

# Industrial FE Converter with PoE



30 Watts,  
12V Booster

## IMC-100-PH12

10/100Base-TX to 100Base-FX with PoE+ PSE  
Fiber Converter (30 Watts, 12V Booster)

IMC-100-PH12 is a 10/100Base-TX to 100Base-FX non-managed Ethernet media converter that also injects PoE+ power through the electrical RJ-45 port. Housed in rugged DIN rail or wall mountable enclosures, these converters are designed for harsh environments, such as industrial networking, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications.

### Features

- Conversion between 10/100Base-TX and 100Base-FX SC or ST Fiber interface
- 12/24/48VDC (9.6~57VDC) redundant dual input power with built-in very high efficiency booster (98~99%) 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)
- Provides IEEE802.3at PoE output (30Watts)
- Supports Remote PD reset by fiber port link down (Figure 3)
- Supports LFPT (Link Fault Pass Through)
- IP30 rugged metal housing and fanless
- Wide operating temperature -20~75°C (IMC-100-PHE12)
- CE, FCC, Railway traffic EN50121-4 certification
- Industrial grade EMS,EMI EN61000-6-2, EN61000-6-4 certification
- Supports Jumbo frame 9K bytes packet

### Specifications

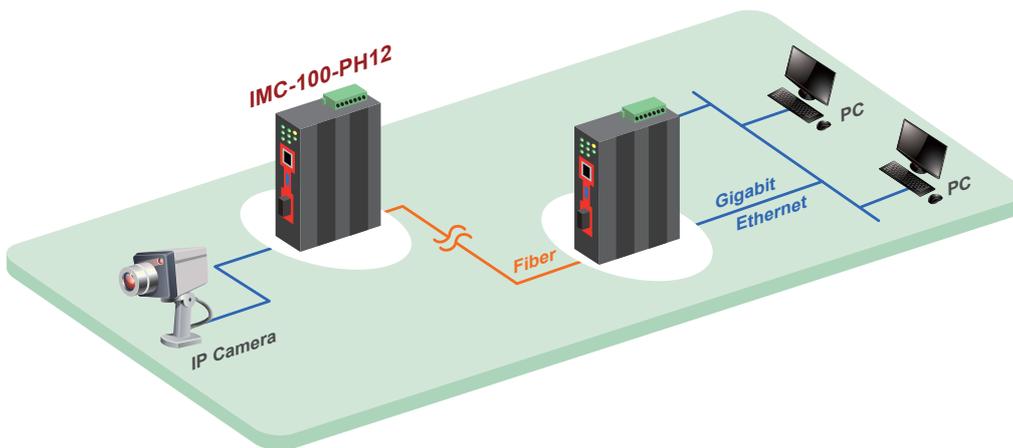
<b>Standard</b>	IEEE802.3 10Base-T 10Mbit/s Ethernet IEEE802.3u 100Base-TX, 100Base-FX, Fast Ethernet IEEE802.3x Flow Control and Back pressure IEEE802.3at PoE+ (Power over Ethernet enhancement) IEEE802.3af PoE (Power over Ethernet) IEEE802.1q Tag VLAN																								
<b>RJ45 Ports</b>	10/100Base-TX																								
<b>Fiber Ports</b>	100Base-FX with SC or ST connector																								
<b>Data Process Architecture</b>	Store and Forward mode or Pass Through mode (Set by DIP SW)																								
<b>Jumbo Frame</b>	9K bytes																								
<b>Fiber Parameters</b>	Fiber Cable (Multi-mode): 50/125um, 62.5/125um Fiber Cable (Single-mode): 9/125um Wavelength: 1310nm (Multi-mode/Single-mode) Available Distance: 2KM (Multi-mode), 30KM (Single-mode), 50KM(Single-mode)																								
<b>Link Fault Pass Through (LFPT)</b>	TX- Fiber: If TX port link down, the media converter will force Fiber port to link down Fiber-TX: If Fiber port link down, the media converter will force TX port to link down																								
<b>DIP Switch</b>	ON: Disable Alarm For Power Loss OFF: Enable Alarm For Power Loss ON: Disable Alarm For Port Link-Failure OFF: Enable Alarm For Port Link-Failure ON: LFPT Enable, OFF: LFPT Disable Data process Architecture : ON : Pass through mode OFF : Store and Forward Switch mode PoE Output OFF: Enable PoE output ON: Disable PoE output Remote PD reset (Figure 3) OFF : Disable Remote PD reset ON: Enable Remote PD reset by fiber port link down																								
<b>Fiber Connector</b>	Fiber: SC / ST (Multi-mode, 2KM), SC / ST (Single-mode, 30KM, 50KM)																								
<b>RJ45 Connector and Pin Assignment</b>	RJ-45 Socket: CAT-3/5 (10/100Mbps) Twisted Pair cable Auto MDI/MDI-X and Auto-Negotiation Function Support RJ-45 Port support IEEE 802.3at/af End-Span, Alternative A mode. PoE (V+): RJ-45 pin 1, 2. PoE (V-): RJ-45 pin 3, 6. Data (1,2,3,6)																								
<b>LED</b>	Per Unit :Power 1 (Green), Power 2 (Green), Fault (Amber) Fiber LNK/ACT (Green): ON: Connected to network OFF: Not connected to network BLK: Receive /Transmit Data																								
<b>LED</b>	Fiber Speed :Green : 100 Base- X RJ-45 Port: Speed: 10 (OFF), 100 (Green) LNK/ACT for RJ45(Green): ON: Connected to network OFF: Not connected to network BLK: Networking is active PoE States (Green) Flash: PoE Fault (Over-load or short ) ON: PoE normal working, OFF : PoE No Power output																								
<b>Reverse Polarity Protection</b>	Present for Power Input																								
<b>Overload Current Protection</b>	Present																								
<b>Power Supply</b>	12/24/48VDC (9.6~57VDC), Redundant power with polarity reverse protect function and 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>	30W																								
<b>Power Consumption</b>	<table border="1"> <thead> <tr> <th>Input Voltage</th> <th>Total Power Consumption</th> <th>Device Power Consumption</th> <th>PoE Budget</th> <th>Boost Efficiency</th> </tr> </thead> <tbody> <tr> <td>12VDC</td> <td>34W</td> <td>3.5W</td> <td>30W</td> <td>98.4%</td> </tr> <tr> <td>24VDC</td> <td>34.4W</td> <td>4.1W</td> <td>30W</td> <td>99.0%</td> </tr> <tr> <td>48VDC</td> <td>34.9W</td> <td>4.3W</td> <td>30W</td> <td>98.0%</td> </tr> </tbody> </table>	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget	Boost Efficiency	12VDC	34W	3.5W	30W	98.4%	24VDC	34.4W	4.1W	30W	99.0%	48VDC	34.9W	4.3W	30W	98.0%				
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<b>Alarm Relay Contact</b>	Relay outputs with current carrying capacity of 1 A @24VDC																								
<b>Removable Terminal Block</b>	Provide 2 redundant power, alarm relay contact, 6 Pin																								
<b>Operating Humidity</b>	5%~95% (Non-condensing)																								
<b>Operating Temperature</b>	-10°C~60°C (IMC-100-PH12) -20°C~75°C (IMC-100-PHE12)																								
<b>Storage Temperature</b>	-40°C~85°C																								
<b>Housing</b>	Rugged Metal, IP30 Protection and fanless																								
<b>Dimensions</b>	106 x 62.5 x 135 mm (D x W x H)																								
<b>Weight</b>	655g																								
<b>Installation</b>	DIN Rail mounting or wall mounting																								
<b>MTBF</b>	419,822hrs																								
<b>Warranty</b>	5 years																								

