








MC352-1P-1S Industrial PoE+ Media Converter User Manual

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Version	This document applies to MC352-1P-1S.
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Important information

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Advisory messages alert you to conditions or practices that can cause unwanted results. The advisory messages used in this document are shown and described below.

WARNING: Warning messages advise you of hazards that could result in injury or loss of life. They tell you which actions to take or to avoid in order to prevent the injury or loss of life.

Caution: Caution messages advise you of possible equipment damage. They tell you which actions to take or to avoid in order to prevent damage.

Note: Note messages advise you of the possible loss of time or effort. They describe how to avoid the loss. Notes are also used to point out important information that you should read.

Chapter 1

Introduction

The description of the IFS MC352-1P-1S model is as follows: 1000BASE-SX/LX to 10/100/1000BASE-T 802.3at PoE Industrial Media Converter

Unless specified, the term “industrial media converter” mentioned in this user manual refers to the MC352-1P-1S.

Package contents

Check the contents of your package for the following parts:

- The industrial media converter × 1
- DIN rail kit × 1
- Wall mounting kit × 1
- RJ45 dust cap × 1
- SFP dust cap × 1

If any of these are missing or damaged, contact your dealer immediately. If possible, retain the carton including the original packing materials for repacking the product in case there is a need to return it to us for repair.

Product description

The MC352-1P-1S Gigabit Media Converter combines Ethernet media conversion (from 1000BASE-X to 10/100/1000BASE-T) with 802.3at Power over Ethernet Plus (PoE+) injector to deliver both up to 30 W of power output and high data transmission speed to PDs (powered devices) installed in a remote area where sufficient and reliable power input is required. Its 1000BASE-X fiber optic uplink port provides long distance, high speed, and stable data transmission to a remote core network. The special and convenient power system of the industrial media converter supports 24~48 VDC power input for power redundancy and operational flexibility.

Being able to operate under the temperature range of -40 to 75°C and with an IP30 rugged case, the industrial media converter can be placed in almost any difficult environment.

Fiber-optic link capability extends the range of network deployment

The maximum distance between a PoE PSE (power sourcing equipment) and PD via Ethernet cable is 100 meters. To extend the PoE deployment range, the industrial media converter is integrated with fiber interface for further distance applications. The industrial media converter's fiber connector type is an SFP slot supporting 1000BASE-X multi/single mode SFP modules and a transmission distance up to 120 km (depending on the SFP module).

With the long fiber distance support, the industrial media converter still sustains the transmission performance as high as 1000 Mbps. It works in the high-performance Store and Forward mechanism, and also can prevent packet loss with IEEE 802.3x flow control and the LFP (Link Fault Pass-through) function in the DIP switch design. Furthermore, it can immediately alarm the administrators the issue from the link media and provide efficient solution to monitor the network power usage.

Plug and play high power sourcing solution

Complying with the IEEE 802.3at Power over Ethernet Plus technology, the industrial media converter provides up to 30 W of PoE output power, doubling that of the earlier 802.3af. It is also backward compatible with 802.3af PoE standards to allow users to flexibly deploy standard and high powered devices simultaneously with no software configuration. With data and Power over Ethernet from one unit, the industrial media converter can reduce cable deployment and eliminate the need for dedicated electrical outlets on the wall, ceiling, or any unreachable place.

Convenient and reliable power system

To facilitate the 802.3at power PoE+ usage with the commonly-used 24~48 VDC power input for transportation and industrial-level applications, the industrial media converter adopts the 24~48 VDC to 52 V power boost technology to solve power source issues but does not require special power supplies. Its wide-ranging voltages design is suitable for worldwide operability with high availability applications requiring dual or backup power inputs.

