IMC-1000MS-PH12

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

IMC-1000MS-PH12 is a 10/100/1000Base-T to 100/1000Base-X manageable Gigabit Ethernet media converter which not only offers dual-speed fixed fiber transceiver or SFP cage module options for the optical interface, but also injects PoE+ power through the electrical RJ-45 port. Housed in rugged DIN rail or wall mountable enclosures, IMC-1000MS-PH12 converters are designed for harsh environments, such as IP surveillance, industrial networking, intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications.

IMC-1000MS-PH12 also provides many advanced Ethernet functions (VLAN, storm filter, ingress/egress bandwidth control, etc.) and can be managed via an easy-to-use GUI or standard SNMP manager such as CTC SmartView™. With built-in OAM (Operation, Administration, Maintenance & Provisioning) functions such as loop-back test and dying gasp, IMC-1000MS-PH12 can be monitored from a centrally located OAM-enabled FRM220-1000MS via remote in-band management which helps to reduces operational expenditures by keeping truck rolls to a minimum.

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 port
- 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 4)
- Provides IEEE 802.3at PoE output (30W)
- 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
- Ingress/Egress bandwidth control with 64K granularity
- PoE configuration and monitor
- Auto Laser Shutdown (ALS)
- Supports LFPT (Link Fault Pass Through)
- Supports Digital Diagnostic Monitor Interface (DDMI) for SFP
- Supports 16 IEEE 802.1Q Tag VLAN Group
- MIB counters
- SNMP alarm trap for power loss and port link down
- Web based and SNMP for management (Figure 1, 3)
- Remote Loop-Back test
- Supports in-band management from FRM220 Chassis with FRM220-1000MS (Figure 2)
- Supports SmartView for centralized management*

*Please see Chapter 1- **Software Management** for more details

Specifications

Standard	IEEE 802.3 10Base-T 10Mbit/s Ethernet
	IEEE 802.3u 100Base-TX, 100Base-FX, Fast Ethernet
	IEEE 802.3ab 1000Base-T Gbit/s Ethernet over twisted pair
	IEEE 802.3z 1000Base-X Gbit/s Ethernet over Fiber-Optic
	IEEE 802.3x Flow Control and Back pressure
	IEEE 802.3at PoE+ (Power over Ethernet enhancement)
	IEEE 802.3af PoE (Power over Ethernet)
	IEEE 802.1q Tag VLAN
Fiber Ports	SFP slot for 100Base-X or 1000Base-X, 100M/1000M speed set by Web
RJ45 Ports	10/100/1000Base-T Auto MDI/MDI-X and Auto-Negotiation Function Supports UTP CAT.5e Twisted Pair cable
Push Button	Reset, Load default setting
Data Process Architecture	Pass through mode
Jumbo Frame	9K bytes

Fiber Parameters	Fiber Cable (Multi-mode): 50/125um,62.5/125um
	Fiber Cable (Single-mode): 9/125um
	SFP, Distance depending on plugged-in Fiber Tranceiver
LFPT (Link Fault Pass Through)	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
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
Connector and Pin Assignment	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 (1,2,3,6,4,5,7,8)

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 : 100Base-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
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	-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	650g
Installation	DIN Rail mounting, or wall mounting (Optional)
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 4)

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%

MTBF	864,121 Hours MIL-HDBK-217
Warranty	5 years
Certifications	
EMC	CE
EMI	FCC Part 15 Subpart B Class A, CE
Rail Way 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

Software Specifications

SNMP or Web Mode (figure 1, 3)	
Management	Ingress/Egress bandwidth control with 64K granularity
	Web management, Firmware upgrade via Web
	Supports SNMP, MIB for management
	Supports DHCP client for automatic IP configuration
	Supports 802.1Q tag VLAN, 16 Tag VLAN group, MIB counters display
Configuation	IP configuration, password setting, converter configuration
	port configuration, MIB counter, SNMP configuration
	VLAN group configuration, alarm configuration
	PoE Configuration
Diagnostic & Monitor	Supports Link Fault Pass-Through (LFPT) Function
	Broadcast/Multicast/Unicast storm filter
	SNMP alarm trap for power loss and port link Up/Down
	PoE Status

In-Band Remote mode (Figure 2)	
Management	Supports in-band management from FRM220 Chassis With FRM220-1000MS card
	Ingress/Egress bandwidth control with 64K granularity
Configuation	IP configuration, converter configuration, port configuration, MIB counter
	VLAN group configuration, alarm configuration, PoE Configuration
Diagnostic & Monitor	Remote loop back test
	Supports Link Fault Pass-Through (LFPT) Function
	Broadcast/Multicast/Unicast storm filter
	PoE Status

