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

30 Watts, 12V Booster

IMC-1000S-PH12

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

IMC-1000S-PH12 is a family of non-managed 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.

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℃ (IMC-1000S-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

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
Fiber Ports	100/1000Base-X SFP
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-3/5 (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 mode.

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	Present for Power Input
Overload Current Protection	Present
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

IMC-1000S-PH12 Power consumption & Booser 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%

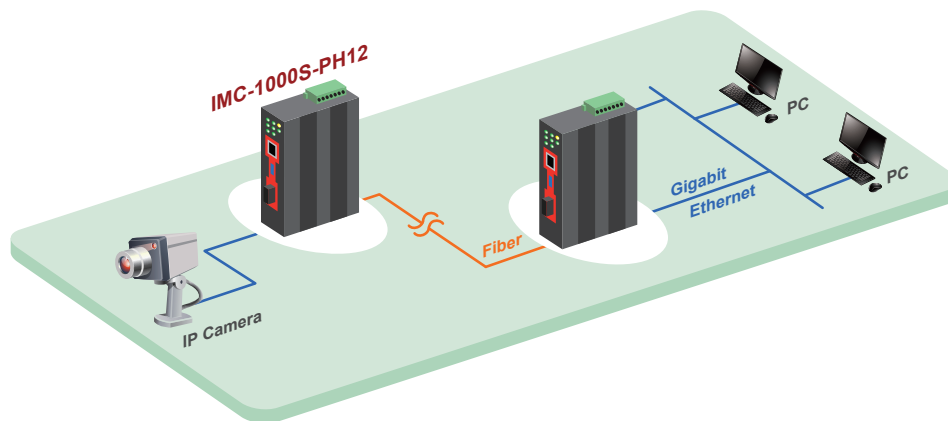| Alarm Relay Contact	Relay outputs with current carrying capacity of 1 A @24VDC
Removable Terminal Block	Provides 2 redundant power, alarm relay contact, 6 Pin
Operating Humidity	5%~95% (Non-condensing)
Operating Temperature	-10℃~60℃ (IMC-1000S-PH12) -20℃~75℃ (IMC-1000S-PHE12)
Storage Temperature	-40℃~85℃

Industrial GbE Converter with PoE

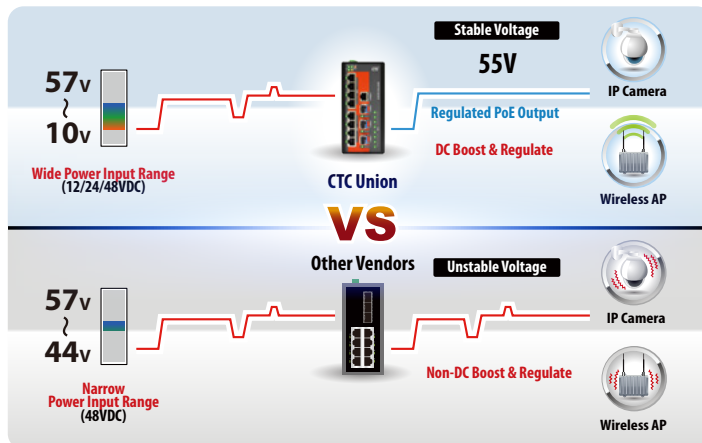|	
Housing	Rugged Metal, IP30 Protection and fanless
Dimensions	106 x 38.6 x 142 mm(D x W x H)
Weight	650g
Installation	DIN Rail mounting or wall mounting
Certification	
EMC	CE
EMI	FCC Part 15 Subpart B Class A, CE EN 55022 Class A
Railway Traffic	EN50121-4
Immunity for Heavy Industrial environment	EN 61000-6-2
Emission for Heavy industrial environment	EN 61000-6-4

EMS	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
Safety	UL60950-1 (pending)
Shock	IEC 60068-2-27
Freefall	IEC 60068-2-32
Vibration	IEC 60068-2-6
MTBF	432,104Hrs MIL-HDBK-217
Warranty	5 years

Application

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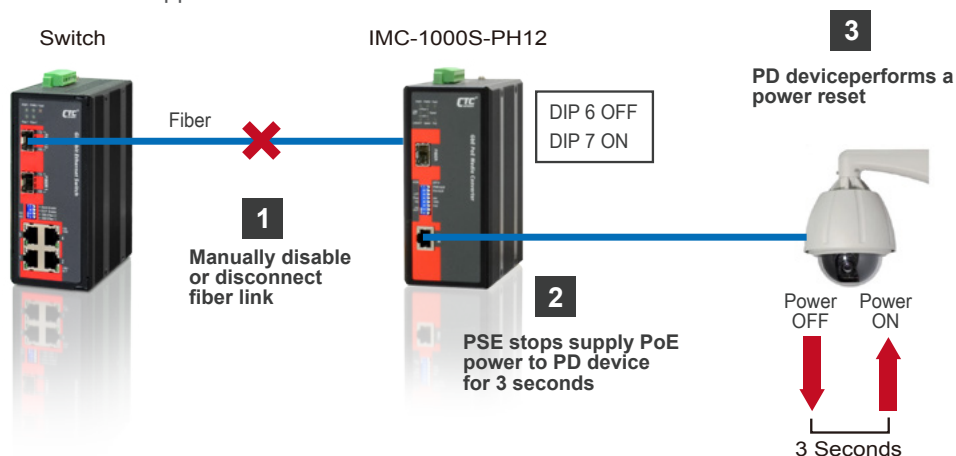