Environmentally hardened design for industrial PoE networks

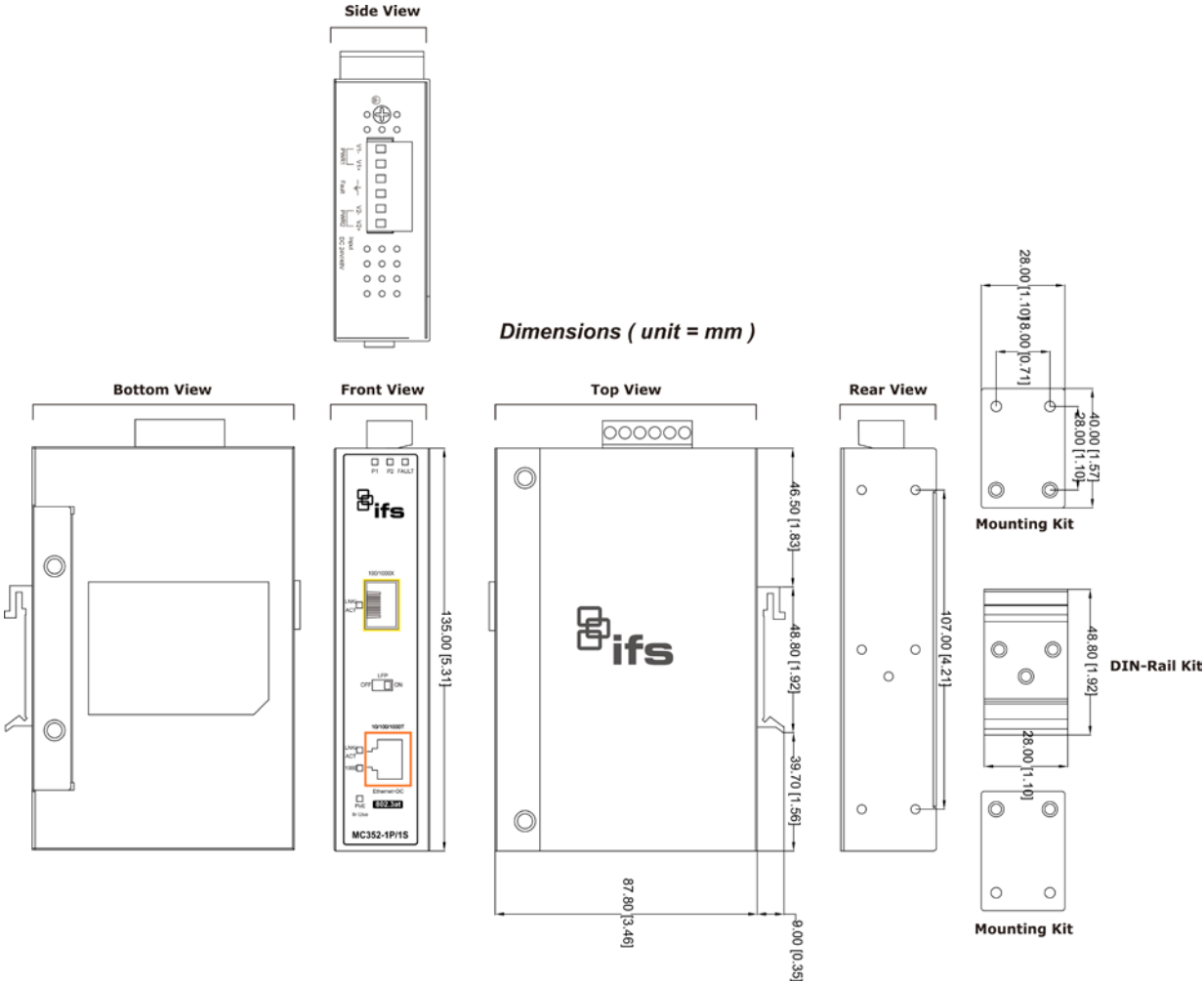
The industrial media converter is specifically designed with durable components and a strong housing case to operate reliably in electrically harsh and climatically demanding environments like plant floors or curbside traffic control cabinets. The industrial media converter is packaged in a compact, IP30 rugged case that permits either DIN-rail or wall mounting for efficient use of cabinet space. With IP30 rugged case protection and PoE design, the industrial media converter is ideal for service providers, campuses, and public areas to cost-effectively deploy PoE wireless access points, IP cameras, or IP phones easily and efficiently. It can also operate in a wide temperature range of -40 to 75°C, so it can be placed in almost any location.

Chapter 2

Hardware introduction

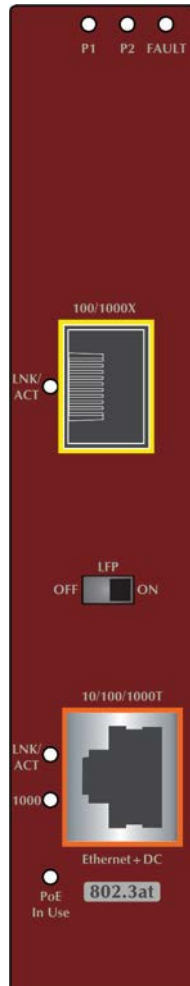
Physical dimensions

Dimensions (W x D x H): 135 x 87 x 32 mm



Front panel

The front panel of the industrial media converter consists of one 1000Base-SX / 1000Base-LX / mini-GBIC SFP port and one Auto-Sensing 10/100/1000Mbps Ethernet RJ-45 Port.



LED indicators

The front panel LEDs indicate port link status, data activity, and system power.

System

LED	Color	Function
P1	Green	Lit: indicates that the power input 1 has power.
P2	Green	Lit: indicates that the power input 2 has power.
Fault	Green	Lit: indicates that either power 1 or power 2 has no power.

Gigabit fiber interface

LED	Color	Function
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Fiber LNK/ACT	Green	<p>Lit: indicates that the fiber optical port has successfully connected to the network at 1000 Mbps.</p> <p>Blinking: indicates that the fiber optical is actively sending or receiving data over that port.</p>
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Gigabit TP interface

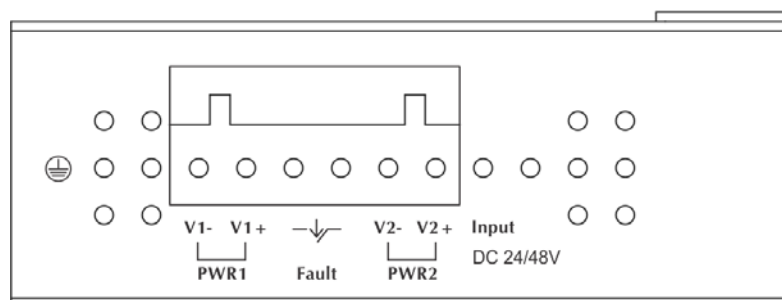
LED	Color	Function
TP LNK/ACT	Green	<p>Lit: indicates the port has successfully connected to the network at 10/100/1000 Mbps.</p> <p>Blinking: indicates that the port is actively sending or receiving data.</p>
TP 1000	Green	<p>Lit: indicates the port has successfully connected to the network at 1000 Mbps.</p> <p>Off: indicates that the port has successfully connected to the network at 10/100 Mbps.</p>

