IMC-1000M(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-1000M(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-1000M(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 SmartView. With built-in OAM (Operation, Administration, Maintenance & Provisioning) functions such as loop-back test and dying gasp, IMC-1000M(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.

### Specifications

- **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**
- **IEEE802.3k Flow Control and Back pressure**
- **IEEE802.3at Power over Ethernet+, PoE+**
- **IEEE802.3af Power over Ethernet, PoE**
- **IEEE802.3at Power over Etherent, PoE**
- **IEEE802.3af Power over Ethernet, PoE**
- **IEEE802.1q Tag VLAN**
- **IEEE802.1z 1000Base-X Gbit/s Ethernet over Fiber-Optic**
- **IEEE802.1ab 1000Base-X Gbit/s Ethernet over twisted pair**
- **IEEE802.1x 1000Base-X Gbit/s Ethernet over Fiber-Optic**
- **IEEE802.1q Tag VLAN**
- **IEEE802.1z 1000Base-X Gbit/s Ethernet over twisted pair**
- **IEEE802.1ab 1000Base-X Gbit/s Ethernet over Fiber-Optic**
- **IEEE802.1q Tag VLAN**

### Features

- Conversion between 10/100/1000Base-T and 100/1000Base-X fiber 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 5V DC for PoE output
- Constant and regulated PoE output voltage at 55VDC
- Provides IEEE802.3at PoE output (30W)
- PoE+ (PSE) Managed Fiber Converter
- Supports in-band management from FRM220 Chassis with FRM220-1000MS (Figure 2)
- Supports SmartView for centralized management
- 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 IEEE802.1Q Tag VLAN Group
- MI B counters
- SNMP alarm trap for power loss and port link down
- Base web and SNMP for management (Figure 1, 3)
- Remote Loop-Back test
- Supports SmartView for centralized management
- Supports LFPT (Link Fault Pass Through)
- FRM220-1000MS (Figure 2)

### Connector and Pin Assignment

- **Fiber**: SC (Multi-mode, 500M), SC (Single-mode, 20KM), 40KM
- **SFP Slot** for 100Base-X or 1000Base-X, 100M/1000M speed set by Web
- **LED**
  - Present: Power Input (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

- Present

### Overload Protection

- Present

### Current Protection

- Present

### Alarm Relay Contact

- Relay outputs with current carrying capacity of 1 A @24V DC

### Removable Terminal Block

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

### Operating Humidity

- 5%~95% (Non-condensing)

### Operating Temperature

- -10°C~60°C (IMC-1000M-PH12, IMC-1000MS-PHE12)
- -20°C~75°C (IMC-1000M-PH12, IMC-1000MS-PHE12)
Industrial Managed GbE Converter with PoE - IMC-1000M-PH12 & IMC-1000MS-PH12

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

www.ctcu.com
sales@ctcu.com

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: 655g (IMC-1000M-PH12, IMC-1000M-PHE12), 650g (IMC-1000MS-PH12, IMC-1000MS-PHE12)
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 55 VDC for PoE output.

Power Consumption
<table>
<thead>
<tr>
<th>IMC-1000M-PH12 &amp; IMC-1000M-PHE12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Voltage</td>
</tr>
<tr>
<td>12VDC</td>
</tr>
<tr>
<td>24VDC</td>
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<tr>
<td>48VDC</td>
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</table>

<table>
<thead>
<tr>
<th>IMC-1000MS-PH12 &amp; IMC-1000MS-PHE12</th>
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<tr>
<td>Input Voltage</td>
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<tr>
<td>12VDC</td>
</tr>
<tr>
<td>24VDC</td>
</tr>
<tr>
<td>48VDC</td>
</tr>
</tbody>
</table>

MTBF: 401235 (IMC-1000M-PH12, IMC-1000M-PHE12), 331689 (IMC-1000MS-PH12, IMC-1000MS-PHE12)

Certifications
- EMC: CE
- EMI: FCC Part 15 Subpart B Class A, CE EN 55022 Class A
- Rail Way Traffic 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

Warranty: 5 years

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

**Application**

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

Figure 2: In-Band Remote mode (with FRM220 Chassis)
**Industrial Managed GbE Converter with PoE**

**IMC-1000M-PH12 & IMC-1000MS-PH12**

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

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

**Dimensions**

<table>
<thead>
<tr>
<th>Side View</th>
<th>Front View</th>
<th>Rear View</th>
<th>DIN-Rail Kit View</th>
<th>Wall-Mount Kit View</th>
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<tbody>
<tr>
<td>135.00</td>
<td>62.50</td>
<td>15.20</td>
<td>15.20</td>
<td>54.00</td>
</tr>
<tr>
<td>106.00</td>
<td>40.64</td>
<td>9.00</td>
<td>9.00</td>
<td>54.30</td>
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### 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>Certification</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMC-1000M-PH12</td>
<td>V</td>
<td>1</td>
<td>1 SC</td>
<td>1</td>
<td>30W</td>
<td>12/24/48VDC</td>
<td>V</td>
</tr>
<tr>
<td>IMC-1000M-PHE12</td>
<td>V</td>
<td>1</td>
<td>1 SC</td>
<td>1</td>
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<td>V</td>
<td>1</td>
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<td>30W</td>
<td>12/24/48VDC</td>
<td>V</td>
</tr>
</tbody>
</table>

#### Model Naming Rule

- **IMC**
- **1000**
- **M**
- **S**
- **PH**
- **E12**

**IMC** - Industrial Media Converter

**1000** - Base-X

**M** - Managed

**S** - SFP type

**PH** - 1x High Power PoE

**E12** - 12V Booster-20~75°C

Example: IMC-1000M – PHE12 – SC001

### 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

**ISFP** - Industrial SFP Transceiver

**M** - Multi Mode

**7** - 1000Base-X

**040** - 12/24/48VDC

**31** - -10~60°C

**E** - 12V Booster-20~75°C


**Wavelength**

- **00**: Copper
- **55**: 1550nm
- **WA**: TX 1510/RX 1550 (Bidi Mode A)
- **WB**: TX 1550/RX 1310 (Bidi Mode B)