



# INJ-IG60-24

Gigabit Ethernet PoE+ Injector IEEE 802.3at/af, 15.4/30/36/60/72W (12VDC 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 IEEE 802.3at/af PoE Injector
- Power output 15.4W, 30W, 36W, 60W, 72W select by DIP SW
- 12/24/48VDC (10~57VDC) redundant dual input power with built-in very high efficiency booster (91~96%) 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, Safety EN60950-1, 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 IEEE 802.3at Power over Ethernet+, PoE+ IEEE 802.3af Power over Ethernet, PoE
<b>PoE Standard</b>	IEEE 802.3at, IEEE 802.3af
<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) 4/2 Pairs (Green) ON: 4 Pairs PoE Power output for 60/72W PoE OFF: 2 Pairs PoE Power output
<b>DIP SW</b>	SW1 ON: Alt B mode (4,5,7,8) OFF: Alt A mode (1,2,3,6) SW2 ON: Hi Power PoE 36W(in 2 pair), or 72W (in 4 pair) OFF: Standard PoE 15.4W/30W (in 2 pair), or 60W (in 4 pair) 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: For Particular PD in 4 pair mode, PoE Handshake by pin 1,2,3,6,4,5,7,8 (Such as AXIS® Q60 series ) OFF: General PD
<b>Reverse Polarity Protection</b>	Supported for power input
<b>Overload Current Protection</b>	Supported

<b>Power Supply</b>	Redundant Dual DC 12/24/48V (10~57VDC) Input power (Removable Terminal Block)  Built-in very high efficiency booster(91~96%) 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, IEEE 802.3at 30W, IEEE 802.3at High power 36W, IEEE 802.3af 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>12VDC</td> <td>33.9W</td> <td>1.1W</td> <td>30W</td> <td>91.46%</td> </tr> <tr> <td>24VDC</td> <td>33W</td> <td>1.4W</td> <td>30W</td> <td>94.90%</td> </tr> <tr> <td>48VDC</td> <td>33.2W</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	12VDC	33.9W	1.1W	30W	91.46%	24VDC	33W	1.4W	30W	94.90%	48VDC	33.2W	1.9W	30W	95.80%
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	INJ-IG60-24 in 60W mode (4 Pair)																				
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<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 (EN55024, EN55032)
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
	EN61000-4-8 (PFMF) Field strength 300A/m Criteria A
<b>Safety</b>	EN60950-1
<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