PoE

LED	Color	Function
PoE In-use	Orange	<p>Lit: indicates that the port is providing 52 VDC to a remote powered device.</p> <p>Off: indicates that the port is not providing 52 VDC to a remote powered device).</p>

Top panel

The top panel of the industrial media converter consists of one terminal block connector within two DC power inputs.

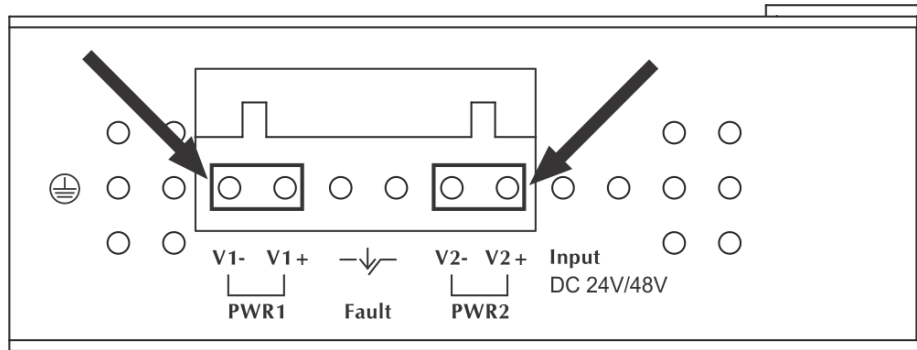


Wiring the power inputs

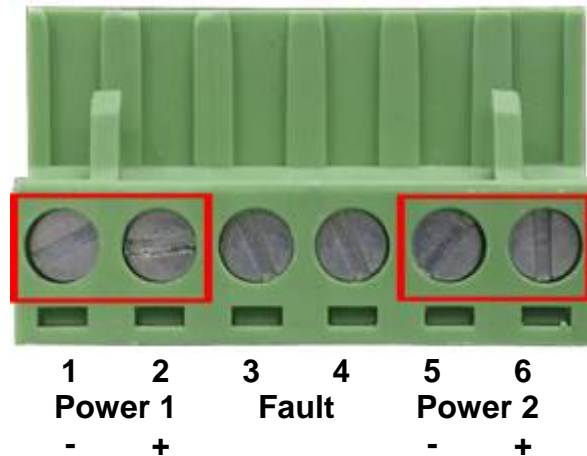
The 6-contact terminal block connector on the top panel of the industrial media converter is used for two DC redundant power inputs. Follow the steps below to insert the power wire.

Caution: When performing any of the procedures like inserting the wires or tightening the wire-clamp screws, make sure the power is OFF to prevent from getting an electric shock.

1. Insert positive/negative DC power wires into contacts 1 and 2 for Power 1, or 5 and 6 for Power 2.

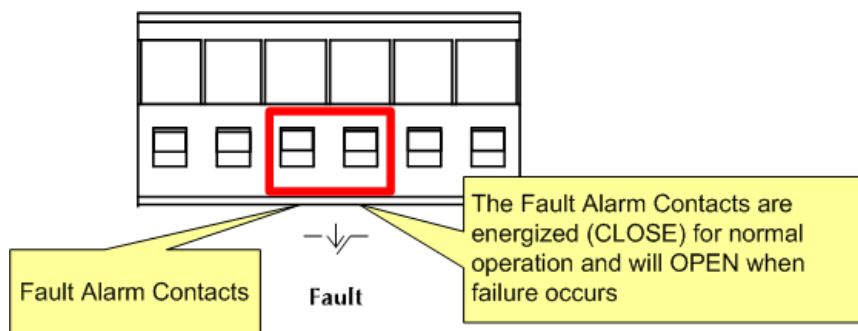


2. Tighten the wire-clamp screws to prevent the wires from loosening.



Wiring the fault alarm contact

The fault alarm contacts are in the middle of the terminal block connector as the picture shows below. Inserting the wires, the industrial media converter detects the fault status of the power failure and then forms an open circuit. The following illustration shows an application example for wiring the fault alarm contacts. Wires are inserted into the fault alarm contacts.



Note:

1. The wire gauge for the terminal block should be in the range of 12 to 24 AWG.
2. Alarm relay circuits accept up to 30 V, max. 3 A currents.

Product features

Physical port

- 1-port 10/100/1000BASE-T RJ45 with IEEE 802.3af /802.3at PoE Injector.
- 1 SFP slot, supporting 1000BASE-X transceiver dual mode.

