Moxa IMC-21A-S-SC

Moxa IMC-21A-S-SC Industrial Media Converter User Manual

Model: IMC-21A-S-SC

1. Introduction

The Moxa IMC-21A-S-SC is an industrial-grade media converter designed to seamlessly convert 10/100BaseTX Ethernet signals to 100BaseFX fiber optic signals. This device supports single-mode fiber with an SC connector, making it suitable for extending network distances in harsh industrial environments. It operates reliably within a temperature range of -10 to 60 °C, ensuring stable performance in demanding applications.

2. Safety Information

- Always disconnect power before installation or maintenance.
- Ensure proper grounding to prevent electrical hazards.
- Do not expose the device to moisture or extreme temperatures outside its specified operating range.
- Handle fiber optic cables with care; avoid bending them sharply.
- Refer to local electrical codes and regulations for installation.

3. Package Contents

Before installation, verify that your package contains the following items:

- Moxa IMC-21A-S-SC Industrial Media Converter
- Quick Installation Guide
- Warranty Card
- Terminal block for power input

If any of these items are missing or damaged, please contact your vendor immediately.

4. Hardware Description

The IMC-21A-S-SC features a robust design with clearly labeled ports and LED indicators for easy monitoring and setup.

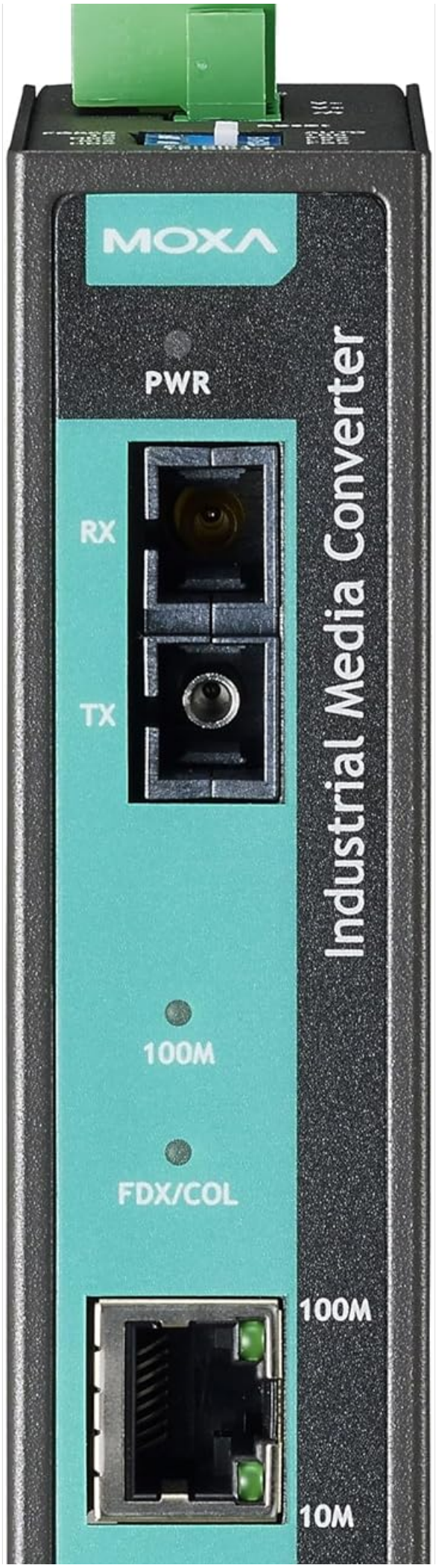
MOXA
PWR
RX
TX
Industrial Media Converter
100M
FDX/COL
100M
10M

Figure 1: Front Panel of IMC-21A-S-SC Media Converter

The image displays the front panel of the Moxa IMC-21A-S-SC Industrial Media Converter. Visible components include the PWR LED, RX and TX fiber optic ports (SC connector type), 100M LED, FDX/COL LED, and the 10/100BaseTX Ethernet port (RJ45). The model number IMC-21A is printed at the bottom.

