Hardware Installation Guide

Industrial media converter

IMC-C121FB-MM
IMC-C121FB-SS

1. Introduction

Ethernet Switches are designed with a very compact housing size and are fitted with a robust housing. To ensure reliable, error-free operation, and to prevent damage or injury, please read the operating instructions, all safety information provided in this document and any other safety information that were supplied with the product.

2. Safety notice

	Switch off the electrical power before removing the power connection!
	The device heats up during operation. Allow the unit to cool down or use protection gloves when carrying out any work.
	The device may only be connected to the supply voltage shown on the product label. Higher voltage than specified will destroy the device. The device must be supplied by a SELV source as defined in the Low Voltage Directive 2014/35/EU and 2014/30/EU.
	Installation, commissioning and maintenance may only be performed by qualified electricians.
	Observe the operating instructions.
	• Indoor use and pollution degree II, it must be wiped with a dry cloth for clean up the device and label. • If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. • Shall be mounted in the Industrial Control Panel and ambient temperature is not exceed 60 degrees C.

Intended use
The device is intended for the realization of communication networks within an industrial environment, it is intended to be used in a restricted access location. The device may only be used within the scope of the specified technical data. The device is intended to be mounted to a well-grounded mounting surface, such as a metal panel. Any other use may result in unintentional malfunction and damage. Observing the documentation is part of the intended use.

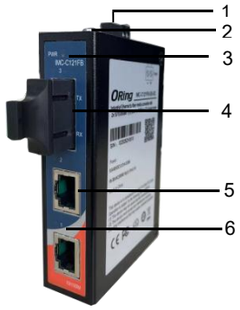
Environmental conditions
This equipment is intended to be used in a restricted access location.
When planning the installation site make sure that the ambient temperature during operation will not exceed the temperature given in the technical data.
Also make sure that the air flow will not be compromised by other devices.
Ensure that the mounted and wired device is not exposed to any mechanical stress.

3. Package Checklist

Your Ethernet Switch is shipped with the following items:

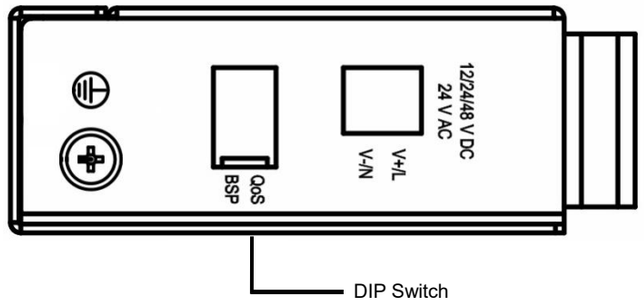
- Ethernet Switch
- Hardware Installation Guide (printed)
- 2-Pin Terminal connector

4. Panel Layouts



1. Terminal block for power input PWR
2. Grounding screw / Frame ground
Note: The shielding ground of the LAN port is electrically connected to the grounding screw.
3. Power input LED
4.1 x 10/100Base –FX Port
5. 2X 100Base-TX Ports
6. LAN Port Link/Activity LED

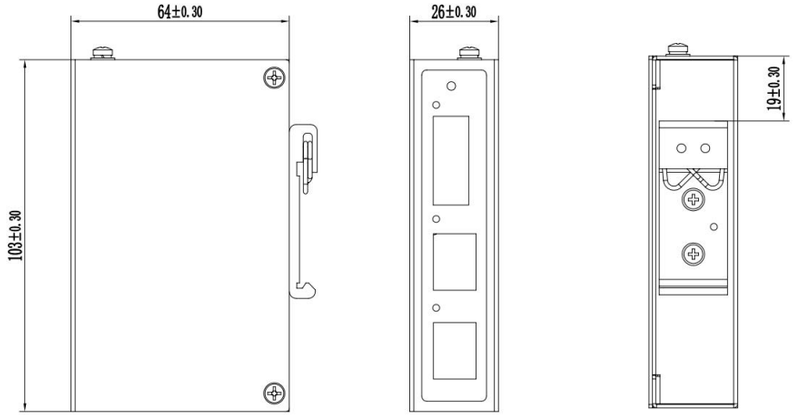
5. DIP Switch



DIP Switch	Setting	Description
Quality of Service (QoS)	ON	Enable the Quality of Service to handle packet priorities in two WRR queues. QoS and ToS/DSCP priority mapping matrix in each queue QoS 3bit priority: 7,6,5,4 | 3,2,1,0 Queues: 1 | 0 WRR: 16 | 1
	OFF	Disable the Quality of service
Broadcast storm protection (BSP)	ON	Enables broadcast storm protection (only allow maximum of 200 broadcast packets per second) for each Ethernet port.
	OFF	Disables the broadcast storm protection

6. Mounting Dimensions

(units = mm)

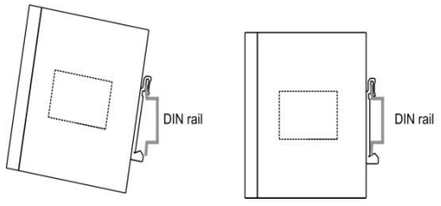


7. DIN-Rail Mounting

Slide the switch onto a DIN-rail and make sure that the switch's Din-rail clip clicks into the rail firmly.

STEP 1: Insert the top of the DIN-Rail into the slot just below the stiff metal spring.

STEP 2: The DIN-Rail attachment unit will snap into place as shown below.



To remove the DIN-rail from the Ethernet Switch, simply reverse Steps 1 and 2.