Power over Ethernet

- Complies with IEEE 802.3at Power over Ethernet Plus, end-span PSE.
- One IEEE 802.3af/IEEE 802.3at device powered.
- Supports PoE power up to 30.8 W for each PoE port.
- Provides DC 52 V power over RJ45 Ethernet cable to PD with Ethernet port.
- Auto-detects IEEE 802.3at/af equipment and protects devices from being damaged by incorrect installation.
- Remote power feeding up to 100 m.
- IEEE 802.3at/af splitter devices compatible.

Layer 2 Features

- Supports auto-negotiation and 10/100Mbps half / full duplex and 1000Mbps full duplex mode on RJ45 port
- Prevents packet loss with back pressure (half-duplex) and IEEE 802.3x pause frame flow control (full-duplex)

Hardware

- LED Indicators
 - System: Power 1, Power 2 and Fault LED
 - Fiber port: LNK/ACT
 - 10/100/1000BASE-T port: LNK/ACT, 1000, PoE-in-use
- DIP switch: LFP (Link Fault Pass-through) mode selection

Industrial case and installation

- IP30 aluminum case
- DIN-rail and wall-mount design
- 24 to 48 VDC redundant power with polarity reverse protect function and connective removable terminal block for master and slave power.
- Supports Ethernet ESD protection for 6000 VDC

- -40 to 75°C operating temperature

Product specifications

Ethernet Interface	
Copper	10/100/1000BASE-T Ethernet TP interface Auto-negotiation, auto MDI/MDI-X with PoE injector function
Fiber-optic Connector Type	SFP (LC)
Fiber Cable	Dependent on SFP Module
Hardware Specifications	
Speed	Twisted-pair: 10/20Mbps for half/full duplex, 100/200Mbps for half/full duplex 1000/2000Mbps for full duplex Fiber Optic: 2000Mbps for full duplex
Flow Control	IEEE 802.3x pause frame for full-duplex Back pressure for half-duplex
Maximum Frame Size	9K bytes
Link Fault Pass-through DIP Switch	ON/OFF
Enclosure	IP30 metal case
Installation	DIN rail kit and wall-mount kit
Cables	10/100/1000BASE-T: 2-pair UTP Cat. 3, 4, 5, 5e, 6 (maximum 100 meters) EIA / TIA-568 100-ohm STP (maximum 100 meters) 1000BASE-SX /LX: Multi-mode: 50/245µm or 62.5/125µm optical fiber Single-mode: 9/125µm optical fiber
Alarm	One relay output for power failure. Alarm relay current carry ability: 1A @ 24 VDC
LED	System: Power 1 (Green) Power 2 (Green) Power fault Alarm (Green) PoE: PoE-in-Use (Orange) 10/100/1000BaseT: LNK/ACT (Green) 1000 (Green)

	Fiber 1000BASE-X: LNK/ACT (Green)
Unit Input Voltage	24 ~ 48 VDC
Power Consumption	35 W /120.85 BTU
ESD Protection	6K VDC
Dimensions (W x D x H)	135 x 87 x 32 mm
Weight	500 g
Power over Ethernet	
PoE Standard	IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus
PoE Power Supply Type	End-span
PoE Power Output	IEEE 802.3af Standard Per port 48~51 VDC (depending on the power supply), max. 15.4 W. IEEE 802.3at Standard Per port 51~56 VDC (depending on the power supply), max. 30 W.
Power Pin Assignment	1/2(+), 3/6(-)
PoE Power Budget	35 W
Standards Conformance	
Regulation Compliance	FCC Part 15 Class A, CE
Standards Compliance	IEEE 802.3 Ethernet IEEE 802.3u Fast Ethernet IEEE 802.3ab Gigabit Ethernet IEEE 802.3z Gigabit Ethernet over Fiber Optic IEEE 802.3x Flow Control IEEE 802.3af Power over Ethernet IEEE 802.3at Power over Ethernet Plus
Environment	
Operating	Temperature: -40 to 75°C Relative Humidity: 5 to 90% (non-condensing)
Storage	Temperature: -40 to 85°C Relative Humidity: 5 to 90% (non-condensing)

Chapter 3

Installation

This section describes how to install and make connections to the industrial media converter. Read the following topics and perform the procedures in the order presented.

Note: The images in the following installation instructions are provided for reference. The device shown is not the industrial media converter.

DIN-rail mounting

There are two methods to install the industrial industrial media converter: DIN-rail mounting and wall-mount plate mounting. Please read the following topics and perform the procedures in the order presented.

Note: Follow all the DIN-rail installation steps as shown in the example.

To install the DIN rails on the industrial media converter:

1. Screw the DIN-rail onto the industrial media converter.



2. Carefully slide the DIN-rail into the track.



3. Ensure that the DIN-rail is tightly attached to the track.

To remove the industrial media converter from the track:

Carefully remove the DIN-rail from the track.



Wall mount plate mounting

Note: Follow all the wall mount plate installation steps as shown in the example.