4.1. LED Indicators

- **PWR:** Indicates power status. Lit when the device is powered on.
- **100M (Fiber):** Lit when the fiber optic link is established at 100 Mbps.
- **FDX/COL (Fiber):** Lit for Full Duplex mode; flashes for collision detection in Half Duplex mode.
- **100M (Ethernet):** Lit when the Ethernet link is established at 100 Mbps.
- **10M (Ethernet):** Lit when the Ethernet link is established at 10 Mbps.

4.2. Ports

- **10/100BaseTX (RJ45):** Standard Ethernet port for connecting to copper-based network devices. Supports auto-negotiation.
- **100BaseFX (SC Connector):** Fiber optic port for single-mode fiber connections. RX (Receive) and TX (Transmit) are clearly marked.

5. Installation

5.1. Mounting

The IMC-21A-S-SC can be DIN-rail mounted or wall-mounted. Ensure adequate ventilation around the device.

1. **DIN-Rail Mounting:** Attach the DIN-rail kit (if not pre-installed) to the rear of the converter. Snap the converter onto a standard DIN rail.
2. **Wall Mounting:** Use screws to secure the device to a wall or panel through the provided mounting holes.

5.2. Power Connection

Connect a compatible DC power supply (not included) to the terminal block on the top of the device. Ensure correct polarity. The PWR LED will illuminate upon successful power connection.

5.3. Network Connections

1. **Ethernet Connection:** Connect an RJ45 Ethernet cable from your network device (e.g., switch, PC) to the 10/100BaseTX port on the converter.
2. **Fiber Optic Connection:** Connect a single-mode fiber optic cable with SC connectors to the 100BaseFX RX and TX ports. Ensure that the TX port of one device connects to the RX port of the other, and vice-versa.

6. Operation

Once all connections are made and power is supplied, the IMC-21A-S-SC will automatically establish the network links.

Observe the LED indicators to confirm proper operation:

- The **PWR** LED should be steadily lit.
- The **100M (Fiber)** LED should be lit if a 100 Mbps fiber link is established.
- The **FDX/COL (Fiber)** LED should be lit for full-duplex operation.
- The **100M** or **10M (Ethernet)** LED should be lit, indicating the established Ethernet speed.

Data transmission will occur transparently between the Ethernet and fiber optic segments.

7. Maintenance

The IMC-21A-S-SC is designed for minimal maintenance. However, periodic checks can ensure optimal performance:

- Keep the device clean and free from dust. Use a soft, dry cloth for cleaning.
- Inspect fiber optic connectors for cleanliness. Use appropriate fiber cleaning tools if necessary.
- Ensure all cables are securely connected and not damaged.
- Verify that the operating environment remains within the specified temperature and humidity ranges.

8. Troubleshooting

If you encounter issues with your IMC-21A-S-SC, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No Power (PWR LED off)	No power supply, incorrect connection, faulty power supply.	Check power cable and terminal block connection. Verify power supply output.
No Fiber Link (100M Fiber LED off)	Incorrect fiber connection, damaged fiber cable, incompatible fiber type, faulty transceiver.	Ensure TX connects to RX. Check fiber cable for damage. Verify single-mode fiber usage. Clean SC connectors.
No Ethernet Link (100M/10M Ethernet LED off)	Incorrect Ethernet cable, damaged cable, connected device off/faulty.	Check RJ45 cable connection. Test with a known good cable. Ensure the connected Ethernet device is operational.
Slow Network Performance	Duplex mismatch, network congestion.	Check FDX/COL LED. Ensure connected devices are set to auto-negotiation or matching duplex settings.

If the problem persists, contact Moxa technical support for further assistance.

9. Specifications

Feature	Detail
Model	IMC-21A-S-SC
Connectivity Technology	Ethernet, Fiber Optic
Compatible Devices	Desktop (general network devices)

Feature	Detail
Package Dimensions	8.5 x 6.5 x 3 inches
Item Weight	1.1 pounds
Operating Temperature	-10 to 60 °C
Manufacturer	MOXA
Date First Available	April 23, 2018

10. Warranty and Support

Moxa products are backed by a standard warranty. For detailed warranty information, please refer to the warranty card included in your package or visit the official Moxa website. For technical support, product documentation, or driver downloads, please visit www.moxa.com/support.