

**24V Booster**



# INJ-IG60-24

Gigabit Ethernet PoE+ Injector  
IEEE802.3at/af, 15.4/30/36/60/72W  
(24V Booster)



INJ-IG60-24 is an industrial grade, single port, gigabit Ethernet PoE (Power over Ethernet) injector with power boost technology. PoE describes a system to pass electrical power safely, along with data, on Ethernet cabling. The original IEEE 802.3af-2003 PoE standard provides up to 15.4 W of DC power to each device. The updated IEEE 802.3at-2009 PoE standard also known as PoE+ or PoE plus, provides up to 30 W of power. Additionally, INJ-IG60-24 can provide up to 36/60/72W through the non-standard use of all 4 pairs of category 5 cable. Housed in a rugged DIN rail or wall mountable enclosure, this product is designed for harsh environments, such as industrial networking, security, intelligent transportation systems (ITS) and is also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications (See Figure 1). Standard operating temperature range models (-10 to 60°C) and wide operating temperature range models (-40 to 75°C) fulfill the special needs of industrial automation applications.

## Features

- Provides 1 port IEEE802.3at/af PoE Injector
- Power output 15.4W, 30W, 36W, 60W, 72W select by DIP SW
- 24/48VDC (20~57VDC) redundant dual input power with built-in very high efficiency booster (94~96%) to rise up 55 VDC for PoE output
- Regulate PoE output voltage (55VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meter (Figure 2)
- PoE Mode A/B Select by DIP SW
- 4 Pairs (60W/72W) PD handshake mode select by DIP SW (Such as AXIS® IP cam)
- Wide operating temperature -40 ~ 75°C (INJ-IG60-E24)
- CE, FCC, Railway traffic EN50121-4 certified
- Heavy industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- IP30 rugged metal housing and fanless

## Specifications

<b>IEEE Standard</b>	IEEE 802.3 10Base-T Ethernet IEEE 802.3u 100Base-TX Fast Ethernet IEEE 802.3ab 1000Base-T Gigabit Ethernet IEEE802.3at Power over Ethernet+, PoE+ IEEE802.3af Power over Ethernet, PoE
<b>PoE Standard</b>	IEEE802.3at, IEEE802.3af
<b>PoE Standard &amp; RJ-45 Pin Assignment</b>	RJ-45 support IEEE 802.3at/af Middle-Span Alternative B mode or End-Span Alternative A mode, set by DIP SW End-Span, Alternative A mode Positive (V+): RJ-45 pin 1, 2. Negative (V-): RJ-45 pin 3, 6. Data (1, 2, 3, 6, 4, 5, 7, 8) Middle-Span, Alternative B mode Positive (V+): RJ-45 pin 4,5 Negative (V-): RJ-45 pin 7,8 Data (1, 2, 3, 6, 4, 5, 7, 8)
<b>Network Connector</b>	1 RJ-45 for 10/100/1000Base-T Data, and 1 RJ-45 for 10/100/1000Base-T Data with PoE Output power
<b>Network Cable</b>	UTP/STP above Cat. 5e cable EIA/TIA-568 100-ohm (100m)
<b>LED</b>	Per unit: Power 1 (Green), Power 2 (Green), Fault (Amber) End-Span, Alternative A mode Positive (V+): RJ-45 pin 1, 2. Negative (V-): RJ-45 pin 3, 6. Data (1, 2, 3, 6, 4, 5, 7, 8) 4/2 Pairs (Green) ON: 4 Pairs PoE Power output for 60W PoE OFF: 2 Pairs PoE Power output
<b>DIP SW</b>	SW1 Reserved SW2 ON: Hi Power 36W 36W PoE output OFF: Standard PoE 802.3af (15.4W), 802.3at (30W) SW3 ON: 4 Pair PoE Pin Ultra-High Power 60W/72W PoE Output OFF: 2 Pair PoE Pin depend on DIP SW 1,2 SW4 ON: Alternative B mode PoE Power Pin 4, 5, 7, 8 (When DIP SW 3 Off) OFF: Alternative A mode PoE Power Pin 1, 2, 3, 6 (When DIP SW 3 Off)
<b>Reverse Polarity Protection</b>	Supported for power input