Certifications	
EMC	CE
EMI	FCC Part 15 Subpart B Class A, CE EN 55022 Class A
Railway Traffic	EN50121-4
Immunity for Heavy Industrial environment	EN 61000-6-2
Emission for Heavy industrial environment	EN 61000-6-4

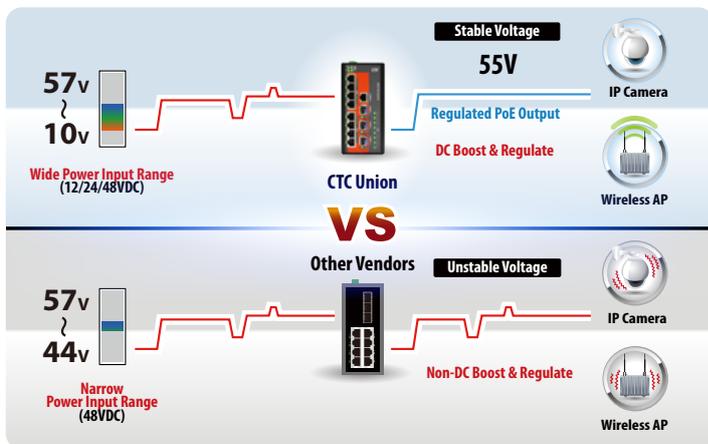
EMS (Electromagnetic Susceptibility) Protection level	EN61000-4-2 (ESD) Level 3, Criteria B
	EN61000-4-3 (RS) Level 3, Criteria A
	EN61000-4-4 (EFT) Level 3, Criteria A
	EN61000-4-5 (Surge) Level 3, Criteria B
	EN61000-4-6 (CS) Level 3, Criteria A
	EN61000-4-8 (PFMF) Field strength 300A/m Criteria A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

