

Quick Installation Guide

IMC-1000WS-PBE

Industrial Grade Web Managed PoE Media Converter



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WARNING:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual may cause harmful interference in which case the user will be required to correct the interference at his own expense. NOTICE: (1) The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. (2) Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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Introduction

IMC-1000WS-PBE are industrial grade 1-port Ethernet PoE (Power over Ethernet) media converter. PoE technology describes a system to pass electrical power safely, along with data, on Ethernet cabling. The original IEEE 802.3af-2003 PoE standard provides up to 15.4W of DC power to connected devices. The updated IEEE 802.3at-2009 PoE standard also known as PoE+ or PoE plus, provides up to 30W of power. It is worth mentioning that IMC-1000WS-PBE can provide up to 90W power through the use of all 4 pairs of category 5e (or above) cable. Thus, IMC-1000WS-PBE are ideal products for applications that need more power budget.

Housed in a rugged DIN rail or wall mountable enclosure, this product is designed for harsh environments, such as industrial networking, intelligent transportation systems (ITS) and is also suitable for many military and utility market applications where environmental conditions exceed commercial product specifications.

Package List

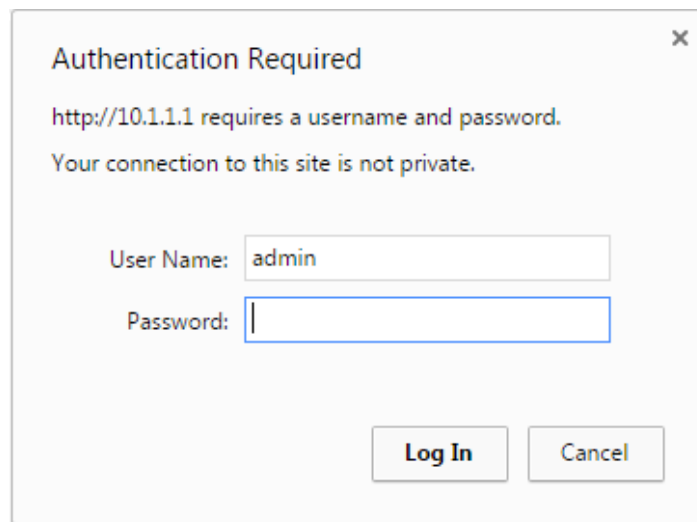
- IMC-1000WS-PBE device
- DIN rail bracket with screws
- Terminal block for power inputs
- Protective cap for SFP slot

Features

- Provides 1-port IEEE 802.3at/af/bt PoE
- DC input power 48VDC (44~57VDC)
- Redundant dual power inputs
- IP30 rugged metal housing
- Fanless design
- Supports wide operating temperature range -20°C~70°C

Access to Web-Based Management Interface

To enter the web-based management interface for the first time or after returning the device back to factory defaults, input the default IP address “**10.1.1.1**” in your favorite web browser. Then, a standard login prompt will appear depending on the type of browser used. The example below is with Firefox browser.



Authentication Required

http://10.1.1.1 requires a username and password.
Your connection to this site is not private.

User Name:

Password:

Enter the factory default username “**admin**” with **no password**. After successfully entering the web-based management, the Port State page will appear. For complete Web GUI operation, please refer to the Operation User Manual.

Specifications

Ethernet Interface

- Standards: IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- Connector: RJ-45 (shielded)
- Auto MDI/MDI-X
- Speed: 10/100/1000Mbps
- Cable: Category 5e or above twisted pair cable
- Supports 802.3x Flow Control
- Operates in Store and Forward switch or Pass through mode
- Supports Link Fault Pass Through function
- Jumbo Frame 16K Bytes (Store & Forward Switching mode)

Optical Interface

- Standards: IEEE 802.3u, IEEE 802.3z
- Speed: 100/1000Mbps
- Connector: SFP slot
- Fiber cable: Multimode (500m) 50/125um, 62.5/125um; Single mode (2km, 20km or 40km) 9/125um

Power over Ethernet

- Supports IEEE 802.3af (15.4W), IEEE 802.3at (30W), IEEE 802.3bt (90W)
- End-Span, Alternative A mode
- PoE Pin Assignments:
 - Positive (V+) Pins: RJ-45 Pin 1, 2, 4, 5
 - Negative (V-) Pins: RJ-45 Pin 3, 6, 7, 8
 - Data Pins: RJ-45 Pin 1, 2, 4, 5, 3, 6, 7, 8
- 90W PoE power budget

