

**CTC<sup>®</sup> Union** CTC Union Technologies Co., Ltd.  
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**Quick Installation Guide**

**IMC-1000  
 IMC-1000S  
 IMC-1000-E  
 IMC-1000S-E**

Industrial Grade Gigabit Ethernet Media Converters



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ISO 9001  
 ISO 14001

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**Introduction**

**IMC-1000** is a family of Gigabit Ethernet media converters that support conversion between electrical 10/100/1000Base-TX and optical 100/1000Base-X Ethernet. Housed in rugged DIN rail or wall mountable enclosures, these converters are designed for harsh environments, such as industrial networking and intelligent transportation systems (ITS) and are also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications.

**Features**

- Redundant dual DC inputs 12/24/48VDC
- IP30 rugged metal housing
- Dual rate (100M/1G) optical support
- Wide temperature range -20~75°C (IMC-1000-E & 1000S-E)
- Industrial grade EMS certification (EN61000-6-2)
- UL60950-1, CE, FCC, EN50121-4 Rail traffic

**Specifications**

**Optical Interface**

- 100/1000Base-X
- Options for SC or ST connectors, SFP Model (1000S)
- Multimode (500m) 50/125um, 62.5/125um
- Single mode (20 or 40km) 9/125um
- Wavelength: 1310nm (S/M or M/M)
- BiDi option (20km) for Single mode single fiber

**Ethernet Interface**

- Connector: RJ-45 (shielded)
- Auto MDI/MDI-X
- Speed: 10/100/1000Base-T (Auto)
- Duplex: Full/Half (Auto)
- Standards: IEEE802.3, 802.3u, 802.3x, 802.3ab, 802.3z
- 1024 MAC table
- MTU: 9600K
- Link Fault Pass Through (LFP) enable/disable (by DIP)

**Specifications (cont.)**

**Power**

- Absolute range: 9.6~60VDC
- Reverse polarity protection: Yes
- Dual power inputs: Yes
- Connector: terminal block
- Consumption: 4.2 W

**Mechanical**

- Water & Dust Proof : IP30 Protection
- Dimensions : 106 x 39 x 142mm (D x W x H)
- Mounting : DIN-Rail, Wall Mount (kits included)
- Weight : 630g (1.4 lb)

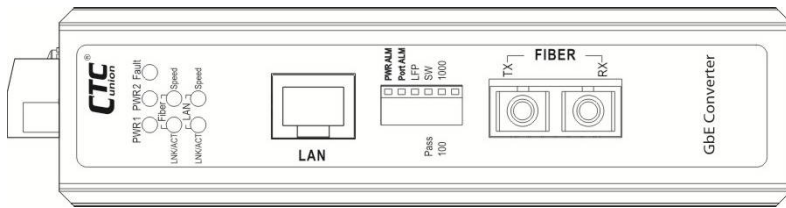
**Environmental**

- Operating Temperature :
- -10°C ~ 60°C, -20°C ~ 75°C (wide temp. for \*-E)
- Storage Temperature: -40°C ~ 85°C
- Humidity : 5 ~ 95% (non-condensing)

**Certifications**

- EMI: (Electromagnetic Interference)
  - EN61000-6-4 Emission for industrial environment
  - FCC Part 15 sub B class A, EN55022 Class A
- EMS: (Electromagnetic Susceptibility)
  - EN61000-6-2 Immunity for industrial environment
  - EN61000-4-2 (ESD) Level 3, Criteria B
  - EN61000-4-3 (RS) Level 3, Criteria A
  - EN61000-4-4 (Burst) Level 3, Criteria A
  - EN61000-4-5 (Surge) Level 3, Criteria B
  - EN61000-4-6 (CS) Level 3, Criteria A
  - EN61000-4-8 (Magnetic Field) Level 3, Criteria A
- Safety: UL60950-1 (pending)
- Railway Traffic: EN50121-4
- Shock: EN60068-2-27
- Freefall: EN60068-2-32
- Vibration: EN60068-2-6
- MTBF: 563,813 hours (IMC-1000) 578980 hours (IMC-1000S)

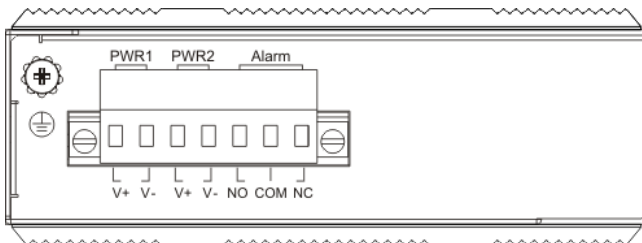
## Connectors



IMC-1000

IMC-1000 has fixed optical transceiver options for connector types of ST or SC while the IMC-1000S model uses industry standard SFP modules. The LAN connection uses a shielded RJ-45 which supports Auto MDI/MDI-X. Configuration settings are accomplished via a 6-pole DIP (dual inline package) switch. Please see the next page for the settings of the operation mode switch.