## Application

► Figure 1 : IMC-100-PH12 Industrial PoE Transmission

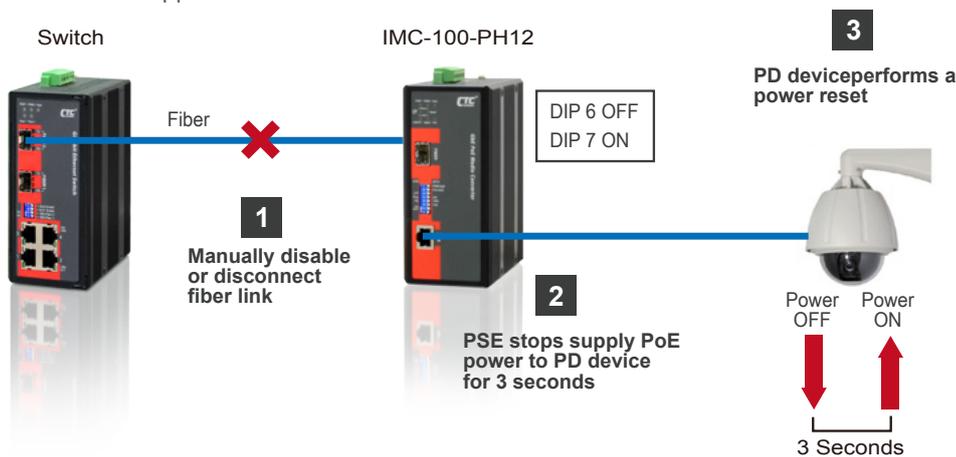


► Figure 2 : High efficiency boost technology for PoE

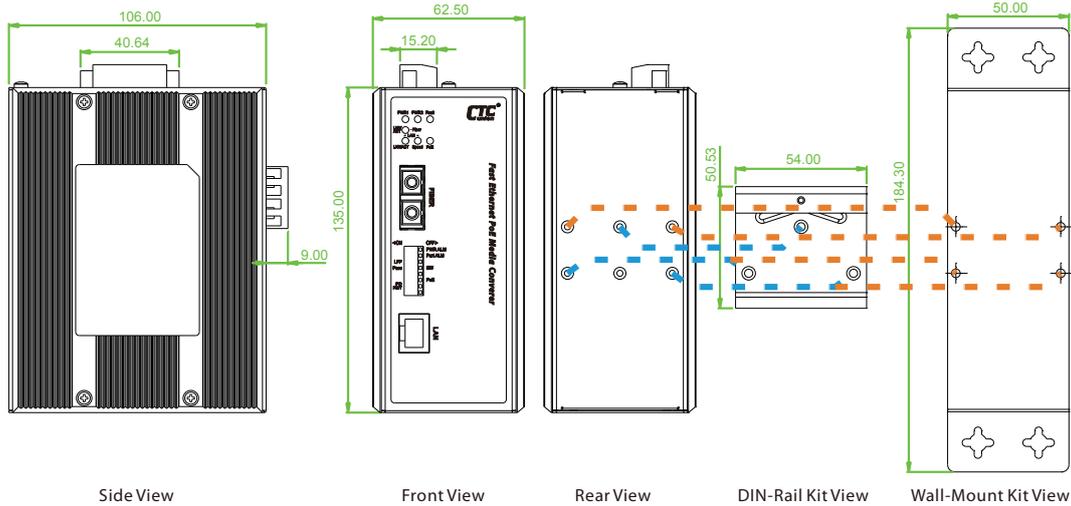


- Regulated PoE output voltage (55VDC) to stabilize PoE device
- Guarantee delivery PoE power distance to 100 meter
- Wide range input power 12/24/48VDC (10~57VDC)
- Built-in very high efficiency (94~97%) to boost PoE output voltage

► Figure 3 : Remote PD Reset Application



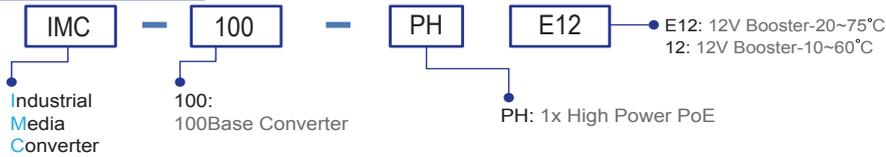
## Dimensions



## Ordering Information

Model Name	UTP		Fiber		PoE Port		Input Voltage (Boost)	Certification				Operating Temperature
	10/100 Base-TX	100Base-FX	SC/ST	100Base-FX	IEEE802.3at (PSE)	Power Budget		Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC	
IMC-100-PH12	1	1	SC/ST	1	30W	12/24/48VDC	V	V	V	V	-10~60 C	
IMC-100-PHE12	1	1	SC/ST	1	30W	12/24/48VDC	V	V	V	V	-20~75 C	

### Model Naming Rule



Fiber Connector Type	Connectivity Distance
SC,ST	002: 2km (M/M) 030: 30km (S/M) 050: 50km (S/M) 020A: WDM Bidi 20km A Type (TX:1310nm) 020B: WDM Bidi 20km B Type (TX:1550nm)

Temperature Connector Type Connectivity Distance

**IMC-100 -PH □ 12 - □ □ □ □ □**

Example: IMC-100 - PHE12 - SC002

## Optional Accessories

### Industrial Power Supply

DR-4524	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 48W, -10 ~ +50°C
MDR-40-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 40W, -20 ~ +70°C

### Package List

- IMC-100-PH12 device
- Quickly installation guide
- Din Rail bracket with screws
- Wall mount bracket with screws
- Terminal block