



30 Watts,  
i2V Booster



## IMC-1000M-PH12

10/100/1000Base-T to 100/1000Base-FX/SX/LX with PoE + (PSE) Managed Fiber Converter

## IMC-1000MS-PH12

10/100/1000Base-T to 100/1000Base-X SFP with PoE + (PSE) Managed Fiber Converter

IMC-1000(S)-PH12 is a 10/100/1000Base-T to 100/1000Base-X Gigabit Ethernet Media converter which not only offers dual-speed fixed fiber transceiver and 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-1000(S)-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-1000(S)-PH12 also provides many advanced L2 functions (VLAN, storm filter, ingress/egress bandwidth control, etc.) and can be managed via easy-to-use GUI or standard SNMP manager such as CTC SarmtView. With built-in OAM (Operation, Administration, Maintenance & Provisioning) functions such as loop-back test and dying gasp, IMC-1000(S)-PH12 can be monitored from a centrally located OAM-enabled FRM220-1000MS via remote in-band management which helps to reduce 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
- Constant and regulated PoE output voltage at 55VDC
- Provides IEEE802.3at PoE output (30W)
- IP30 rugged metal housing and fanless
- Wide operating temperature -20~75°C (IMC-1000M-PHE12, IMC-1000MS-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
- 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 IEEE802.1Q 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

### Specifications

<b>Standard</b>	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 Power over Ethernet+, PoE+ IEEE802.3af Power over Ethernet, PoE IEEE802.1q Tag VLAN
<b>Fiber Ports</b>	100/1000Base-FX/SX/LX, 100M /1000M Speed set by Web (IMC-1000M-PH12, IMC-1000M-PHE12) SFP slot for 100Base-X or 1000Base-X, 100M/1000M speed set by Web (IMC-1000MS-PH12, IMC-1000MS-PHE12)
<b>RJ45 Ports</b>	10/100/1000Base-T
<b>Push Button</b>	Reset, Load default setting
<b>Data Process Architecture</b>	Pass through mode
<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: 500M (Multi-mode SX), 20KM (Single-mode), 40KM (Single-mode) (IMC-1000M-PH12, IMC-1000M-PHE12) SFP, Distance depending on plugged-in Fiber Transceiver (IMC-1000MS-PH12, IMC-1000MS-PHE12)
<b>LFPT (Link Fault Pass Through)</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>Connector and Pin Assignment</b>	Fiber: SC (Multi-mode, 500M), SC (Single-mode, 20KM, 40KM) (IMC-1000M-PH12, IMC-1000M-PHE12) SFP Slot (IMC-1000MS-PH12, IMC-1000MS-PHE12) 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 PoE (V+): RJ-45 pin 1, 2 PoE (V-): RJ-45 pin 3, 6 Data (1,2,3,6,4,5,7,8)
<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 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
<b>Reverse Polarity Protection</b>	Present for Power Input
<b>Overload Current Protection</b>	Present
<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-1000M-PH12, IMC-1000MS-PH12) -20°C~75°C (IMC-1000M-PHE12, IMC-1000MS-PHE12)

3 Industrial Managed GbE Converter with PoE

<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 (IMC-1000M-PH12, IMC-1000M-PHE12) 650g (IMC-1000MS-PH12, IMC-1000MS-PHE12)																			
<b>Installation</b>	DIN Rail mounting or wall mounting																			
<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																			
<b>Power Consumption</b>	<b>IMC-1000M-PH12 &amp; IMC-1000M-PHE12</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>34.4W</td> <td>3.9W</td> <td>30W</td> <td>98.4%</td> </tr> <tr> <td>24VDC</td> <td>34.9W</td> <td>4.5W</td> <td>30W</td> <td>98.7%</td> </tr> <tr> <td>48VDC</td> <td>35.4W</td> <td>4.7W</td> <td>30W</td> <td>97.7%</td> </tr> </tbody> </table>	Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget	Boost Efficiency	12VDC	34.4W	3.9W	30W	98.4%	24VDC	34.9W	4.5W	30W	98.7%	48VDC	35.4W	4.7W	30W
Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget	Boost Efficiency																
12VDC	34.4W	3.9W	30W	98.4%																
24VDC	34.9W	4.5W	30W	98.7%																
48VDC	35.4W	4.7W	30W	97.7%																
<b>Power Consumption</b>	<b>IMC-1000MS-PH12 &amp; IMC-1000MS-PHE12</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>34.2W</td> <td>3.9W</td> <td>30W</td> <td>99.0%</td> </tr> <tr> <td>24VDC</td> <td>34.7W</td> <td>4.4W</td> <td>30W</td> <td>99.0%</td> </tr> <tr> <td>48VDC</td> <td>35.4W</td> <td>4.7W</td> <td>30W</td> <td>97.7%</td> </tr> </tbody> </table>	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
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%																
<b>MTBF</b>	401235 (IMC-1000M-PH12, IMC-1000M-PHE12) 331689 (IMC-1000MS-PH12, IMC-1000MS-PHE12) MIL-HDBK-217																			

