

IMC-1000C & IMC-1000CS
IMC-1000C-E & IMC-1000CS-E
 Industrial 10/100/1000BaseT(X) to 1000Base-SX/LX or
 100/1000Base-X SFP Fiber Converter (Compact)



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To download this QIG or a more complete user manual, please visit
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Introduction

IMC-1000C(-E) & IMC-1000CS(-E) are compact Gigabit Ethernet media converters that support conversion between electrical 10/100/1000Base-T and optical 1000Base-X or 100/1000Base-X SFP 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. Standard operating temperature range models (-10°C to 60°C) and wide operating temperature range models (-20°C to 75°C) fulfill the special needs of industrial automation applications.

Features

- DC input power 12/24/48VDC or 24VAC
- Compact size and fanless
- IP30 rugged metal housing
- Wide temperature range -20°C~75°C (IMC-1000C-E & IMC-1000CS-E)
- Support Link Fault Pass Through (LFPT)

Specifications

Ethernet Interface

- Standards: IEEE802.3, 802.3u, IEEE802.3ab
- Connector: RJ-45 (shielded)
- Auto MDI/MDI-X
- Speed: 10/100/1000Base-T
- Support 802.3x Flow Control
- Store & Forward Switch/Pass through converter (by DIP)
- Jumbo Frame 9K bytes
- Link Fault Pass Through (LFP) (enable/disable by DIP)

Optical Interface

- Speed: 1000Base-X or 100/1000Base-X
- SC or ST connectors (1000Base-X), SFP slot (100/1000Base-X)
- Multimode (2KM) 50/125um, 62.5/125um
- Single mode (20KM or 40KM) 9/125um
- Wavelength: 1310nm (S/M or M/M)

Specifications (cont.)

Power

- DC Input Power: 12/24/48VDC (9.6~60VDC) or 24VAC (18~36VAC)
- Reverse Polarity Protection: Yes
- Connector: Removable 2-pin terminal block
- Consumption:

Input Voltage	IMC-1000C	IMC-1000CS
DC 12V	2.1W	1.8W
DC 24V	2.2W	2.0W
DC 48V	3.4W	2.9W

Mechanical

- Water & Dust Proof: IP30 Protection
- Dimensions: 70 mm (D) x 30 mm (W) x 103 mm (H)
- Mounting: DIN-Rail mounting, Wall mounting (Optional)
- Weight: 220 g (IMC-1000C & IMC-1000C-E)
215 g (IMC-1000CS & IMC-1000CS-E)

Environmental

- Operating Temp.: -10°C~60°C (IMC-1000C & IMC-1000CS)
-20°C~75°C (IMC-1000C-E & IMC-1000CS-E)
- Storage Temp.: -40°C~85°C
- Humidity: 5%~95% (Non-condensing)

Certifications

- EMC: CE
- EMI (Electromagnetic Interference): FCC Part 15 Subpart B Class A, CE EN55022 Class A
- Railway Traffic: EN50121-4
- Immunity for Heavy Industrial Environment: EN61000-6-2
- Emission for Heavy Industrial Environment: EN61000-6-4
- 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, Magnetic Field) Field Strength: 300A/m, Criteria A
- Shock: IEC 60068-2-27
- Freefall: IEC 60068-2-32
- Vibration: IEC 60068-2-6
- MTBF (MIL-HDBK-217): 325,508 Hours (IMC-1000C(-E))
326,287 Hours (IMC-1000CS(-E))

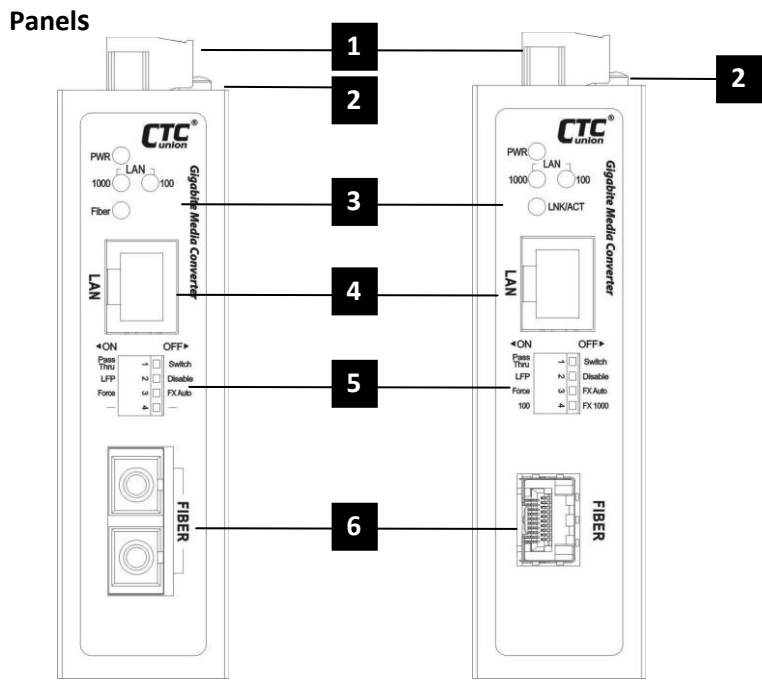


Figure 1. IMC-1000C(-E) Front Panel

Figure 2. IMC-1000CS(-E) Front Panel

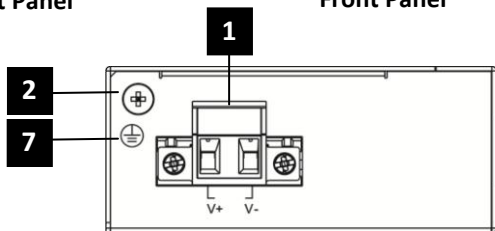


Figure 3. Top Panel

No.	Description
1	Power terminal block
2	Earth ground connector
3	LED indicators
4	LAN interface
5	Function DIP switch
6	Fiber interface
7	Earth ground sign

Table 1: Index Reference

Earth Ground Connection

An earth ground connector is provided on the top panel (See Figure 3) with an earth ground sign next to it. Grounding the device can help to release leakage of electricity to the earth safely so as to reduce injuries from electromagnetic interference (EMI).

