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 cabled 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 IEEE802.3at PoE output (30W)
- IP30 rugged metal housing and fanless
- Wide operating temperature -20~75°C
- CE, FCC, Railway traffic EN50121-4 certification
- Industrial grade EMS, EMI EN61000-6-2, EN61000-6-4 certification
- Provides 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 IEEE802.1T Q 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 (Figure 5)
- Supporting Central EMS for management of up to 50 SmartView Server, and 25,000 device (maximum) (Figure 6)

**Specifications**

<table>
<thead>
<tr>
<th>Standard</th>
<th>IEE802.3 10Base-T 10Mbit/s Ethernet</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>IEE802.3u 100Base-TX, 100Base-FX, Fast Ethernet</td>
</tr>
<tr>
<td></td>
<td>IEE802.3ab 1000Base-T 10Gb/s Ethernet over twisted pair</td>
</tr>
<tr>
<td></td>
<td>IEE802.3z 1000Base-X 10Gb/s Ethernet over Fiber-Optic</td>
</tr>
<tr>
<td></td>
<td>IEE802.3x Flow Control and Back pressure</td>
</tr>
<tr>
<td></td>
<td>IEE802.3at PoE+ (Power over Ethernet enhancement)</td>
</tr>
<tr>
<td></td>
<td>IEE802.3af PoE (Power over Ethernet)</td>
</tr>
<tr>
<td></td>
<td>IEE802.3q Tag VLAN</td>
</tr>
</tbody>
</table>

**Fiber Ports**

- SFP slot for 100Base-X or 1000Base-X, 100M/1000M speed set by Web

**RJ45 Ports**

- 10/100/1000Base-T

**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 Transceiver
- TX: Fiber TX port link down, the media converter will force Fiber port to link down
- RX: Fiber RX port link down, the media converter will force TX port to link down

**LFPT (Link Fault Pass Through)**

- Fiber-TX: If Fiber port link down, the media converter will force Fiber port to link down
- TX-Fiber: If TX port link down, the media converter will force Fiber port to 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
- PoE (V+): RJ-45 pin 1, 2
- PoE (V-): RJ-45 pin 3, 6
- Data (I,2,3,6,4,5,7,8)

**LED**

- Per Unit: Power 1 (Green), Power 2 (Green), Fault (Amber)
- Fiber Link/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)
- Link/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

**Alarm Relay Contact**

- Relay outputs with current carrying capacity of 1 A @ 48VDC

**Removable Terminal Block**

- Provides 2 redundant power, alarm relay contact, 6 Pin

**Operating Humidity**

- 5%~95% (Non-condensing )

**Operating Temperature**

- -10°C ~ 60°C (IMC-1000MS-PH12)
- -20°C ~ 75°C (IMC-1000MS-PHE12)

**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

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.
Industrial Managed GbE Converter with PoE

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

**Installation**
DIN Rail mounting or wall mounting

**Power Supply**
12/24/48VDC (0.6~57VDC). Redundant power with polarity reverse protect function and removable terminal block.
Built-in very high efficiency booster (97~99%) to rise up 55VDC 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**
<table>
<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>

**MTBF**
331689 (IMC-1000MS-PH12, IMC-1000MS-PHE12)
MIL-HDBK-217

**Warranty**
5 years

**Certifications**
EMC
CE

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**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

**Configuration**
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

**Configuration**
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

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**Application**

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

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**Figure 2 : IMC-1000MS-PH12 & IMC-1000MS-PHE12**

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**EMI**
FCC Part 15 Subpart B Class A, CE EN 55022 Class A

**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)**
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
Industrial Managed GbE Converter with PoE

**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 meter
- Wide range input power 12/24/48VDC (10~57VDC)
- Built-in very high efficiency (94~97%) to boost PoE output voltage
Industrial Managed GbE Converter with PoE

**Figure 5**: SmartView™ management architecture

- Centralized Network Management Platform
- Long term events storage (up to 1 year)
- Alarm trap and event log management
- Real-time visual representations
- Remote access control
- Traffic/performance monitoring and management

**Figure 6**: Central EMS allows central management of up to 50 SmartView™ servers

- Allow central management of up to 50 SmartView™ servers
- Allow up to 25,000 devices management
- Hierarchical Network Management Architecture
- Easy and rapid expansion of SmartView™ EMS

**Dimensions**

- Side View: 135.00 x 40.64 x 10.50
- Front View: 62.50 x 15.20 x 50.00
- Rear View: 50.53 x 14.50 x 54.00
- DIN-Rail Kit View: 106.00 x 3.30 x 54.00
- Wall-Mount Kit View: 106.00 x 3.30 x 54.00

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

www.ctcu.com

sales@ctcu.com
Industrial Managed GbE Converter with PoE

Ordering Information

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Managed</th>
<th>UTP</th>
<th>Fiber</th>
<th>PoE Port</th>
<th>Input Voltage (Boost)</th>
<th>Power Budget</th>
<th>Certification</th>
<th>Operating Temperature</th>
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<tbody>
<tr>
<td>IMC-1000MS-PH12</td>
<td>V</td>
<td>1</td>
<td>SFP</td>
<td>1</td>
<td>12/24/48VDC</td>
<td>30W</td>
<td>EN50121-4, EN61000-6-2, EN61000-6-4</td>
<td>-10~60°C</td>
</tr>
<tr>
<td>IMC-1000MS-PHE12</td>
<td>V</td>
<td>1</td>
<td>SFP</td>
<td>1</td>
<td>12/24/48VDC</td>
<td>30W</td>
<td>V</td>
<td>-20~75°C</td>
</tr>
</tbody>
</table>

Model Naming Rule

IMC 1000 M S PH E12

IMC: Industrial Media Converter
1000: 1000Base-X
M: Managed
S: SFP type
PH: 1x High Power PoE
E12: 12V Booster-20~75°C
12: 12V Booster-10~60°C

Optional Accessories

Industrial Power Supply

- 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

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.)

(See CTC Union’s Industrial SFP datasheet for more details and more items.)

<table>
<thead>
<tr>
<th>SFP Model</th>
<th>Description</th>
<th>Distance 1</th>
<th>Wavelength 1</th>
<th>Distance 2</th>
<th>Wavelength 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISFP-7700-85-D</td>
<td>Industrial SFP 100Base-SX, M/M, 500 meter, wave length 850nm, 7.5dB, LC, DDMI,</td>
<td>1000m</td>
<td>850nm</td>
<td>200m</td>
<td>1310nm</td>
</tr>
<tr>
<td>ISFP-7702-31-D</td>
<td>Industrial SFP 100Base-LX, 5/5, 10km, wave length 1310nm, 15dB, LC, DDMI,</td>
<td>1000m</td>
<td>1310nm</td>
<td>200m</td>
<td>850nm</td>
</tr>
</tbody>
</table>

Package List

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

SFP Naming Rule

ISFP M 7 040 31 D E

ISFP: Industrial SFP Transceiver
M: Multi Mode
S: Single Mode
T: UTP
D: Distance
E: Wavelength