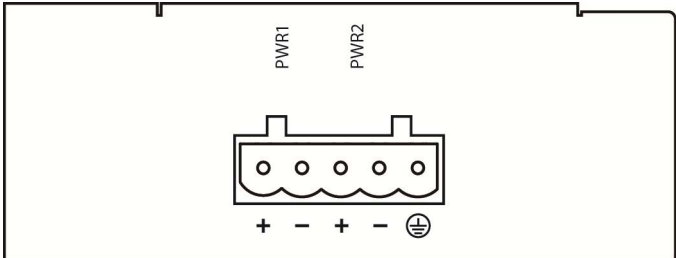



## Quick Start Guide

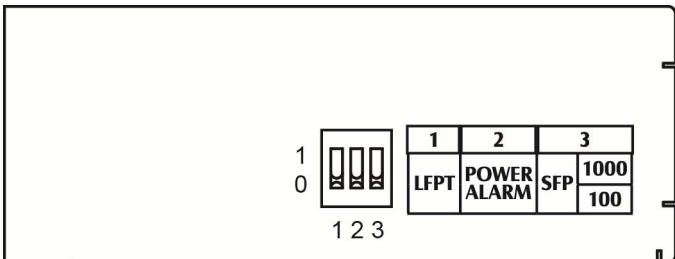
This quick start guide describes how to install and use the hardened media converter. This is the media converter of choice for harsh environments constrained by space.

### Physical Description

#### The Terminal Block and Power inputs



Power Input Assignment			
Power2	+	52-57VDC	Terminal Block
	-	Power Ground	
Power1	+	52-57VDC	
	-	Power Ground	
		Earth Ground	



No.	ON (1)	OFF (0)
1	Enable LFPT	Disable LFPT
2	Enable power redundancy alarm	Disable power redundancy alarm
3	Enable 1000Base SFP	Enable 100Base SFP

<Note>

Must re-plug the fiber port after re-setting DIP switches to launch the new settings.

LFPT: Link Fault Pass Through.

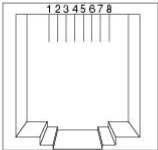
- **DC Terminal Block Power Inputs:** There are two pairs of power inputs can be used to power up this device. When the power redundancy alarm is enabled, it will need to have two power inputs connected to run the media converter. The FAULT LED indicator will light up to remind that the power redundant system functions abnormal in case either Power 1 or Power 2 is dead. Media Converter, however, continues working normally even fault LED indicator lights up.

### **The 10/100/1000Base-TX (PoE) and SFP Connectors**

The 10/100/1000Base-TX (PoE) Connections

The following lists the pinouts of 10/100/1000Base-TX (PoE) port.

Pin	Label
1	TP0+
2	TP0-
3	TP1+
4	TP2+
5	TP2-
6	TP1-
7	TP3+
8	TP3-



Pin	Signal Name	Signal Definition
1	TP0 +	Transmit and Receive Data 0 +
2	TP0 -	Transmit and Receive Data 0 -
3	TP1 +	Transmit and Receive Data 1 +
4	TP2 +	Transmit and Receive Data 2 +
5	TP2 -	Transmit and Receive Data 2 -
6	TP1 -	Transmit and Receive Data 1 -
7	TP3 +	Transmit and Receive Data 3 +
8	TP3 -	Transmit and Receive Data 3 -

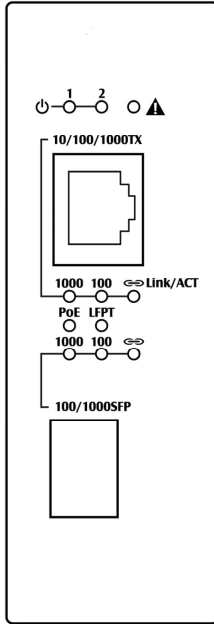
The SFP Connection





The SFP socket for 100Base and 1000Base fiber optic expansion.



