IMC-100-PH12

100/1000Base-T to 100/1000Base-X SFP with PoE+ (PSE) Fiber Converter (30W, 12V Booster)

IMC-100-PH12 is a 10/100Base-TX to 100Base-FX unmanaged 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 (See Figure 1).

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
- CE, FCC, Railway traffic EN50121-4 certification
- Heavy industrial grade EMS,EMI EN61000-6-2, EN61000-6-4 certification
- Supports Jumbo frame 9K bytes packet

Specifications

Standard	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
RJ45 Ports	10/100Base-TX Auto MDI/MDI-X and Auto-Negotiation Function Supports UTP CAT.5e Twisted Pair cable
Fiber Ports	100Base-FX with SC or ST connector
Data Process Architecture	Store and Forward mode or Pass Through mode (Set by DIP SW)
Jumbo Frame	9K bytes
Fiber Parameters	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)
Link Fault Pass Through (LFPT)	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
DIP Switch	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
Fiber Connector	Fiber: SC / ST (Multi-mode, 2KM), SC / ST (Single-mode, 30KM, 50KM)

RJ45 Connector and Pin Assignment	RJ-45 Socket: CAT.5e (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)
LED	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
	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
Reverse Polarity Protection	Supported for Power Input
Overload Current Protection	Supported
Power Supply	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)
PoE Power budget	30W

Power Consumption	Power consumption & Boost efficiency

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%

Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
Removable Terminal Block	Provide 2 redundant power, alarm relay contact, 6 Pin
Operating Humidity	5%~95% (Non-condensing)
Operating Temperature	-20°C ~ 75°C
Storage Temperature	-40°C ~ 85°C
Housing	Rugged Metal, IP30 Protection and fanless
Dimensions	106 x 62.5 x 135 mm (D x W x H)
Weight	655g
Installation	DIN Rail mounting, or wall mounting (Optional)
MTBF	801,948 Hours MIL-HDBK-217
Warranty	5 years

Certifications	
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
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

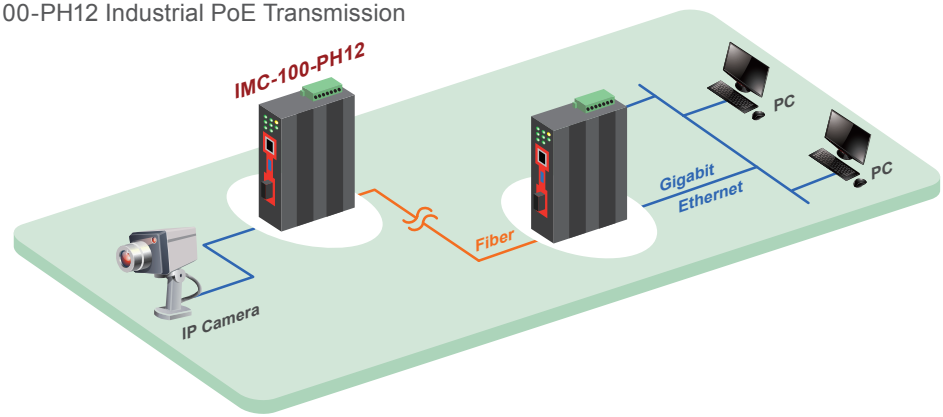
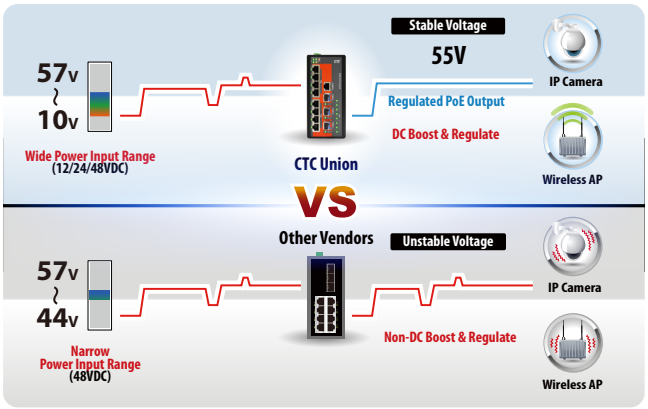
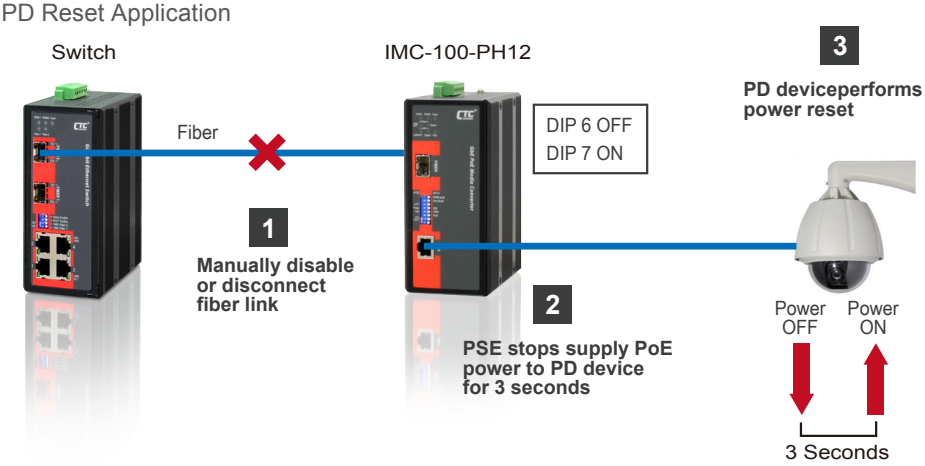