To install the industrial media converter on the wall:

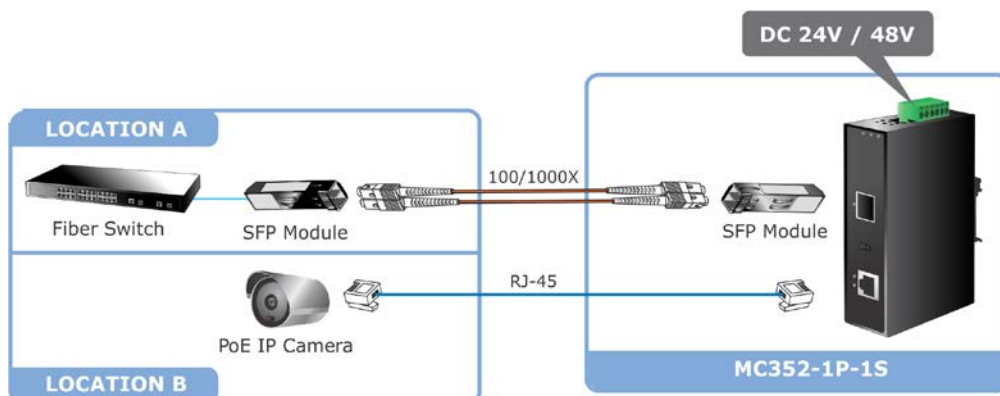
1. Remove the DIN-rail from the industrial media converter. Use a screwdriver to loosen the screws to remove the DIN-rail.
2. Place the wall-mount plate on the rear panel of the industrial media converter.
3. Use the screwdriver to screw the wall mount plate onto the industrial media converter.



4. Use the hook holes at the corners of the wall mount plate to hang the industrial media converter on the wall.
5. To remove the wall mount plate, reverse the steps above.

Installing the SFP transceiver

SFP transceivers are hot-pluggable and hot-swappable. They can be plugged in and removed to/from any SFP port without having to power down the industrial media converter (see below).



Before connecting to other network devices:

1. Make sure both sides of the SFP transceiver are with the same media type. For example, 1000BASE-SX to 1000BASE-SX, 1000BASE-LX to 1000BASE-LX.
2. Check if the fiber-optic cable type matches the SFP transceiver requirement.
 - To connect to 1000BASE-SX SFP transceiver, use the multi-mode fiber cable with one side being male duplex LC connector type.
 - To connect to 1000BASE-LX SFP transceiver, use the single-mode fiber cable with one side being male duplex LC connector type.

To connect the fiber cable:

1. Attach the duplex LC connector on the network cable to the SFP transceiver.
2. Connect the other end of the cable to a device with the SFP transceiver installed.
3. Check the LNK/ACT LED of the SFP slot on the front of the industrial media converter. Ensure that the SFP transceiver is operating correctly.
4. Check the link mode of the SFP port if the link fails.

Note: We recommend the use of Interlogix SFPs on the industrial media converter. If you insert an SFP transceiver that is not supported, the industrial media converter will not recognize it.

To remove the transceiver module:

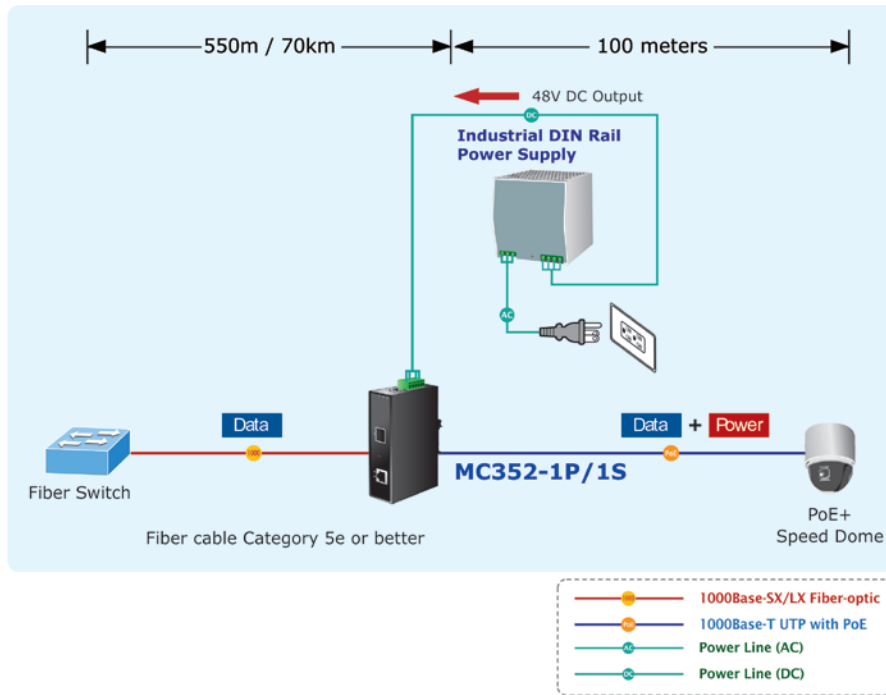
1. Make sure there is no network activity by checking with the network administrator. Or, through the management interface of the switch/converter (if available), disable the port in advance.
2. Carefully remove the fiber optic cable.
3. Turn the lever of the transceiver module to a horizontal position.
4. Pull out the module gently through the lever.

Note: Never pull out the module without making use of the lever or the push bolts on the module. Removing the module with force could damage the module and the SFP module slot of the industrial media converter.

802.3at/802.3af installation

Before installation, we recommend checking your network environment.