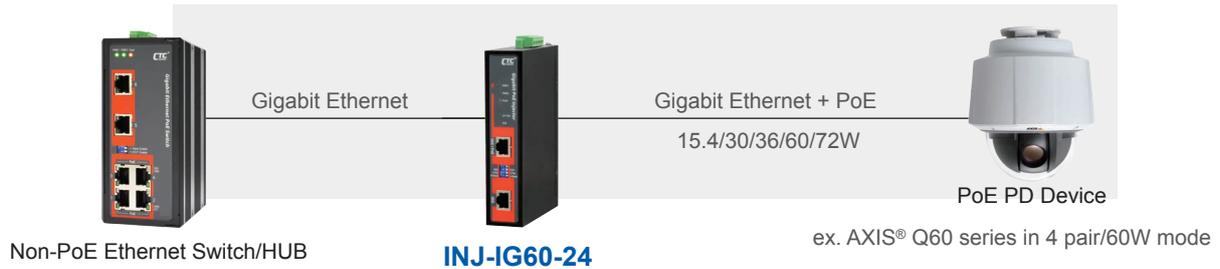
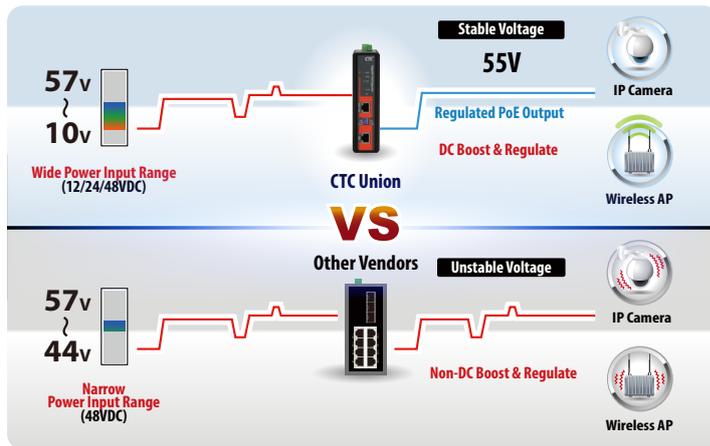
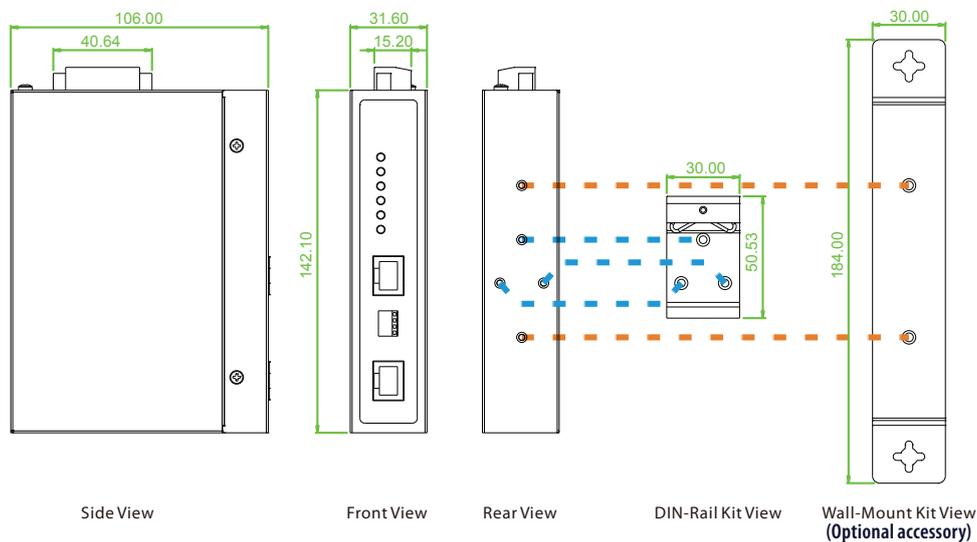


Figure 2 : Very high efficiency boost technology for PoE



- Regulated PoE output voltage (55VDC) to stabilize PoE device
- Guarantee delivery PoE power distance to 100 meter
- Wide range input power 12/24/48VDC (10~57VDC)
- Built-in very high efficiency (91~96%) to boost PoE output voltage

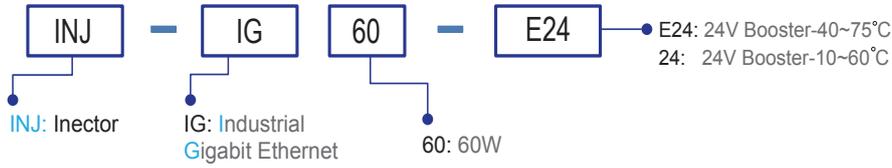
## Dimensions



## Ordering Information

Model Name	Ethernet	PoE Port		Power input	Certification				Operating Temperature
	10/100/1000 Base-T	IEEE 802.3at (PSE)	Power Budget	Redundant	Safety EN60950-1	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE FCC	
INJ-IG60-24	1	1	15/30/36/60/72W	12/24/48VDC	V	V	V	V	-10~60°C
INJ-IG60-E24	1	1	15/30/36/60/72W	12/24/48VDC	V	V	V	V	-40~75°C

### Model Naming Rule



### Package List

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

## Optional Accessories

### Wall mount kit Accessories

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