IMC-1000S-PH12

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

CE FC EN50121-4 EN61000-6-2 EN61000-6-4 PoE Regulated

IMC-1000S-PH12 is a family of unmanaged Gigabit Ethernet media converters that support conversion between electrical 10/100/1000Base-T and optical 1000Base-X Ethernet and as PSE (Power Source Equipment) provide PoE+ power over Ethernet. The IMC-1000S-PH12 provides an SFP cage for 100/1000Base-X compatible SFP modules. 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 10/100/1000Base-T and 100/1000Base-X Fiber cable interface
- Supports dual rate (100/1000) SFP for selectable Fast or Gigabit speed on fiber
- 12/24/48VDC (9.6~57VDC) redundant dual input power with built-in very high efficiency booster (97~99%) 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
	IEEE802.3ab 1000Base-T Gbit/s Ethernet over twisted pair
	IEEE802.3z 1000Base-X Gbit/s Ethernet over Fiber-Optic
	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	10/100/1000Base-T Auto MDI/MDI-X and Auto-Negotiation Function Supports UTP CAT.5e Twisted Pair cable
Fiber Ports	100Base-X or 1000Base-X SFP slot 100Base-X or 1000Base-X set by DIP SW
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: · SFP, Distance depend on plug-in Fiber Transceiver
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
	Fiber Speed: OFF: 1000Base-X ON: 100Base-X
	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

Connector and Pin Assignment	SFP Slot
	RJ-45 Socket: CAT.5e (10/100/1000Mbps) Twisted Pair cable Auto MDI/MDI-X and Auto-Negotiation Function Support RJ-45 Port support IEEE 802.3at/af End-Span, Alternative A moE.
Connector and Pin Assignment	PoE (V+): RJ-45 pin 1, 2. PoE (V-): RJ-45 pin 3, 6. Data (1,2,3,6,4,5,7,8)
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: Yellow : 1000Base-X, Green : 100 Base- X
	RJ-45 Port: Speed: 10 (OFF), 100 (Green), 1000 (Yellow)
	LNK/ACT for RJ45(Green): ON: Connected to network, OFF: Not connected to network, BLK: Networking is active
	PoE Status (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	34.2W	3.9W	30W	99.0%
	24VDC	34.7W	4.4W	30W	99.0%
	48VDC	35.4W	4.7W	30W	97.7%

Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
Removable Terminal Block	Provides 2 redundant power, alarm relay contact, 6 Pin

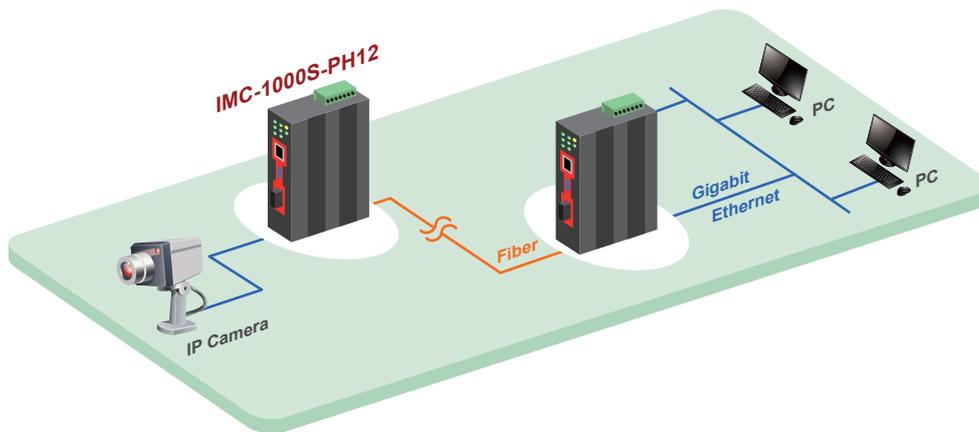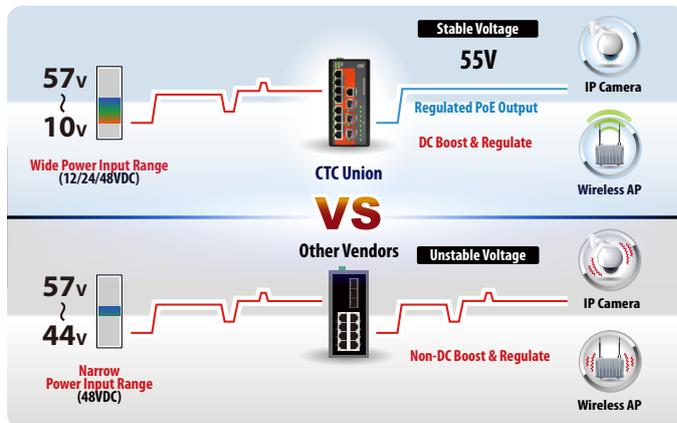|			
Operating Humidity	5%~95% (Non-condensing)	Immunity for Heavy Industrial environment	EN 61000-6-2
Operating Temperature	-20℃ ~ 75℃ (IMC-1000S-PHE12)	Emission for Heavy industrial environment	EN 61000-6-4
Storage Temperature	-40℃ ~ 85℃	EMS (Electromagnetic Susceptibility) Protection Level	EN61000-4-2 (ESD) Level 3, Criteria B
Housing	Rugged Metal, IP30 Protection and fanless		EN61000-4-3 (RS) Level 3, Criteria A
Dimensions	106 x 38.6 x 142 mm (D x W x H)		EN61000-4-4 (EFT) Level 3, Criteria A
Weight	650g		EN 61000-4-5 (Surge) Level 3, Criteria B
Installation	DIN Rail mounting, or wall mounting (Optional)		EN 61000-4-6 (CS) Level 3, Criteria A
MTBF	881,372 Hours MIL-HDBK-217		EN61000-4-8 (PFMF) Field strength 300A/m Criteria A
Warranty	5 years	Safety	UL60950-1 (pending)
Certification		Shock	IEC 60068-2-27
EMC	CE	Freefall	IEC 60068-2-32
EMI	FCC Part 15 Subpart B Class A, CE	Vibration	IEC 60068-2-6
Railway Traffic	EN50121-4		