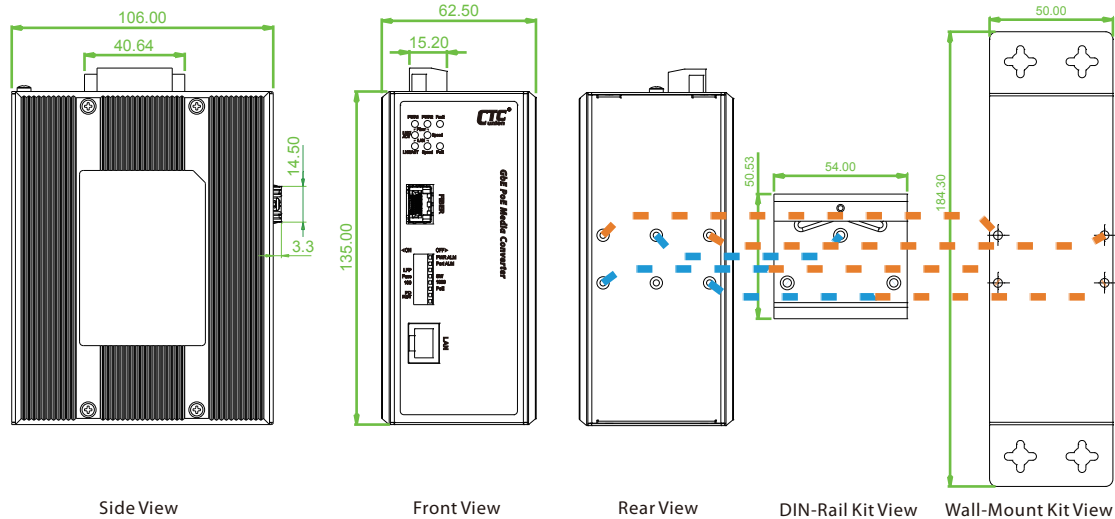▶ **Figure 2 :** High efficiency boost technology for PoE

- 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

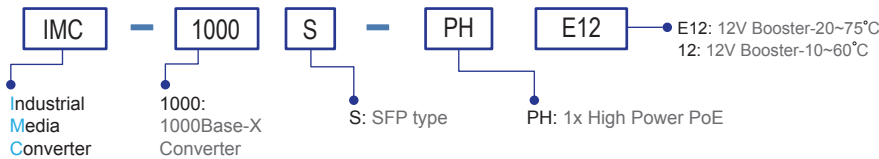▶ **Figure 3 :** Remote PD Reset Application

Dimensions

Side View   Front View   Rear View   DIN-Rail Kit View   Wall-Mount Kit View

Ordering Information

Model Name	UTP	Fiber	PoE Port		Input Voltage (Boost)	Certification				Operating Temperture
	10/100/1000 Base-T	Dual Speed 100/1000Base-X	IEEE802.3at (PSE)	Power Budget		Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE	FCC	
IMC-1000S-PH12	1	1 SFP	1	30W	12/24/48VDC	V	V	V	V	-10~60℃
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℃
12: 12V Booster-10~60℃

Industrial Media Converter

1000: 1000Base-X Converter

S: SFP type

PH: 1x High Power PoE

Optional Accessories

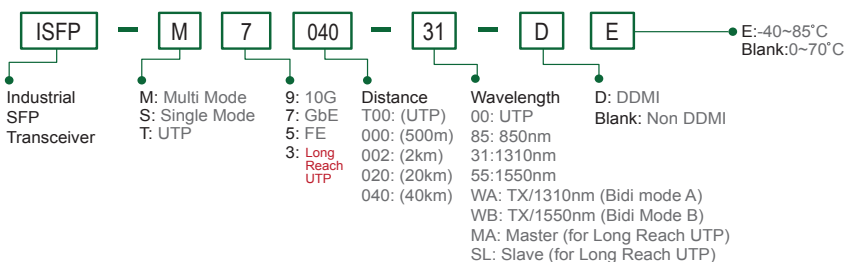### ■ Industrial Power Supply

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

Package List

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

■ 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-(E)	Industrial SFP GbE 1000Base-SX, M/M, 500 meter,wave length 850nm, 7.5dB, LC, -10~70℃ (-40~85℃)
ISFP-S7020-31-(E)	Industrial SFP 1000Base-LX, S/M, 20km, wave length 1310nm, 15dB, LC, -10~70℃ (-40~85℃)
ISFP-T7T00-00-(E)	Industrial SFP 1000Base-T UTP 100meter, -10~70℃ (-40~85℃)
ISFP-M5002-31-(E)	Industrial SFP 155M 100Base-FX, MM, 2km, wave length 1310nm, 12dB, LC, -10~70℃ (-40~85℃)
ISFP-S5030-31-(E)	Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, -10~70℃ (-40~85℃)
ISFP-T3T00-MA-(E)	Industrial SFP 100Mbps , long reach UTP (2 wire) (500meter) , Master, -10~70℃ (-40~85℃)
ISFP-T3T00-SL-(E)	Industrial SFP 100Mbps , long reach UTP (2 wire) (500meter) , Slave, -10~70℃ (-40~85℃)

SFP Naming Rule

ISFP — M 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
3: Long Reach UTP

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)
MA: Master (for Long Reach UTP)
SL: Slave (for Long Reach UTP)

D: DDMI
Blank: Non DDMI

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

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