Power

- DC Input Power: 48VDC (44~57VDC)
 - 54~57VDC is recommended for 90W (4 Pairs) PoE applications
 - 52~57VDC is recommended for 60W (4 Pairs) PoE applications
 - 52~57VDC is recommended for 30W (2 Pairs) PoE applications
 - 44~57VDC is recommended for 15.4W (2 Pairs) PoE applications
- Supports redundant dual power inputs
- Supports power input reverse polarity protection
- Connector: removable 4-pin terminal block
- Power Consumption:

Input Voltage	Total Power Consumption	Device Power Consumption	PoE Budget
55VDC	98.5W	5.0W	90W

Mechanical

- Fanless design
- 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: 245g

Environmental

- Operating Temperature: -20°C~70°C
- Storage Temperature: -40°C~85°C
- Humidity: 5%~95% (Non-condensing)

Certifications

- EMC: CE (EN55032, EN55035)
- EMI (Electromagnetic Interference): FCC Part 15 Subpart B Class A, CE
- EMS (Electromagnetic Susceptibility) Protection Level:
 - 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 (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)

- 1,178,420 hours

Panels

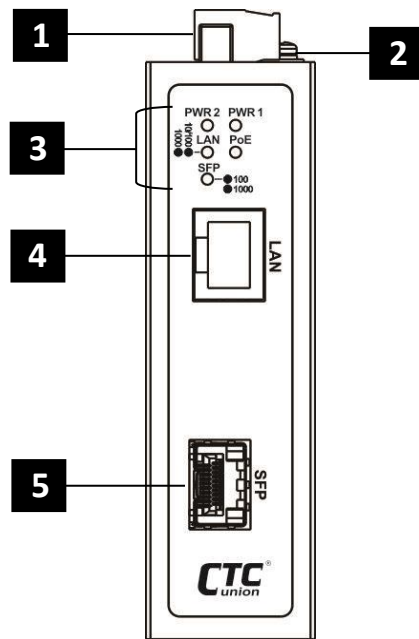


Figure 1. Front Panel

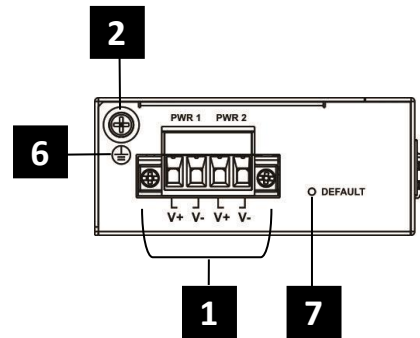


Figure 2. Top Panel

No.	Description
1	Power terminal block
2	Earth ground connector
3	LED indicators
4	LAN interface
5	Optical fiber interface (SFP slot)
6	Earth ground sign
7	Reset to default push-button

LAN & Fiber Port

IMC-1000WS-PBE devices have one electrical LAN port and one SFP-based fiber port on the front panel. The LAN port that utilizes shielded RJ-45 connector supports 10/100/1000M and PoE function; while the fiber port supports dual rate 100/1000M.

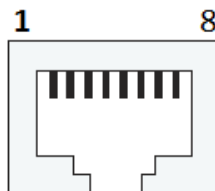
Power over Ethernet (PoE)

The LAN port supports PoE per IEEE802.3af (15.4W), IEEE802.3at (30W) or IEEE802.3bt (90W) for connection to a standard PoE PD (Power Devices) such as IP Cameras, Access Points, IP Phones, Digital Signage, etc. PoE eliminates the need to run separate power to these devices thereby simplifying deployment and reducing expenses.

The LAN port may also connect to any non-PoE device for normal Ethernet transmission without any damage to the non-PoE device or to this device.

Note: By default, PoE function is disabled. If you want to use PoE function, please enable this function via Web (GUI) operation. For detailed descriptions on Web (GUI) operation, please refer to the Operation User Manual.