Prior to connecting to the power, it is important to connect the ground wire to the earth. Follow steps below to install ground wire:

1. Remove the grounding screw.
2. Attach the grounding screw to the ring terminal of the grounding cable. Make sure that the grounding cable is long enough to reach the earth.
3. Use a screwdriver to fasten the grounding screw.

Power Connection

IMC-1000C(-E) & IMC-1000CS(-E) are powered up by an external power supply. On the top panel, a removable 2-pin terminal block (See Figure 3) is provided for DC power connection. To connect to the power supply, insert V+ and V- wire into power contacts. Then, tighten the wire-clamp screws to prevent power wires from loosening. If the power supply is connected correctly, then the PWR LED on the front panel will light in green.

LED Indicators

LED	Color	Description
PWR	Green	Lit if power is connected and active.
	Off	Power is not connected.
1000	Yellow	The connected LAN speed is 1000M.
	Yellow Blinking	Blinking when there is Ethernet traffic.
	Off	The LAN link is down or LAN speed is 100M.
100	Green	The connected LAN speed is 100M.
	Green Blinking	Blinking when there is Ethernet traffic.
	Off	The LAN link is down or LAN speed is 1000M.
Fiber	Green	Fiber link is up and active.
	Blinking	Blinking when there is Ethernet traffic.
	Off	Fiber link is down.

Fiber & LAN Connection

Both Fiber and LAN interface are located on the front panel (See Figure 1 & Figure 2). The Fiber interface of IMC-1000C(-E) supports 1000Mbps and has fixed optical transceiver options for connector types of ST or SC; whereas, the fiber interface of IMC-1000CS(-E) utilizes a SFP slot that supports 100/1000Mbps. The LAN connection of both IMC-1000C(-E) & IMC-1000CS(-E) supports 10/100/1000Base-T and uses a shielded RJ-45 connector which supports Auto MDI/MDI-X.

Configuration settings are accomplished via a 4-pole DIP switch. Please see below for the settings of the operation mode switch.

DIP Switch Function Descriptions

Pole No.	Status	Setting	Function Description
1	OFF *	Switch	Switching mode.
	ON	Pass Thru	Pass through converter mode.
2	OFF *	Disable	Disable link fault pass through.
	ON	LFP	Enable link fault pass through.
3	OFF *	FX Auto	Fiber duplex auto mode.
	ON	Force	Fiber force mode.
4 For IMC-1000CS(-E) Only	OFF *	1000	Force Fiber speed to 1000Mbps.
	ON	100	Force Fiber speed to 100Mbps.

NOTE 1: By default, all DIP switches are set to OFF (marked with *).

NOTE 2: When LFP is enabled, the LAN port (Fiber port) link down will force Fiber port (LAN port) link down.

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	Yellow Blinking	Blinking when there is Ethernet traffic.
	Off	The LAN link is down or LAN speed is 100M.
100	Green	The connected LAN speed is 100M.
	Green Blinking	Blinking when there is Ethernet traffic.
	Off	The LAN link is down or LAN speed is 1000M.
Fiber	Green	Fiber link is up and active.
	Blinking	Blinking when there is Ethernet traffic.
	Off	Fiber link is down.

Installation

IMC-1000C(-E) & IMC-1000CS(-E) can be installed in DIN rail or mounted in wall (optional). Hardware brackets for DIN rail installation are provided with the device. However, wall-mounting brackets are not provided. If you need wall-mounting installation kit, please contact your sales representative.

When installing the DIN rail and wall-mounting bracket, be sure to correctly align the orientation pin.

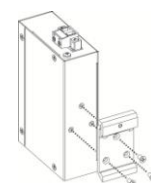


Figure 4. DIN Rail

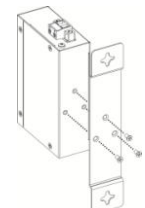


Figure 5. Wall Mounting

The IMC-1000C(-E) & IMC-1000CS(-E) with DIN Rail bracket have a steel spring in the upper rail of the bracket. This spring is compressed for mounting and un-mounting by applying downward force.

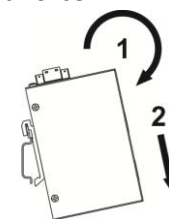


Figure 6. Mounting

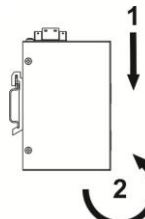


Figure 7. Un-mounting

Application

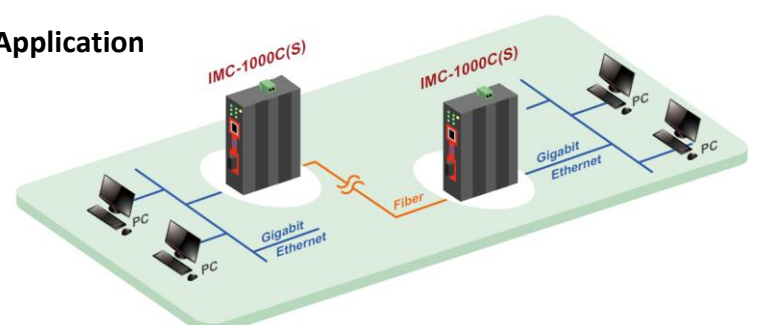


Figure 8. IMC-1000CS(-E) Application