The industrial media converter requires 48 VDC or 24 VDC input and it injects the DC power into the pin of the twisted pair cable (Pin 1, 2, 3 and 6).



Link Fault Pass through (LFP)

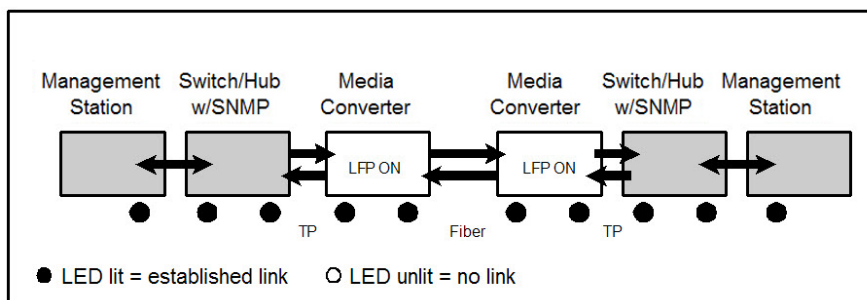
The LFP refers to the Link Fault Pass Through function (LLCF/LLR) and the DIP Switch settings. LLCF/LLR can immediately notify administrators about a problem with the link media. The DIP Switch enables or disables the LFP function.

LLCF (Link Loss Carry Forward) detects the connection loss on the TP line, and LLR (Link Loss Return) detects the connection loss on the fiber line.

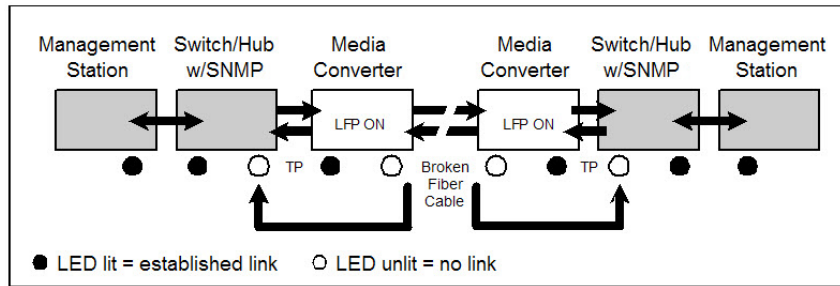
Link Loss Carry Forward (LLCF)

The industrial media converter incorporates an LLCF function for troubleshooting a remote connection. When the LFP function is enabled, the FL/TP ports do not transmit a link signal until they receive a link signal from the opposite port.

The diagram below shows a typical network configuration with a good link status using industrial media converter for remote connectivity.



In case of a connectivity issue, the industrial media converter LLCF sends the notification to the switch/hub that generates a trap to the management station.



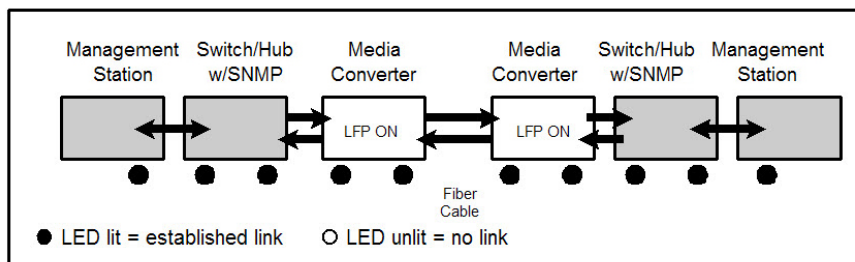
* The factory default setting for the LFP function is "off".

Link Loss Return (LLR)

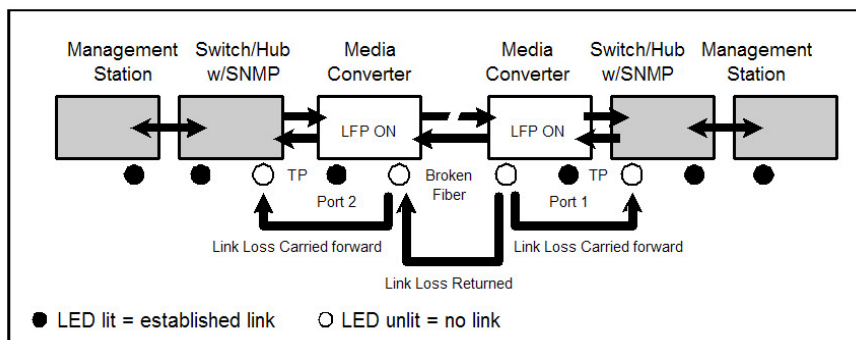
The fiber ports of the industrial media converter have been designed with an LLR function for troubleshooting a remote connection. LLR works in conjunction with LLCF.

When the LFP function is enabled, the port's transmitter shuts down when its receiver fails to detect a valid connection. LLR should only be enabled on one end of the link and is typically enabled on either the unmanaged or remote device.

The diagram below shows a typical network configuration with a good link status using industrial media converter for remote connectivity. Note that LLR and LLCF are enabled as indicated in the diagram.



If one of the optical conductors is bad (as shown in the diagram box below), the converter with LLR function will return a no-link condition to its link partner. With LLCF function also enabled, the no-link condition is carried forward to the switch/hub where a trap is generated to the management station.