RJ-45 Ethernet Port Pinouts



RJ-45 Ethernet & PoE Pin Assignments

Pin No.	RJ-45 Ethernet		PoE Output
	100M	1000M	
1	RX+	TRD 0+	V+
2	RX-	TRD 0-	V+
3	TX+	TRD 1+	V-
4	-	TRD 2+	V+
5	-	TRD 2-	V+
6	TX-	TRD 1-	V-
7	-	TRD 3+	V-
8	-	TRD 3-	V-

Recommended Power & Ground Wiring Scheme

Power Connection

IMC-1000WS-PBE media converters are powered up by an external power supply. On the top panel, a removable 4-pin terminal block is provided for two pairs (PWR1 & PWR2) of 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.

Earth Ground Connection

An earth ground connector is provided on the top panel 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 ground screw.
2. Attach the ground screw to the ring terminal of the grounding cable. Make sure that the ground cable is long enough to reach the earth.
3. Use a screwdriver to fasten the ground screw.

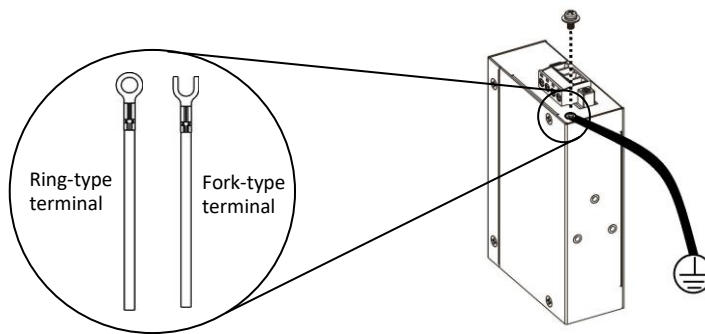


Figure 3. Ground Cable Types

Figure 4. Ground Connection

LED Indicators

LED	Color	Status	Description
PWR	Green	On	Lit if power is connected and active.
		Off	Power is not connected.
LAN	Amber	On	The connected LAN speed is 1000M.
		Blinking	Blinking when there is Ethernet traffic.
		Off	The LAN link is down or LAN speed is 10/100M.
	Green	On	The connected LAN speed is 10/100M.
		Blinking	Blinking when there is Ethernet traffic.
		Off	The LAN link is down or LAN speed is 1000M.
SFP	Green	On	Fiber link is up and fiber speed is 100M.
		Blinking	Blinking when there is Ethernet traffic.
		Off	Fiber link is down.
	Amber	On	Fiber link is up and fiber speed is 1000M.
		Blinking	Blinking when there is Ethernet traffic.
		Off	Fiber link is down.
PoE	Green	On	PoE LED indicator is lit and remains steady on when the LAN port has successfully negotiated PoE and is supplying output power to the remote connected PD.
		Off	No PoE power input.

Reset to Default Push Button

Using a pencil or ball-point pen, press the “DEFAULT” recessed push-button switch (located on the top panel) and hold for 6 seconds or until the LEDs flash very rapidly. The unit will be restored to factory default almost immediately. The defaults are:

IP = 10.1.1.1

Netmask = 255.255.255.0

Username: admin

Password: None (Leave this field blank)

Installation

IMC-1000WS-PBE can be installed in DIN rail or mounted on 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.

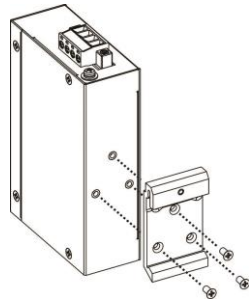


Figure 5. DIN Rail

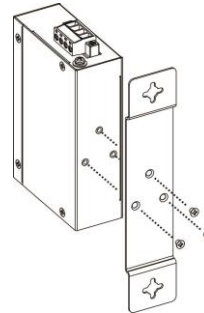


Figure 6. Wall Mounting

IMC-1000WS-PBE 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.

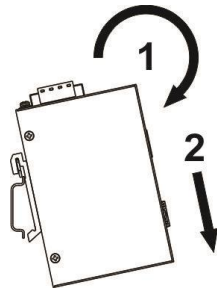


Figure 7. Mounting

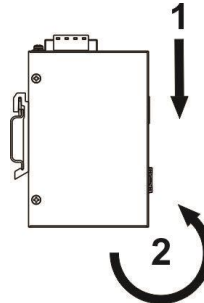


Figure 8. Un-mounting