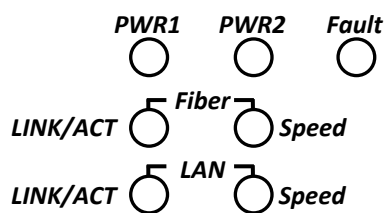
## Power & Alarm



A removable terminal block provides both power and alarm connections. Power can be provided through the dual inputs from separate sources. One electrical relay can be wired into an alarm circuit. From the common pin (COM), the relay can be connected as Normally Open (NO) or Normally Closed (NC). The alarm is triggered in the event of either link loss for optical or electrical or both. The relay is able to support a maximum current carrying capacity of 1A@24VDC.

## LED Indicators

IMC-1000 and IMC-1000S have LEDs on the front face that report the condition of power, Fiber link & Speed, LAN link & Speed as well as power or link fault.



IMC-1000(S) LED Indicators

**PWR1:** This green LED will light if power is connected and active at the PWR1 terminal connection.

**PWR2:** This green LED will light if power is connected and active at the PWR2 terminal connection.

**Fault:** This red LED will light if there is a power, fiber or TP fault condition.

**Fiber LINK/ACT:** This green LED will light when the fiber port has an optical link and flash when there is data traffic.

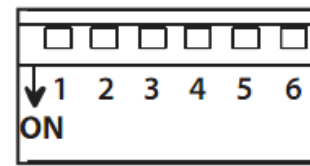
**Fiber Speed:** This two color LED will indicate the fiber speed setting (Sw-5). Green indicates 100M, while amber color indicates 1000M fiber speed.

**LAN LINK/ACT:** This green LED will light when the LAN port has a link and will flash when there is Ethernet traffic.

**LAN Speed:** This two color LED will indicate the UTP (LAN) speed. Green indicates 100M, while amber color indicates 1000M UTP speed. If not lit, a LAN speed of 10M is indicated.

## Operation Mode Switch

IMC-1000 uses a 6-pole DIP switch for configuration.

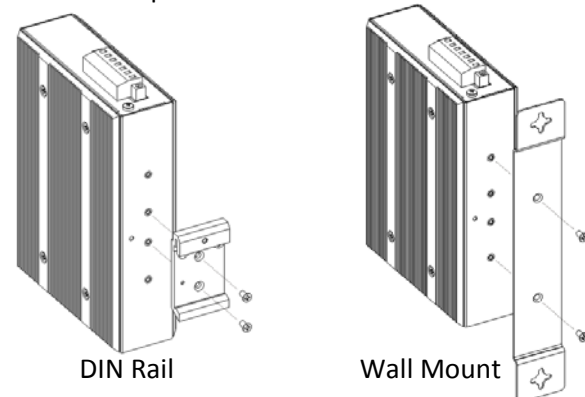


Each pole of the switch has the following functions:

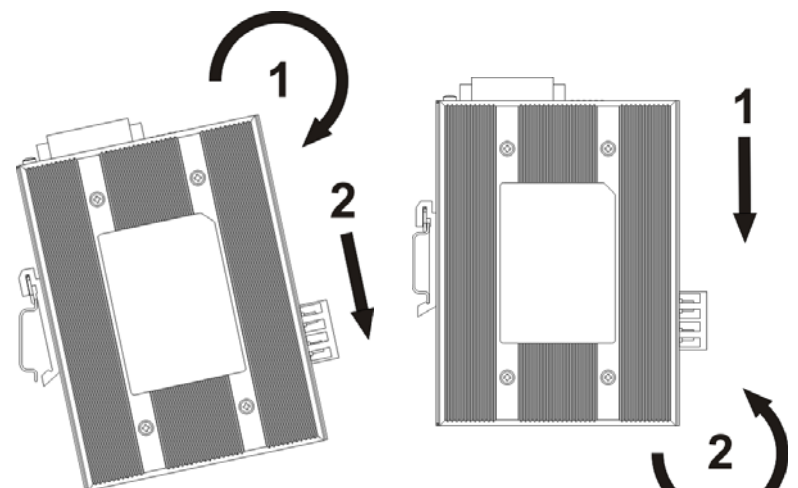
- Power Alarm:** When 'Off' this switch will enable alarm relay if either power input loses power. If only using single power input, set this switch 'On'.
- Port Alarm:** When 'Off' this switch will enable alarm relay if either Ethernet port (copper or fiber) loses link. Set 'On' to disable alarm of link failure.
- LFP:** Link Fault Pass through allows a link condition to be passed from fiber to TP or from TP to fiber. To enable LFP, place this switch in the 'On' position.
- Mode:** When 'Off', this unit acts as a store & forward device supporting MAC learning and filtering. When 'On', this unit acts as a pure 'converter'. In converter mode, the internal switch is bypassed, enabling low latency and support for unlimited frame size. Do not enable LFP in converter mode or fiber may not link. **(Additional note for converter mode:** LAN and Fiber speed must match when configured in converter mode. If fiber speed is 1000M, UTP speed must be 1000M.)
- 100/1000:** When 'Off' this switch will force the FX port speed to 1000M. 'On' will force the speed of FX port to 100M. Please ensure that the SFP modules used in the 1000S are capable of operating in the dual rate.

## Installation

IMC-1000 comes with both wall mount and DIN rail hardware brackets. When installing the DIN rail bracket, be sure to correctly align the orientation pin.



IMC-1000 with DIN Rail bracket has a steel spring in the upper rail of the bracket. This spring is compressed for mounting and un-mounting by applying downward force.



mounting

un-mounting