For SFP expansion

**The Port Status LEDs**



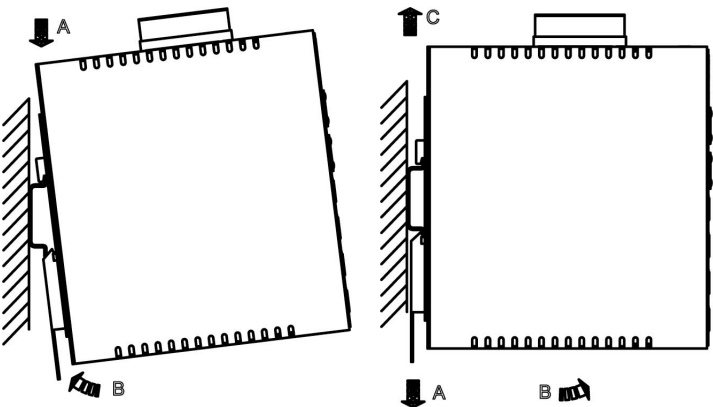
LEDs	State	Indication
 Power 1, 2	Steady	Power on
	Off	Power off
 Fault	Steady	While power redundancy failed
	Off	Power redundancy function normal
LFPT (Link Fault Pass Through)	Steady	Link fault pass through function is enabled
	Off	Link fault pass through function is disabled
PoE	Steady	Powered Device (PD) is connected
	Off	Powered Device (PD) is disconnected
 Link/ACT (10/100/1000TX)	Steady	A valid network connection is established on TX port
	Flashing	Transmitting or receiving data ACT stands for Activity
	Off	No network connection is established
Speed (10/100/1000TX)	Amber	Connection at the speed of 1000Mbps
	Green	Connection at the speed of 100Mbps
	Off	Connection at the speed of 10Mbps
 Link/ACT (SFP)	Steady	A valid network connection is established on Fiber port
	Flashing	Transmitting or receiving data ACT stands for Activity
	Off	No network connection is established
Speed (100/1000SFP)	Amber	The SFP slot works at 1000Base SFP
	Green	The SFP slot works at 100Base SFP

## Functional Description

- Meets EN61000-6-2 & EN61000-6-4 EMC Generic Standard Immunity for industrial environment.
- Supports 802.3/802.3u/802.3ab/802.3z/802.3x.
- 10/100/1000-Auto/Full-duplex, Auto-Negotiation, Auto-MDI/MDIX.
- IEEE802.3x full-duplex flow control and half-duplex back pressure.
- Supports IEEE802.3at Power over Ethernet (PoE) Power Sourcing Equipment (PSE).
- Redundant power: two 52~57VDC Terminal Block power inputs.
- Power consumption: 32.5W (30W for PoE) Max.
- -40°C to 75°C (-40°F to 167°F) operating temperature range.
- DIP switch configuration for link-fault-pass-through, power redundancy alarm, and 1000Base/100Base SFP.
- Supports DIN-Rail or Panel Mounting installation.

## Assembly, Startup, and Dismantling

- Assembly: Place the media converter on the DIN-Rail from above using the slot. Push the front of the media converter toward the mounting surface until it audibly snaps into place.
- Startup: Connect the supply voltage to start up the media converter via the terminal block.
- Dismantling: Pull out the lower edge and then remove the media converter from the DIN-Rail.



## Preface

This hardened media converter provides an affordable solution for rugged environments, transportation road-side cabinets, industrial shop floors, multi tenant dwellings or Fiber To The Home (FTTH) applications. Capable of operating at temperature extremes of -40°C to +75°C, this is by far the media converter of choice for harsh environments in which space constraints exist.

This media converter supports IEEE802.3at Power over Ethernet (PoE) Power Sourcing Equipment (PSE) and can detect an IEEE802.3at compliant Powered Device (PD). Using external 52~57VDC power inputs through Terminal Block, data and power can be transmitted to a Powered Device (PD) over the same twisted-pair Ethernet cable through the media converter.

### Plug-and-Play Solution:

The hardened media converter is a plug-and-play compact media converter which doesn't have any complicated software to set up.

This manual describes the installation and use of the hardened media converter with the link-fault-pass-through function. The converter also provides one channel media conversion between 10/100/1000Base-TX (PoE) and 1000Base/100Base SFP socket port.

The converter is in full compliance with IEEE802.3 10Base-T, IEEE802.3u 100Base-TX, IEEE802.3ab 1000Base-T and IEEE802.3z 1000Base-SX/LX standards.