<b>Overload Current Protection</b>	Supported															
<b>Power Supply</b>	Redundant Dual DC 24/48V (20~57VDC) Input power (Removable Terminal Block) Built-in very high efficiency booster(97~99%) to rise up 55 VDC for PoE output Regulated PoE output voltage (55VDC) to stabilize PoE device, and guarantee delivery PoE power distance to 100meter (Figure 2)															
<b>PoE Power Budget</b>	Maximum Ultra High Power 60W, IEEE802.3at 30W, IEEE802.3at High power 36W, IEEE802.3af 15.4W															
<b>Power Consumption</b>	INJ-IG60-24 in 30W mode (2 Pair)															
	<table border="1"> <thead> <tr> <th>Input Voltage</th> <th>Input Power Consumption</th> <th>Device Power Consumption</th> <th>PoE Power Budget</th> <th>Boost Efficiency</th> </tr> </thead> <tbody> <tr> <td>24VDC</td> <td>33W</td> <td>1.4W</td> <td>30W</td> <td>94.90%</td> </tr> <tr> <td>48VDC</td> <td>33.2</td> <td>1.9W</td> <td>30W</td> <td>95.80%</td> </tr> </tbody> </table>	Input Voltage	Input Power Consumption	Device Power Consumption	PoE Power Budget	Boost Efficiency	24VDC	33W	1.4W	30W	94.90%	48VDC	33.2	1.9W	30W	95.80%
Input Voltage	Input Power Consumption	Device Power Consumption	PoE Power Budget	Boost Efficiency												
24VDC	33W	1.4W	30W	94.90%												
48VDC	33.2	1.9W	30W	95.80%												
	INJ-IG60-24 in 60W mode (4 Pair)															
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Input Voltage	Input Power Consumption	Device Power Consumption	PoE Power Budget	Boost Efficiency												
24VDC	65.2W	1.4W	60W	94.10%												
48VDC	64.7W	1.9W	60W	95.50%												
<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1 A @24VDC															
<b>Removable Terminal Block</b>	Provides 2 redundant power, alarm relay contact, 6 Pin															
<b>Operating Temperature</b>	-10 ~ 60°C (INJ-IG60-24) -40 ~ 75°C (INJ-IG60-E24)															
<b>Operating Humidity</b>	5% to 95% (Non-condensing)															
<b>Storage Temperature</b>	-40 ~ 85°C															
<b>Housing</b>	Rugged Metal, IP30 Protection and fanless															
<b>Dimensions</b>	106 x 31.6 x 142 mm (D x W x H)															
<b>Weight</b>	0.425kg															
<b>Installation Mounting</b>	DIN Rail mounting, or Wall Mounting (Optional)															
<b>MTBF</b>	1,403,339 Hours (MIL-HDBK-217)															
<b>Warranty</b>	5 years															

Certification	
EMC	CE
EMI	FCC Part 15 Subpart B Class A, CE
Railway Traffic	EN50121-4
Immunity for Heavy Industrial environment	EN 61000-6-2
Emission for Heavy industrial environment	EN 61000-6-4

<b>EMS (Electromagnetic Susceptibility) Protection Level</b>	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (EFT) Level 3, Criteria A
	EN 61000-4-5 (Surge) Level 3, Criteria B
	EN 61000-4-6 (CS) Level 3, Criteria A
<b>Safety</b>	EN61000-4-8 (PFMF) Field strength 300A/m Criteria A
	UL60950-1 (pending)
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-32
<b>Vibration</b>	IEC 60068-2-6

## Application

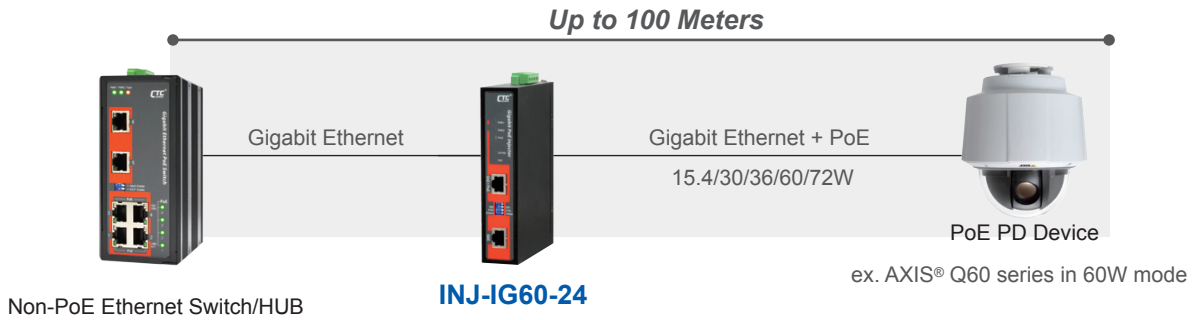
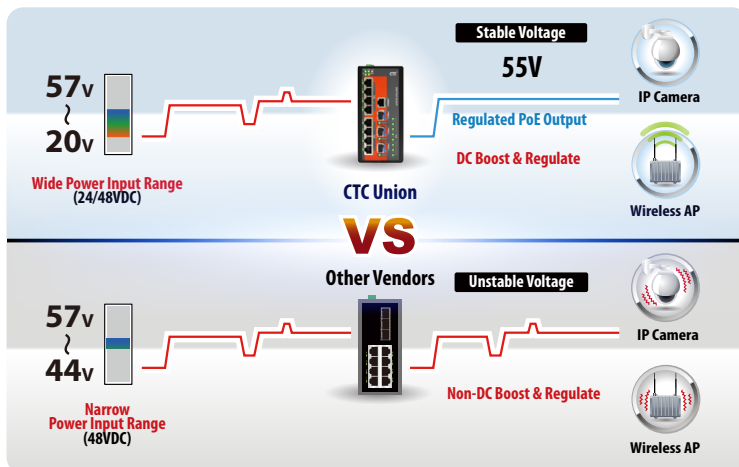