<b>Warranty</b>	5 years
<b>Certifications</b>	
<b>EMC</b>	CE
<b>EMI</b>	FCC Part 15 Subpart B Class A, CE EN 55022 Class A
<b>Rail Way Traffic</b>	EN50121-4
<b>Immunity for Heavy Industrial environment</b>	EN 61000-6-2
<b>Emission for Heavy industrial environment</b>	EN 61000-6-4
<b>EMS (Electromagnetic Susceptibility) Protection level</b>	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
<b>Safety</b>	UL60950-1 (pending)
<b>Shock</b>	IEC 60068-2-27
<b>Freefall</b>	IEC 60068-2-32
<b>Vibration</b>	IEC 60068-2-6

## Software Specifications

<b>SNMP or Web Mode (figure 1, 3)</b>	
<b>Management</b>	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
<b>Configuration</b>	IP configuration, password setting, converter configuration port configuration, MIB counter, SNMP configuration VLAN group configuration, alarm configuration PoE Configuration
<b>Diagnostic &amp; Monitor</b>	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

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

## Application

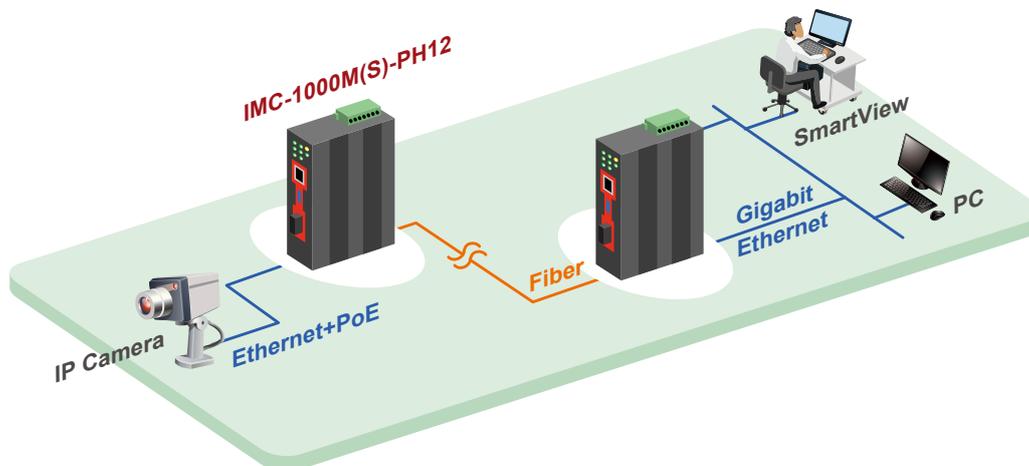


Figure 1 : IMC-1000M(S)-PH12 Management by SNMP, SmartView

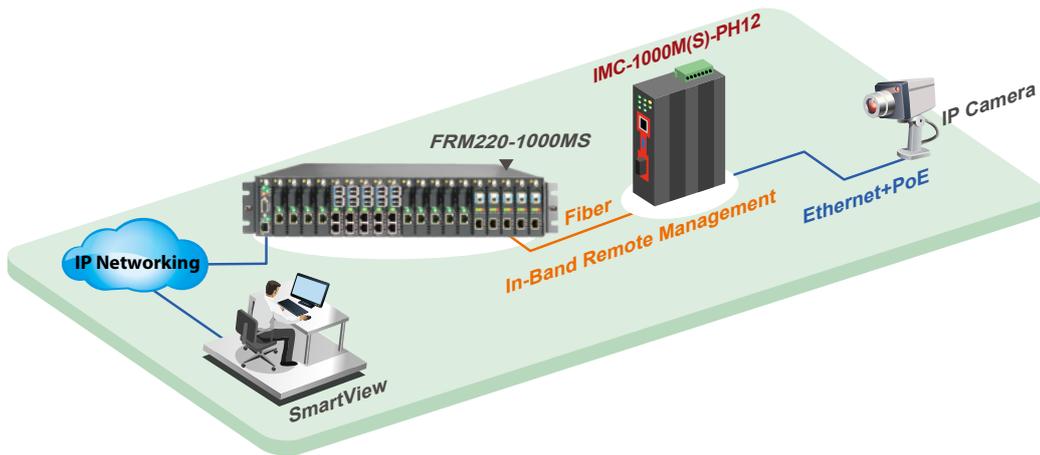


Figure 2 : IMC-1000M(S)-PH12 Application in Remote, In-Band Management

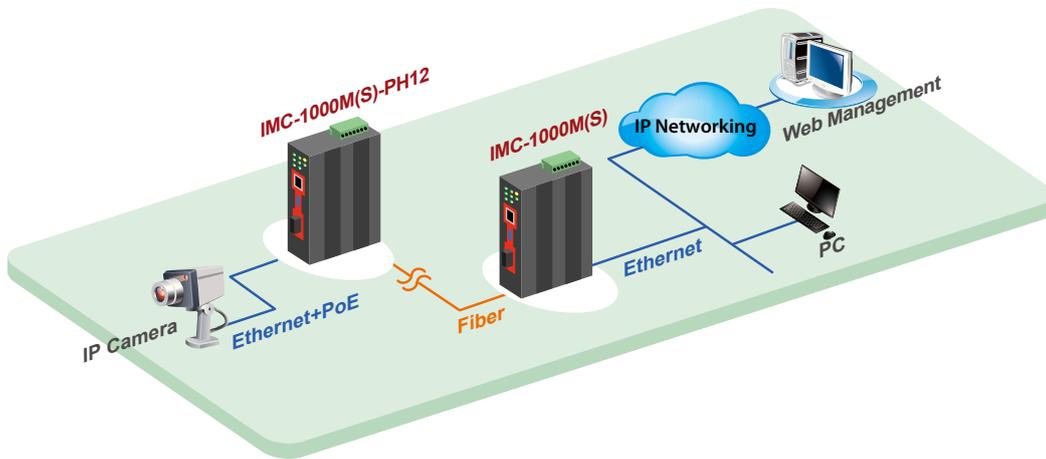
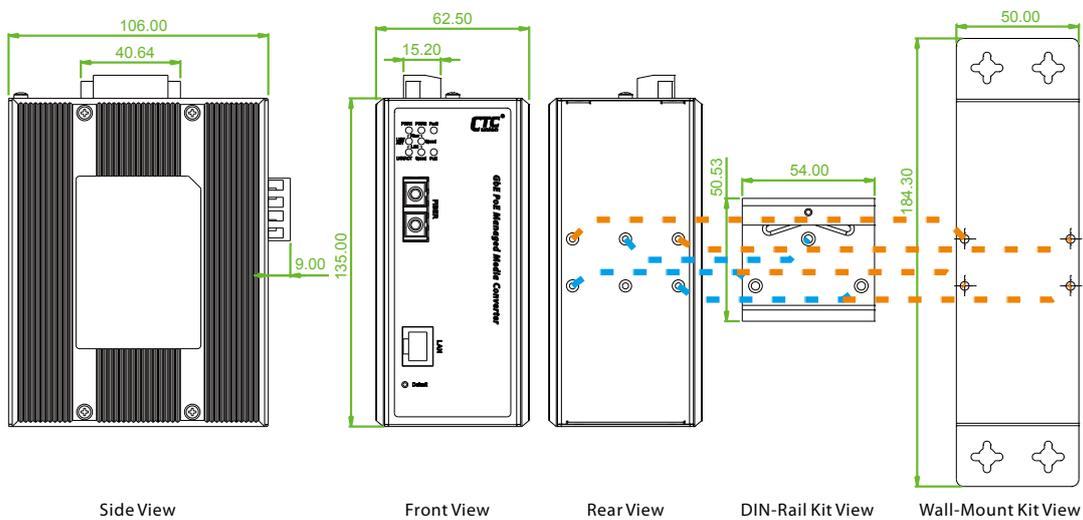


