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°C (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 Gigabit Ethernet over twisted pair
- IEEE802.3z 1000Base-X Gigbit 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 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 Port: ON: LFPT Enable, OFF: LFPT Disable
- RJ-45 Port: TX: Connected to network, BLK: Receive /Transmit Data
- RJ-45 Port: RX: On: Connected to network, OFF: Not connected to network, BLK: Networking is active
- RJ-45 Port: PoE Status (Green): Flash: PoE Fault (Over-load or short ), ON: PoE normal working, OFF: No Power output
- RJ-45 Port: PoE (V+): ON: Connected to network, BLK: Receive /Transmit Data
- RJ-45 Port: Data (1,2,3,6,4,5,7,8 )
- RJ-45 Port: PoE (V+): RJ-45 pin 1, 2.
- RJ-45 Port: PoE Status (Green): Flash: PoE Fault (Over-load or short ), ON: PoE normal working, OFF: No Power output

### Power Consumption

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Device Power</th>
<th>PoE Power</th>
<th>Power</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>12VDC</td>
<td>34.2W</td>
<td>3.9W</td>
<td>30W</td>
<td>99%</td>
</tr>
<tr>
<td>24VDC</td>
<td>34.7W</td>
<td>4.4W</td>
<td>30W</td>
<td>99%</td>
</tr>
<tr>
<td>48VDC</td>
<td>35.4W</td>
<td>4.7W</td>
<td>30W</td>
<td>97%</td>
</tr>
</tbody>
</table>

### 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 & Booster efficiency

### 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°C~60°C (IMC-1000S-PH12)
- -20°C~75°C (IMC-1000S-PHE12)

### Storage Temperature

- -40°C~85°C
# Industrial GbE Converter with PoE

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

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

| **EMS** | EN61000-4-2 (ESD) Level 3, Criteria B |
| **EMI** | EN61000-4-3 (RS) Level 3, Criteria A |
| **EMI** | EN61000-4-4 (EFT) Level 3, Criteria A |
| **EMI** | EN 61000-4-5 (Surge) Level 3, Criteria B |
| **EMI** | EN 61000-4-6 (CS) Level 3, Criteria A |
| **EMI** | EN61000-4-8 (PFFM) 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 |
| **MTBF** | MIL-HDBK-217 |
| **Warranty** | 5 years |

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### 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**

1. Manually disable or disconnect fiber link
2. PSE stops supply PoE power to PD device for 3 seconds
3. PD device performs a power reset
Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

**Industrial GbE Converter with PoE**

### Dimensions

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

### Ordering Information

<table>
<thead>
<tr>
<th>Model Name</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>
</tr>
</thead>
<tbody>
<tr>
<td>IMC-1000S-PH12</td>
<td>1</td>
<td>1 SFP</td>
<td>1</td>
<td>12/24/48/DC</td>
<td>30W</td>
<td>V</td>
<td>V</td>
</tr>
<tr>
<td>IMC-1000S-PHE12</td>
<td>1</td>
<td>1 SFP</td>
<td>1</td>
<td>12/24/48/DC</td>
<td>30W</td>
<td>V</td>
<td>V</td>
</tr>
</tbody>
</table>

### Model Naming Rule

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

**Model Name**

- **IMC-1000S-PH12**: 12V Booster, 10-60°C
- **IMC-1000S-PHE12**: 12V Booster, -20-75°C

**Ordering Information**

- **Model Name**
  - **UTP**: 10/100/1000 Base-T
  - **Fiber**: Dual Speed 100/1000Base-X
  - **PoE Port**: IEEE802.3at
  - **Power Budget**: 30W

### 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-1000S-PH12 product for guaranteed compatibility and performance. The best performance can be guaranteed even in mission-critical applications.)

- **MIMO000-85-E**
  - Industrial SFP GbE 1000Base-SX, M/M, 500 meter, wavelength 850nm, 7.5dB, LC, -10~70°C (-40~85°C)
- **ISFP-S7020-31-E**
  - Industrial SFP 1000Base-LX, S/M, 20km, wavelength 1310nm, 15dB, LC, -10~70°C (-40~85°C)
- **ISFP-T7700-00-E**
  - Industrial SFP 1000Base-T UTP 100meter, -10~70°C (-40~85°C)
- **ISFP-M5002-31-E**
  - Industrial SFP 155M 100Base-FX, MM, 2km, wavelength 1310nm, 15dB, LC, -10~70°C (-40~85°C)
- **ISFP-55030-31-E**
  - Industrial SFP 155M 100Base-FX, SM, 30km, 1310nm, 19dB, LC, -10~70°C (-40~85°C)
- **ISFP-T3T00-MA-E**
  - Industrial SFP 100Mbps, long reach UTP (2 wire) (500meter), Master, -10~70°C (-40~85°C)
- **ISFP-T3T00-SL-E**
  - Industrial SFP 100Mbps, long reach UTP (2 wire) (500meter), Slave, -10~70°C (-40~85°C)

**SFP Naming Rule**

- **ISFP**
  - **M**: Multi Mode (M: T-UTP)
  - **7**: 10G Base-E
  - **040**: 1000Base-X
  - **31**: Long Reach UTP
  - **D**: Distance T00: UTP, Distance 00: UTP 00: 500m, 002: 2km, 020: 20km, 040: 40km
  - **E**: Wavelength 00: UTP 85: 850nm, 31: 1310nm, 05: 1550nm, WA: TX/1310nm, WB: TX/1550nm

**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

**CTC Union**

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