8. Grounding Ethernet Switch

ATTENTION

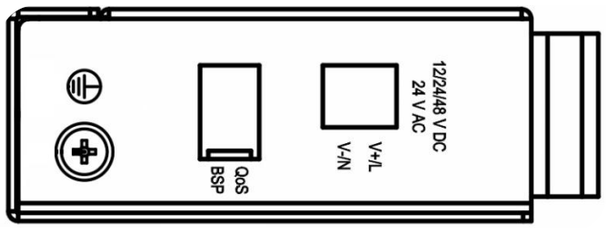
- Grounding and wire routing help limit the effects of noise due to electromagnetic interference (EMI).
- the ground connection from the ground screw to the grounding surface prior to connecting devices.
- This product is intended to be mounted to a well-grounded mounting surface, such as a metal panel.
- The shielding ground of the RJ45 ports are electrically connected to the ground connection (screw).

9. Wiring the Power Inputs

The switch power supply inputs which are located on the 2-pin terminal block. Refer to illustration below for correct wiring.

Warning

- Take into consideration the following guidelines before wiring the device
- Terminal block is mating with Plug and suitable for 12-24AWG. Torque value 4.5 lb-in.
- The temperature rating of the input connection cable should higher than 105°C.
- Supplied by SELV source evaluated by UL 61010-1 or 61010-2-201 power supply only.



10. Communication Connections

IMC-C121FB-MM is equipped with following communication interfaces:
2x10/100Base-T(X) ports and 1x100Base-FX ports, multi-mode.

IMC-C121FB-SS is equipped with following communication interfaces:

2x10/100Base-T(X) ports and 1x100Base-FX ports, single-mode.

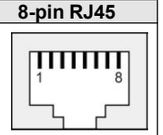
Please only use cables suitable for the respective type of communication and ensure that signals are protected from possible interference.

10.1 10/100Base-T(X) RJ45 Ports

The 10/100Base-T(X) ports located on Ethernet Switch's front panel are used to connect to Ethernet-enabled devices. Below we show pinouts for both MDI (NIC-type) ports and MDI-X (HUB/Switch-type) ports. Auto MDI-X ensures that both wiring-schemes are supported. (Automatic crossover function)

Each RJ45 Ethernet port independently supports auto-negotiation for recognizing the transmission speed 10 Mbps or 100 Mbps according to the IEEE802.3 standard. This means that some of connected Ethernet devices could operate at 10 Mbps, while at the same time other nodes are operating at 100 Mbps.

10/100Base-T(X) RJ45 Pinouts

MDI Port Pinouts		MDI-X Port Pinouts		8-pin RJ45
Pin	Signal	Pin	Signal	
1	Tx+	1	Rx+	
2	Tx-	2	Rx-	
3	Rx+	3	Tx+	
6	Rx-	6	Tx-	

Note about possible loss of data packages in case of "Duplex mismatching"

If the switch's auto-negotiation port is connected to a non-negotiating device, then the switch will set its port transmission speed same as the connected device but is unable to correctly detect the duplex mode.

As result the port is set to the correct speed but is using always the half duplex mode as required by the IEEE 802.3u standard in such cases.

For correct transmission, the non-negotiating port must be set to half-duplex mode (speed can be either 10 Mbps or 100 Mbps, it always will be recognized automatically by an Auto-Negotiation-Device).

10.2 100Base-FX Ports

Please connect the Tx (transmit) port of device A to the Rx (receive)

port of device B , and the Rx (receive) port of device A to the Tx (transmit)

port of device B .

Note: The Fiber parameters: fiber mode, wavelength and optical Power at both communication ends must be the same.

11. LED Indicators

The front panel of the Ethernet Switch contains several LED indicators. The function of each LED is described in the table below.

LED	Color	Status	Description
PWR	Green	On	Power is being supplied to power input PWR
		Off	Power is not being supplied to power input PWR
LNK/ACT	Green	On	Port's link is active.
		Off	Port's link is inactive.
		Blinking	Transmitting data.

12. Specifications

Technology	
Standards	IEEE 802.3 for 10Base-T IEEE 802.3u for 100Base-TX and 100Base-FX IEEE 802.3x for Flow Control IEEE 802.1p for Class of Service
Processing Type	Store and Forward
MAC Table size	1K
Packet buffer size	448 Kbit
Interface	
RJ45 Ports	10/100Base-T(X) auto negotiation speed, F/H duplex mode and auto MDI/MDI-X connection
Fiber Ports	IMC-C121FB-MM:100M,Multi-Mode, 2KM IMC-C121FB-SS :100M,Single-Mode, 30KM
LED Indicators	PWR , LNK/ACT
Power	

Input Voltage	9.6~60VDC & 18~30VAC
Input Current @24 VDC	0.13A
Connection	One removable 2-pin terminal block, Wiring cable 0.2-3.31mm^2
Overload Current Protection	Present
Reverse Polarity Protection	Present
Physical Characteristics	
Housing	IP40 protection, metal
Dimension (W x H x D)	26.0 x 103 x 64 mm
Weight	145g
Installation	DIN-rail
Environmental conditions	
Operating Temperature	-10 to 60°C (14 to 140°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	up to 2000 m
Pollution Degree	2
Regulatory Approvals	
Safety	EN 62368-1
EMC	EN 55032, EN 55035, Class A, IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV, IEC 61000-4-3 RS: 80 MHz to 1 Ghz: 10V/m, IEC 61000-4-4 EFT: Power: 2kV; Signal: 2 kV, IEC 61000-4-5 Surge: Power: 2kV; Signal: 2 kV, IEC 61000-4-6 CS: 10 Vrms
Shock	IEC 60068-2-27
Free Fall	IEC 60068-2-31
Vibration	IEC 60068-2-6
Warranty	
Time Period	5 years

Contact Information

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