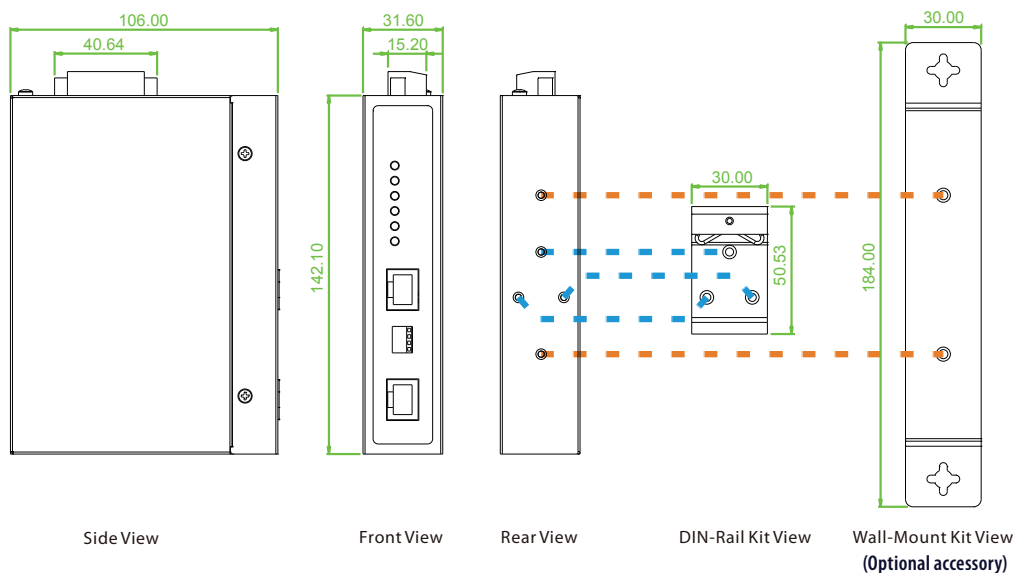
Figure 1 : INJ-IG60-24 Gigabit Ethernet PoE Injector



- Regulated PoE output voltage (55VDC) to stabilize PoE device
- Guarantee delivery PoE power distance to 100 meter
- Wide range input power 24/48VDC (20~57VDC)
- Built-in very high efficiency (94~97%) to boost PoE output voltage

Figure 2 : Very high efficiency boost technology for PoE

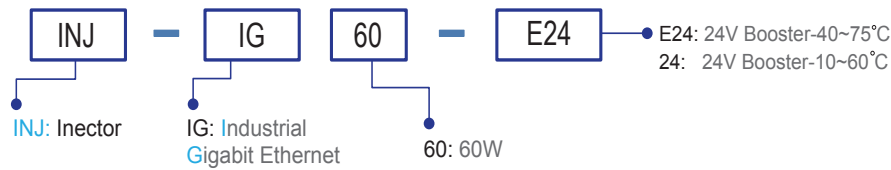
## Dimensions



## Ordering Information

Model Name	Ethernet	PoE Port		Power input	Certification			Operating Temperature
	10/100/1000 Base-T	IEEE802.3at (PSE)	Power Budget	Redundant	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE FCC	
INJ-IG60-24	1	1	15/30/36/60/72W	24/48VDC	V	V	V	-10~60°C
INJ-IG60-E24	1	1	15/30/36/60/72W	24/48VDC	V	V	V	-40~75°C

### Model Naming Rule



## Optional Accessories

### Wall mount kit Accessories

IND-WMK01	Wall Mount kit for Industrial product, 184 x 30mm
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## Package List

- INJ-IG60-24 device
- Quickly installation guide
- Din Rail bracket with screws
- Terminal block