Application

Figure 1 : IMC-1000S-PH12 Industrial PoE Transmission

- 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

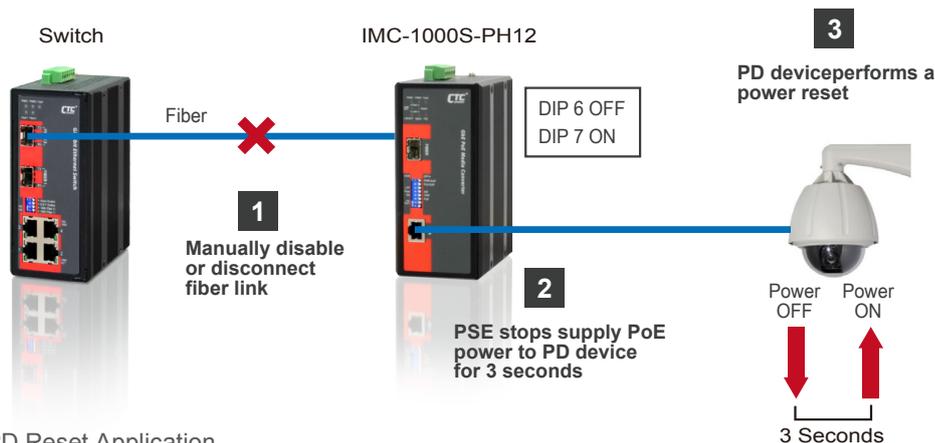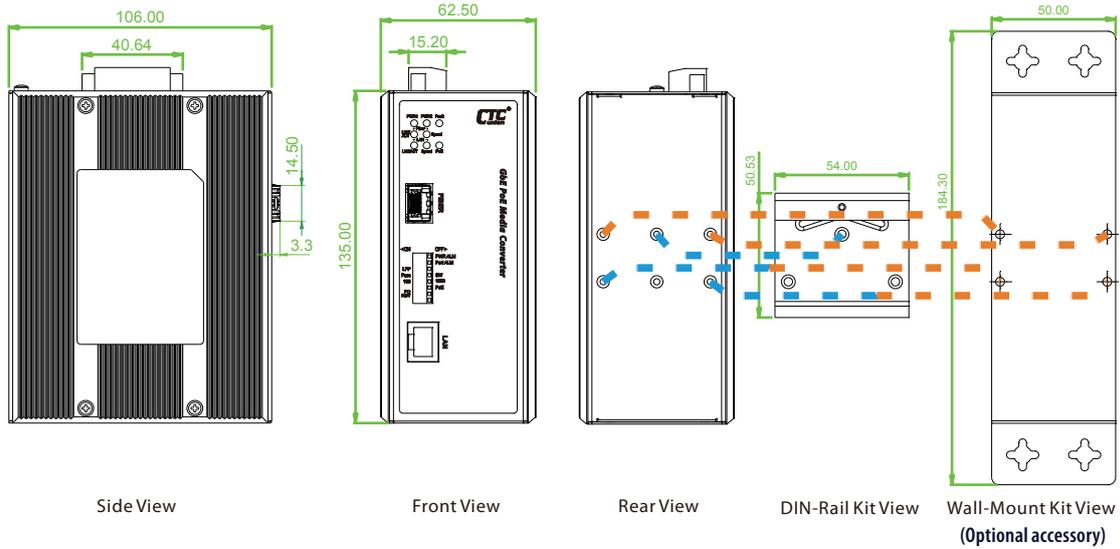**Figure 2 :** High efficiency boost technology for PoE
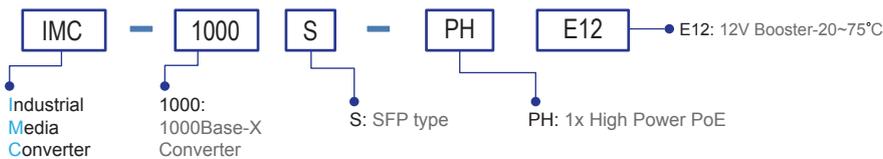