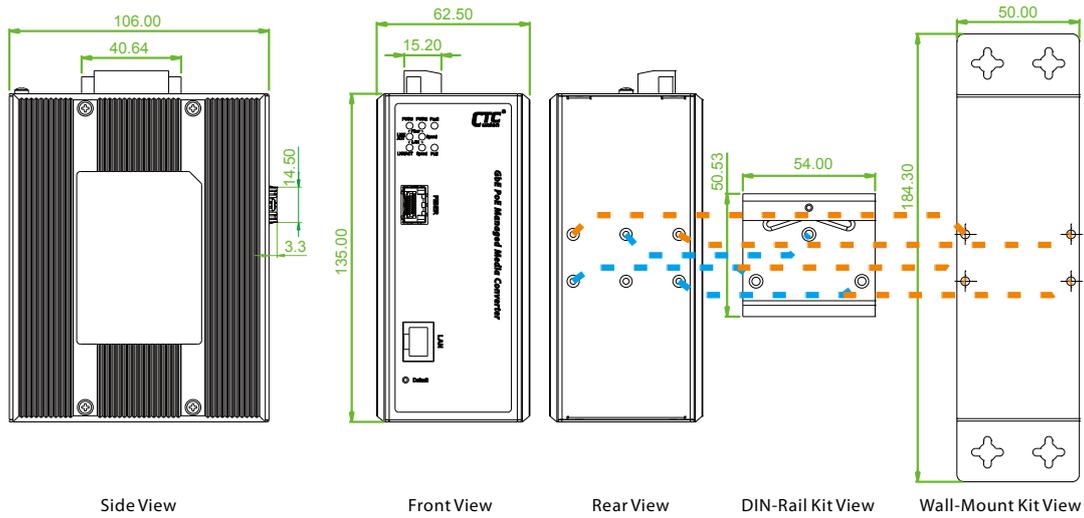
Figure 3 : IMC-1000M(S)-PH12 Application in Web Management

## Dimensions

IMC-1000M-PH12



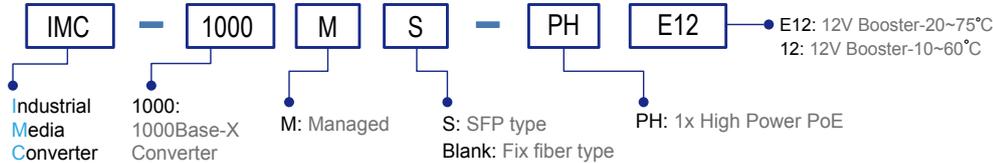
IMC-1000MS-PH12



Ordering Information

Model Name	Managed	UTP		Fiber		PoE Port		Input Voltage (Boost)	Certification			Operating Temperature
		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-1000M-PH12	V	1	1 SC	1	30W	12/24/48VDC	V	V	V	-10~60 C		
IMC-1000M-PHE12	V	1	1 SC	1	30W	12/24/48VDC	V	V	V	-20~75 C		
IMC-1000MS-PH12	V	1	1 SFP	1	30W	12/24/48VDC	V	V	V	-10~60 C		
IMC-1000MS-PHE12	V	1	1 SFP	1	30W	12/24/48VDC	V	V	V	-20~75 C		

Model Naming Rule

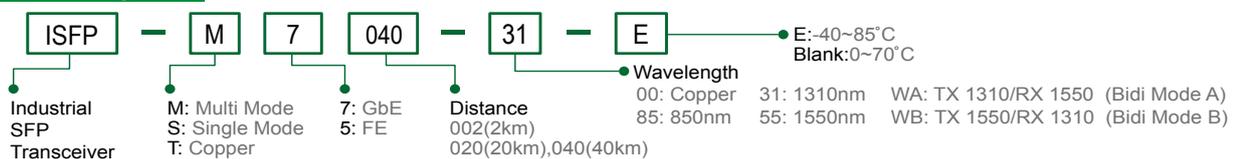


Fiber Connector Type	Connectivity Distance
SC (IMC-1000M-PH12 & IMC-1000M-PHE12 only)	001:500M (M/M) 002: 2km (M/M) 020:20km (S/M) 040:40km (S/M) 020A: WDM 20km A Type (TX:1310nm) 020B: WDM 20km B Type (TX:1550nm)

Accessories

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
MDR-60-24	Industrial Power, Input 85 ~ 264VAC, Output 24VDC, 60W, -20 ~ +70°C
SFP Transceiver	Compatible, Reliable, 5-year Warranty

SFP Naming Rule



Temperature Connector Type Connectivity Distance  
**IMC-1000M -PH 12 -**   
 Example: IMC-1000M - PHE12 - SC001