Application

Figure 1 : IMC-1000MS-PH12 Management by SNMP, SmartView

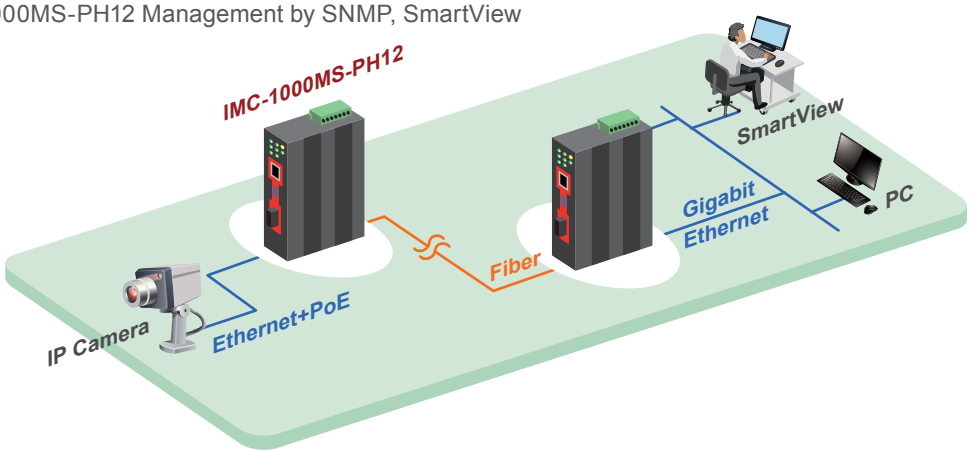


Figure 2 : IMC-1000MS-PH12 Application in Remote, In-Band Management

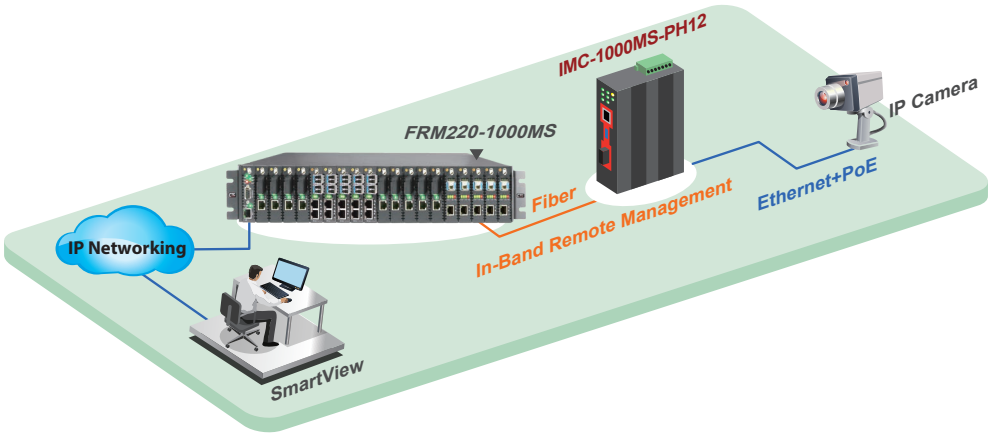


Figure 3 : IMC-1000MS-PH12 Application in Web Management

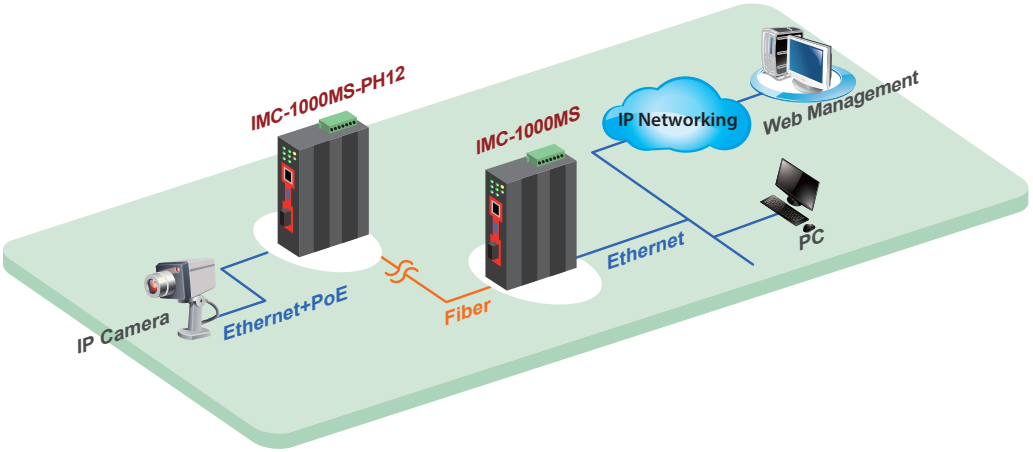
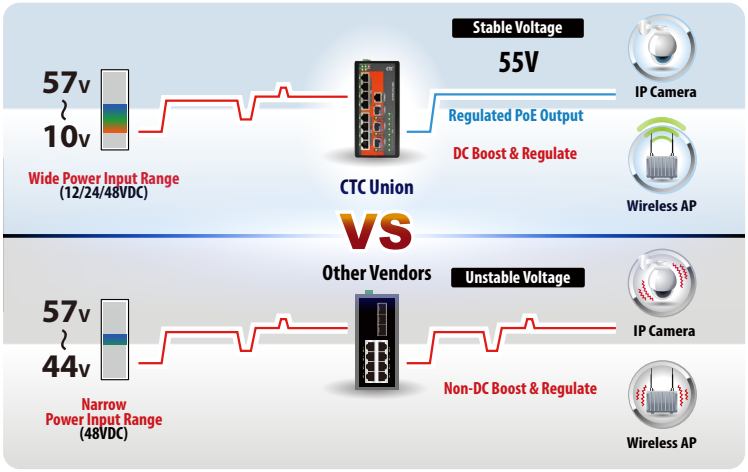
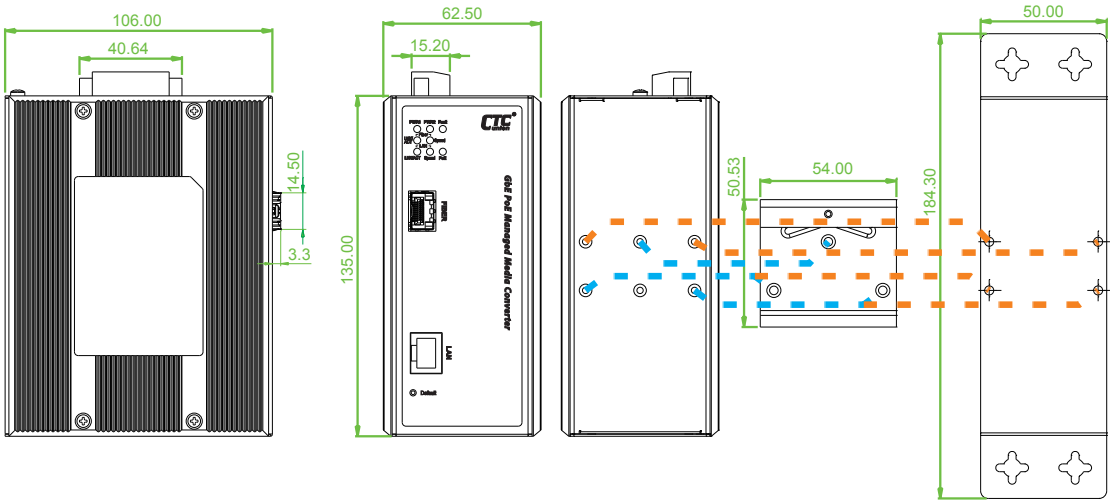


Figure 4 : High efficiency boost technology for PoE



- 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

Dimensions

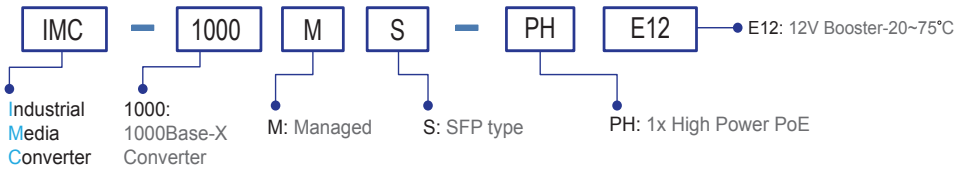


Side View | Front View | Rear View | DIN-Rail Kit View | Wall-Mount Kit View (Optional accessory)

Ordering Information

Model Name	Managed	RJ45 UTP	Fiber	PoE Port		Power Input	Certification			Operating Temperature
		10/100/1000 Base-T	Dual Speed 100/1000Base-X	IEEE 802.3at (PSE)	Power Budget	Redundant	Railway EN50121-4	EN61000-6-2 EN61000-6-4	CE, FCC	
IMC-1000MS-PHE12	V	1	1 SFP	1	30W	12/24/48VDC	V	V	V	-20~75℃

Model Naming Rule



Package List

- IMC-1000MS-PH12
- CD (MIB file, Manual)
- Quick installation guide
- Din Rail bracket with screws
- Terminal block
- Protective caps for SFP ports

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-1000MS-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 10/100/1000Base-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