Note: The factory default setting for the LFP function is "off". This feature can also be turned on via the side DIP-switch. If the installer is familiar with the network installation and diagnostics (i.e. checking which end is broken in a connection), you can turn the

switch to the on position and reset the converter for changes to take effect. Otherwise, we recommend keeping the DIP switch in its default position.

Chapter 4

Troubleshooting

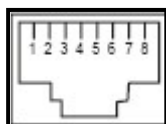
This chapter contains information to help you solve issues. If the industrial media converter is not functioning properly, ensure that it was set up according to the instructions in this manual.

Issue	Solution
The link LED does not illuminate	Check the cable connection.
The industrial media converter doesn't connect to the network	<ol style="list-style-type: none">1. Check the LNK/ACT LED on the industrial media converter.2. Try another port on the industrial media converter.3. Make sure the cable is installed properly.4. Make sure the cable is the right type.5. Turn off the power. After a while, turn on power again.
The port link LED illuminates, but the traffic is irregular	Check that the attached device is not set to dedicated full duplex. Some devices use a physical or software switch to change duplex modes. Auto-negotiation may not recognize this type of full-duplex setting.
The industrial media converter doesn't connect to the network.	Check each port LED on the industrial media converter. Try another port. Make sure the cable is installed properly and the right type. Turn off the power. After a while, turn on the power again.
The industrial media converter does not power up.	<ol style="list-style-type: none">1. Check to ensure that the AC power cord is not faulty and that it is inserted properly.2. If the cord is inserted correctly, replace the power cord.3. Check that the AC power source is working by connecting a different device in place of the switch.4. If that device does not work, check the AC power

Appendix A

Networking connection

PoE RJ45 port pin assignments



Pin Number	RJ45 Power Assignment
1	Power +
2	Power +
3	Power -
6	Power -

RJ45 port pin assignments – 1000Mbps, 1000BASE-T

Pin number	MDI	MDI-X
1	BI_DA+	BI_DB+
2	BI_DA-	BI_DB-
3	BI_DB+	BI_DA+
4	BI_DC+	BI_DD+
5	BI_DC-	BI_DD-
6	BI_DB-	BI_DA-
7	BI_DD+	BI_DC+
8	BI_DD-	BI_DC-

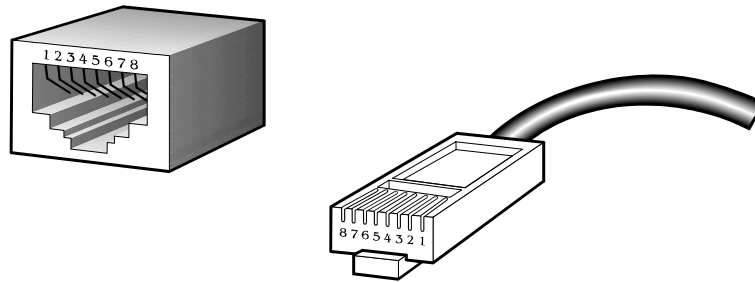
Implicit implementation of the crossover function within a twisted-pair cable, or at a wiring panel, while not expressly forbidden, is beyond the scope of this standard.

10/100Mbps, 10/100BASE-TX

When connecting the industrial media converter to another Fast Ethernet switch, a bridge, or a hub, a straight or crossover cable is necessary. Each port of the industrial media converter supports auto-MDI (Media Dependent Interface)/MDI-X (Media Dependent Interface Cross) detection. This makes it possible to directly connect the industrial media converter to any Ethernet device without making a crossover cable. The following table and diagram show the standard RJ45 receptacle/ connector and their pin assignments.

Pin number	MDI	MDI-X
1	Tx + (transmit)	Rx + (receive)
2	Tx - (transmit)	Rx - (receive)
3	Rx + (receive)	Tx + (transmit)
4, 5		Not used
6	Rx + (receive)	Tx + (transmit)
7, 8		Not used

The standard RJ45 receptacle/connector:



There are eight wires on a standard UTP/STP cable and each wire is color-coded. The following shows the pin allocation and the color of the straight cable and crossover cable connection:

Straight Cable		SIDE 1	SIDE 2
	SIDE 1	1 = White / Orange 2 = Orange 3 = White / Green 4 = Blue 5 = White / Blue 6 = Green 7 = White / Brown 8 = Brown	1 = White / Orange 2 = Orange 3 = White / Green 4 = Blue 5 = White / Blue 6 = Green 7 = White / Brown 8 = Brown
	SIDE 2		
Crossover Cable		SIDE 1	SIDE 2
	SIDE 1	1 = White / Orange 2 = Orange 3 = White / Green 4 = Blue 5 = White / Blue 6 = Green 7 = White / Brown 8 = Brown	1 = White / Green 2 = Green 3 = White / Orange 4 = Blue 5 = White / Blue 6 = Orange 7 = White / Brown 8 = Brown
	SIDE 2		

Ensure that connected cables are with the same pin assignment and color as the above diagram before deploying the cables into the network.