Figure 3 : Remote PD Reset Application

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
	10/100/1000 Base-T	Dual Speed 100/1000Base-X	IEEE802.3at (PSE)	Power Budget	Redundant	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC	
IMC-1000S-PHE12	1	1 SFP	1	30W	12/24/48VDC	V	V	V	V	-20~75℃

Model Naming Rule

| IMC | — | 1000 | S | — | PH | E12 |

● E12: 12V Booster-20~75℃

Industrial
Media
Converter

1000:
1000Base-X
Converter

S: SFP type

PH: 1x High Power PoE

Optional Accessories

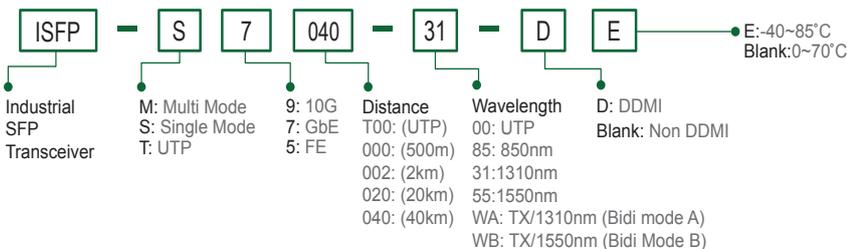### ■ Wall mount kit accessories

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

■ Industrial SFP Transceiver

The ISFP series of industrial grade SFP modules have been fully tested with the IMC-1000S-PH12 product for guaranteed compatibility and performance. The best performance can be guaranteed even in mission-critical applications.
(Please see CTC Union's Industrial SFP datasheet for more details and more items.)

ISFP-M7000-85-D(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter,wave length 850nm, 7.5dB, LC, DDMI, -10~70℃ (-40~85℃)
ISFP-S7020-31-D(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, DDMI, -10~70℃ (-40~85℃)
ISFP-T7T00-00-(E)	Industrial SFP 1000Base-T UTP 100meter, -10~70℃ (-40~85℃)
ISFP-M5002-31-D(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, DDMI, -10~70℃ (-40~85℃)
ISFP-S5030-31-D(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, DDMI, -10~70℃ (-40~85℃)

SFP Naming Rule

| ISFP | — | S | 7 | 040 | — | 31 | — | D | E |

● E:-40~85℃
Blank:0~70℃

Industrial
SFP
Transceiver

M: Multi Mode
S: Single Mode
T: UTP

9: 10G
7: GbE
5: FE

Distance
T00: (UTP)
000: (500m)
002: (2km)
020: (20km)
040: (40km)

Wavelength
00: UTP
85: 850nm
31:1310nm
55:1550nm
WA: TX/1310nm (Bidi mode A)
WB: TX/1550nm (Bidi Mode B)

D: DDMI
Blank: Non DDMI

Package List

- IMC-1000S-PH12 device
- Quickly installation guide
- Din Rail bracket with screws
- Terminal block
- Protective caps for SFP ports