Figure 2 : High efficiency boost technology for PoE

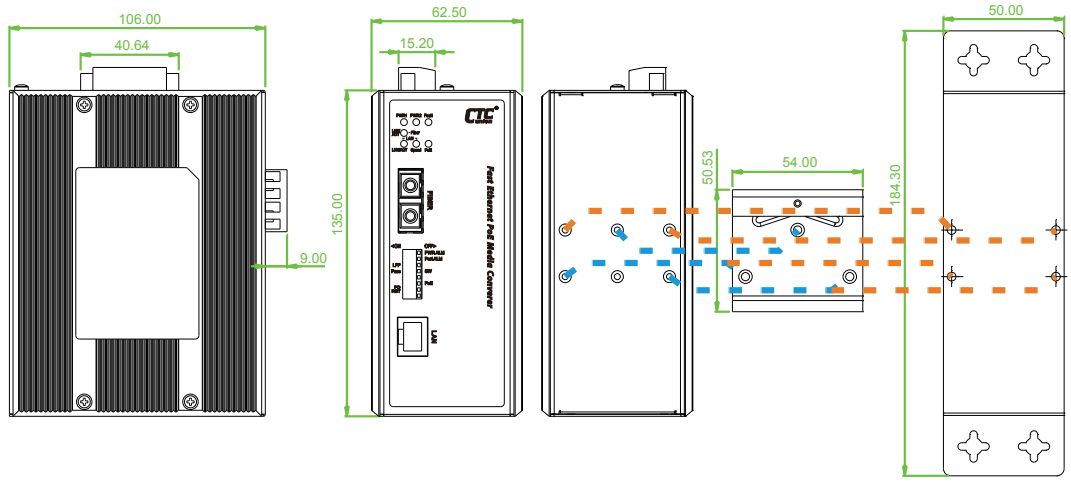


- Regulated PoE output voltage (55VDC) to stabilize PoE device
- Guarantee delivery PoE power distance to 100 meters
- Wide range input power 24/48VDC (20~57VDC)
- Built-in very high efficiency (94~97%) to boost PoE output voltage

Figure 3 : Remote PD Reset Application



Dimensions



Side View | Front View | Rear View | DIN-Rail Kit View | Wall-Mount Kit View (Optional accessory)

Ordering Information

Model Name	RJ45 UTP	Fiber	PoE Port		Power Input	Certification				Operating Temperture
	10/100 Base-TX	100Base-FX	IEEE802.3at (PSE)	Power Budget	Redundant	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC	
IMC-100-PHE12	1	1 SC/ST	1	30W	12/24/48VDC	V	V	V	V	-20~75℃

Model Naming Rule

IMC – 100 – PH – E12 – SC002 → See below for more detail

- IMC: Industrial Media Converter
- 100: 100Base Converter
- PH: 1x High Power PoE
- E12: 12V Booster-20~75℃

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

Package List

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

Optional Accessories

Wall mount kit accessories

IND-WMK02	Wall Mount kit for Industrial product, 184 x 50mm