Fiber Optic cable connection parameters

The wiring details are shown below:

Standard	Fiber Type	Cable Specifications
1000BASE-SX (850 nm)	Multi-mode	50/125 μm or 62.5/125 μm
1000BASE-LX (1300 nm)	Multi-mode	50/125 μm or 62.5/125 μm
	Single-mode	9/125 μm

Wiring distances

Standard	Fiber	Diameter (micron)	Modal Bandwidth (MHz* km)	Max. Distance (meters)
1000BASE-SX	MM	62.5	100	220
		62.5	200	275
		50	400	500
		50	500	550
1000BASE-LX	MM	62.5	5	550
		50	4	
		50	5	
	SM	9	N/A	5000*

Note: The single mode port (1000Base-LX port) of the industrial media converter is compliant with LX 5 kilometers and provides additional margin allowing for a 10/30/70 kilometer Gigabit Ethernet links on single mode fiber.

Appendix B

Approved Interlogix SFP transceivers

The following list of approved Interlogix SFP transceivers is valid as of the time of publication:

Part #	Fiber Connector	# of Fibers	Fiber Type	Max Distance	Wave Length	Optical Budget (dBm)	Optical Power (dBm)	Receiver Sensitivity (dBm)	Operating Temperature
Twisted Pair SFP 1000Base TX									
S30-RJ	RJ 45	1	Cat5e	100M (328 ft.)					0 to +50°C (32 to 122°F)
Gigabit Ethernet 1000Base SX									
S30-2MLC	LC	2	Multi-mode	220/550 m (720 / 1800 ft.)	850 nm	7.5	-9.5 ~ -1	-17	0 to +50°C (32 to 122°F)
S35-2MLC	LC	2	Multi-mode	220/550 m (720 / 1800 ft.)	850 nm	7.5	-14 ~ -8	-17	-40 to +75°C (-40 to 167°F)
OM1 Multimode fiber @ 200/500 MHz-km									
OM2 Multimode fiber @ 500.500 MHz-km Laser Rated for GbE LANs									
S30-2MLC-2	LC	2	Multi-mode	2 km (1.2 mi.)	1310 nm	10	-9 ~ -1	-19	0 to +50°C (32 to 122°F)
OM3 Multimode fiber @ 2000/500MHz-km Optimized for 850 nm VCSELs									
Gigabit Ethernet 1000 Base LX									
S30-2SLC-10	LC	2	Single Mode	10 km (6.2 mi.)	1310 nm	18	-9.5 ~ -3	-20	0 to +50°C (32 to 122°F)
S35-2SLC-10	LC	2	Single Mode	10 km (6.2 mi.)	1310 nm	18	-9.5 ~ -3	-20	-40 to +75°C (-40 to 167°F)
S30-2SLC-30	LC	2	Single Mode	30 km (18.6 mi.)	1310 nm	18	-2 ~ +3	-23	0 to +50°C (32 to 122°F)
S35-2SLC-30	LC	2	Single Mode	30 km (18.6 mi.)	1310 nm	18	-2 ~ +3	-23	-40 to +75°C (-40 to 167°F)
Gigabit Ethernet 1000 Base ZX									

Part #	Fiber Connector	# of Fibers	Fiber Type	Max Distance	Wave Length	Optical Budget (dBm)	Optical Power (dBm)	Receiver Sensitivity (dBm)	Operating Temperature
S30-2SLC-70	LC	2	Single Mode	70 km (43 mi.)	1550 nm	19*	-15 ~ -8	-34	0 to +50°C (32 to 122°F)
S35-2SLC-70	LC	2	Single Mode	70 km (43 mi.)	1550 nm	19*	-15 ~ -8	-34	-40 to +75°C (-40 to 167°F)
Gigabit Ethernet 1000 Base BX									
S30-1SLC/A-10	LC	1	Single Mode	10 km (6.2 mi.)	1310 / 1490 nm	11	-9 ~ -3	-20	0 to +50°C (32 to 122°F)
S30-1SLC/B-10	LC	1	Single Mode	10 km (6.2 mi.)	1490 / 1310 nm	11	-9 ~ -3	-20	0 to +50°C (32 to 122°F)
S30-1SLC/A-20	LC	1	Single Mode	20 km (12 mi.)	1310 / 1490 nm	15	-8 ~ -2	-23	0 to +50°C (32 to 122°F)
S30-1SLC/B-20	LC	1	Single Mode	20 km (12 mi.)	1490 / 1310 nm	15	-8 ~ -2	-23	0 to +50°C (32 to 122°F)
Gigabit Ethernet 1000 Base BX									
S30-1SLC/A-60	LC	1	Single Mode	60 km (37 mi.)	1310 / 1490 nm	24	0 ~ +5	-24	0 to +50°C (32 to 122°F)
S30-1SLC/B-60	LC	1	Single Mode	60 km (37 mi.)	1490 / 1310 nm	24	0 ~ +5	-24	0 to +50°C (32 to 122°F)

* Note: High Power Optic. There must be a minimum of 5 dB of optical loss to the fiber for proper operation.

Note: We recommend the use of Interlogix SFPs on the industrial media converter. If you insert an SFP transceiver that is not supported, the industrial media converter will not recognize it.

Note: Choose a SFP transceiver that can be operated under -40 to 75°C temperature if the industrial media converter is working in a 0 to 50°C temperature environment.