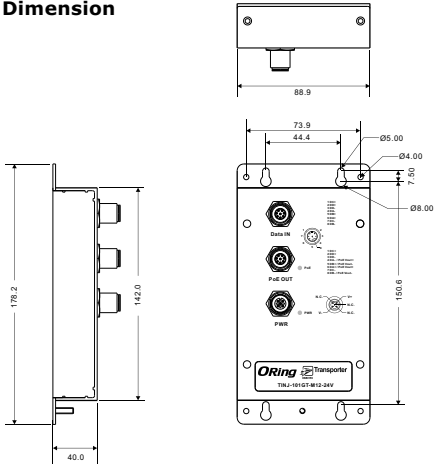
### Preparation

Before you begin installing the device, make sure you have all of the package contents available.

#### Safety & Warnings

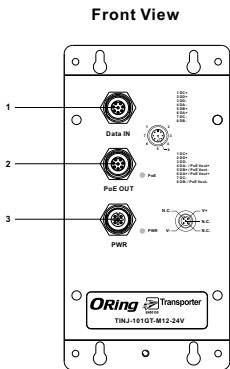
- Elevated Operating Ambient:** If installed in a closed environment, make sure the operating ambient temperature is compatible with the maximum ambient temperature (Tma) specified by the manufacturer.
- Reduced Air Flow:** Make sure the amount of air flow required for safe operation of the equipment is not compromised during installation.
- Mechanical Loading:** Make sure the mounting of the equipment is not in a hazardous condition 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 (Tolerance ±0.5mm)

#### Panel Layouts



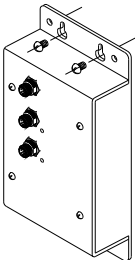
1. Data input port
2. PoE output port
3. Power input port
4. PoE status LED
5. Power status LED

### Installation

#### Wall-mount

The device can be fixed to the wall. Follow the steps below to install the device on the wall.

- Step 1:** Hold the device upright against the wall  
**Step 2:** Insert four screws through the large opening of the keyhole-shaped apertures at the top and bottom of the unit and fasten the screw to the wall with a screwdriver.  
**Step 3:** Slide the device downwards and tighten the four screws for added stability.



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 PoE injector between the wall and the screws.

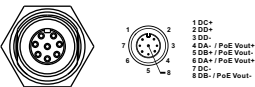
#### Network Connection

The device provides one data input port and one PoE data output port in M12 connector. 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-TX	Cat. 3, 4, 5 100-ohm	UTP 100 m (328 ft)	M12
100BASE-TX	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 of the LAN ports, please refer to the following tables.



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

M12 Input (Data Only)			M12 Output (Data and Power)	
Pin	Symbol	Description	Symbol	Description
1	NC	Not Connected	NC	Not Connected
2	NC	Not Connected	NC	Not Connected
3	NC	Not Connected	NC	Not Connected
4	Rx-	Data Receive	Rx- (Vdc+)	Data Receive and Feeding power(+)
5	Tx+	Data Transmit	Tx+ (Vdc-)	Data Transmit and Feeding power(-)
6	Rx+	Data Receive	Rx+ (Vdc+)	Data Receive and Feeding power(+)
7	NC	Not Connected	NC	Not Connected
8	Tx-	Data Transmit	Tx- (Vdc-)	Data Transmit and Feeding power(-)

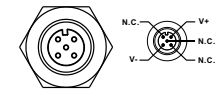
#### 1000 Base-T

M12 Input (Data Only)			M12 Output (Data and Power)	
Pin	Symbol	Description	Symbol	Description
1	BI_DC+	Data BI_DC+	BI_DC+	Data BI_DC+
2	BI_DD+	Data BI_DD+	BI_DD+	Data BI_DD+
3	BI_DD-	Data BI_DD-	BI_DD-	Data BI_DD-
4	BI_DA-	Data BI_DA-	BI_DA- (Vdc+)	Data BI_DA- and Feeding Power(+)
5	BI_DB+	Data BI_DB+	BI_DB+ (Vdc-)	Data BI_DB+ and Feeding Power(-)
6	BI_DA+	Data BI_DA+	BI_DA+ (Vdc+)	Data BI_DA+ and Feeding Power(+)
7	BI_DC-	Data BI_DC-	BI_DC-	Data BI_DC-
8	BI_DB-	Data BI_DB-	BI_DB- (Vdc-)	Data BI_DB- and Feeding Power(-)

**Note:** pins 5 and 8 (-Vdc) should not be shorted to ground

#### Power input

The device provides one set of power supply using the M12 5-pin female connector on the front panel. Please refer to the following figure for pin assignments.



# Quick Installation Guide

## TINJ-101GT-M12-24V

## EN50155 Industrial PoE Injector

### Configurations

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

LED	Color	Status	Description
Power	Green	On	Power is on
PoE	Blue	On	PoE device is detected
		Blinking	Detecting PoE device
		Off	No PoE device is detected

### Specifications

ORing Model	TINJ-101GT-M12-24V
<b>Physical Ports</b>	
10/100/1000Base T(X) with P.S.E. Ports in M12 Auto MDI/MDIX	1 x M12 connector (8 pin female A-coding)
10/100/1000Base T(X) Ports in M12 Auto MDI/MDIX	1 x M12 connector (8 pin female A-coding)
<b>Operating Voltage</b>	
Input Voltage	Railway 24VDC (12 ~ 57VDC) on 5-pin M12 female A-coding
Output Power	50V / 600mA, 30 Watts max.
<b>Protection</b>	
Short Circuit Protection	Present
Over Load Protection	Present
<b>Physical Characteristic</b>	
Enclosure	IP-40
Dimension (W x D x H)	88.9 (w) x 40 (D) x 178.2 (H) mm (3.5 x 1.57 x 7.02 inch.)
Weight (g)	446g
<b>Environmental</b>	
Storage Temperature	-40 to 80°C (-40 to 176°F)
Operating Temperature	-40 to 75°C (-13 to 167°F)
Operating Humidity	5% to 95% Non-condensing
<b>Regulatory Approvals</b>	
EMC	CE EMC (EN 55024, 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	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 61000-4-8(PFMF), IEC/EN 61000-4-11 (DIP)
Shock	IEC60068-2-27
Free Fall	IEC60068-2-31
Vibration	IEC60068-2-6
Safety	EN 60950-1
Other	EN 50155
MTBF	3,513,152hrs
Warranty	5 years



Copyright© 2018 ORing  
All rights reserved.



**ORing Industrial Networking Corp.**

TEL: +886-2-2218-1066 Website: [www.oringnet.com](http://www.oringnet.com)  
FAX: +886-2-2218-1014 E-mail: [support@oringnet.com](mailto:support@oringnet.com)