In this manual, you will find:

- Product overview
- Features of the media converter
- Illustrative LED functions
- Installation instructions
- Specifications

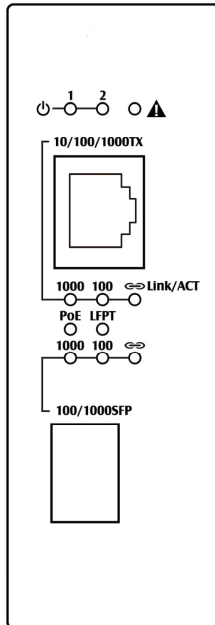
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## Introduction

The media converter provides one channel for media conversion between 10/100/1000Base-TX (PoE) and 1000Base/100Base SFP socket port with the link-fault-pass-through function. This hardened fiber optic solution is perfectly suitable for industrial applications or rugged environmental conditions.

## Product Overview



## Product Features

- Meets EN61000-6-2 & EN61000-6-4 EMC Generic Standard Immunity for industrial environment.
- Supports 802.3/802.3u/802.3ab/802.3z/802.3x.
- 10/100/1000-Auto/Full-duplex, Auto-Negotiation, Auto-MDI/MDIX.
- IEEE802.3x full-duplex flow control and half-duplex back pressure.



- Supports IEEE802.3at Power over Ethernet (PoE) Power Sourcing Equipment (PSE).
- Redundant power: two 52~57VDC Terminal Block power inputs.
- Power consumption: 32.5W (30W for PoE) Max.
- -40°C to 75°C (-40°F to 167°F) operating temperature range.
- DIP switch configuration for link-fault-pass-through, power redundancy alarm, and 1000Base/100Base SFP.
- Supports DIN-Rail or Panel Mounting installation.

## **Packing List**

When you open this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

- The Media Converter
- User's Manual

# One-Channel Media Converter

## Ports

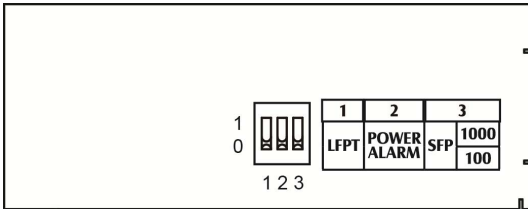
The Converter provides one 10/100/1000Base-TX (PoE) copper port and one 1000Base/100Base SFP socket port. The 1000Base/100Base SFP socket port is available for options of Multi-mode, Single-mode, or WDM Single-mode SFP fiber transceiver using LC connector.

The copper port uses RJ-45 connector, auto-MDIX, and auto negotiates.

## Port Settings

Port settings are made very simple by means of a DIP (Dual Inline Package) switch on the bottom panel of the hardened media converter.

Default DIP switch settings:



## DIP Switch

There are three pins on the DIP switch for settings. Refer to the table below for more details.

No.	ON (1)	OFF (0)
1	Enable LFPT	Disable LFPT
2	Enable power redundancy alarm	Disable power redundancy alarm
3	Enable 1000Base SFP	Enable 100Base SFP





<Note>

Must re-plug the fiber port after re-setting DIP switches to launch the new settings.  
LFPT: Link Fault Pass Through.

## Front Panel & LEDs

### LED Indicators

The LED indicators give you instant feedback on converter status:

LEDs	State	Indication
 Power 1, 2	Steady	Power on
	Off	Power off
 Fault	Steady	While power redundancy failed
	Off	Power redundancy function normal
LFPT (Link Fault Pass Through)	Steady	Link fault pass through function is enabled
	Off	Link fault pass through function is disabled
PoE	Steady	Powered Device (PD) is connected
	Off	Powered Device (PD) is disconnected
 Link/ACT (10/100/1000TX)	Steady	A valid network connection is established on TX port
	Flashing	Transmitting or receiving data ACT stands for Activity
	Off	No network connection is established
Speed (10/100/1000TX)	Amber	Connection at the speed of 1000Mbps
	Green	Connection at the speed of 100Mbps
	Off	Connection at the speed of 10Mbps
 Link/ACT (SFP)	Steady	A valid network connection is established on Fiber port
	Flashing	Transmitting or receiving data ACT stands for Activity
	Off	No network connection is established
Speed (100/1000SFP)	Amber	The SFP slot works at 1000Base SFP
	Green	The SFP slot works at 100Base SFP

# Installation

This chapter gives step-by-step installation instructions for the Converter.

## Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

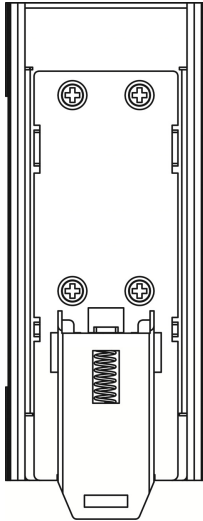
- The ambient temperature should be between -40 to 75 degrees Celsius.
- The relative humidity should be less than 95 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RF) standards.
- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes of the equipment.
- The power outlet should be within 1.8 meters of the product.

## DIN Rail Mounting

Fix the DIN rail attachment plate to the back panel of the media converter.

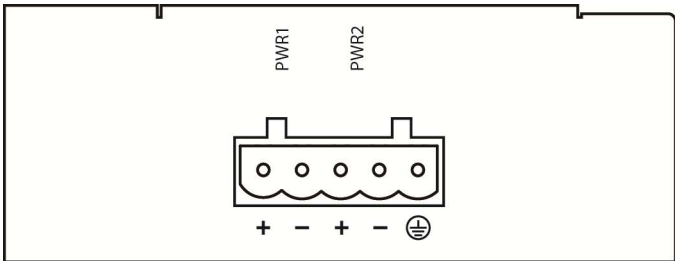
**Installation:** Place the media converter on the DIN rail from above using the slot. Push the front of the media converter toward the mounting surface until it audibly snaps into place.

**Removal:** Pull out the lower edge and then remove the media converter from the DIN rail.



## Connecting to Power

Redundant DC Terminal Block Power Inputs:



### Redundant DC Terminal Block Power Inputs

There are two pairs of power inputs can be used to power up this device.

**Step 1:** Connect the DC power cord to the plug-able terminal block on the media converter, and then plug it into a standard DC outlet.

**Step 2:** Disconnect the power cord if you want to shut down the media converter.

## Specifications

Applicable Standards	IEEE 802.3 10Base-T IEEE 802.3u 100Base-TX IEEE 802.3ab 1000Base-T IEEE 802.3z 1000Base-SX/LX
Fixed Ports	1 copper port, 1 1000Base/100Base SFP socket port
Speed 10Base-T 100Base-TX 1000Base-T 1000Base-SX/LX/BX	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex 2000Mbps for full-duplex 2000Mbps for full-duplex
Forwarding rate	14,880pps for 10Mbps 148,810pps for 100Mbps 1,488,100pps for 1000Mbps
Cable 1000Base-T 1000Base-SX/LX/BX	4-pair UTP/STP Cat. 5 up to 100m MMF (50 or 62.5 $\mu$ m), SMF (9 or 10 $\mu$ m)
LED Indicators	Per Unit: Fault, Power1, Power2, PoE, LFPT Per Port: SFP socket: Link/ACT, 1000,100 Copper: Link/ACT, 1000, 100
Dimensions	41.8mm (W) $\times$ 90mm (D) $\times$ 100mm (H) (1.65" (W) $\times$ 3.54" (D) $\times$ 3.94" (H))
Weight	0.38Kg (0.84lb.)
Power	Terminal Block: 52-57VDC
Power Consumption	32.5W (30W for PoE) Max.
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Humidity	5 ~ 95%, non-condensing
Safety	UL60950-1, IEC60950-1, EN60950-1
EMI	FCC Part 15, Class A VCCI, Class A EN61000-6-4: EN55022, EN61000-3-2, EN61000-3-3
EMS	EN61000-6-2: EN61000-4-2 (ESD Standard) EN61000-4-3 (Radiated RFI Standards) EN61000-4-4 (Burst Standards) EN61000-4-5 (Surge Standards) EN61000-4-6 (Induced RFI Standards) EN61000-4-8 (Magnetic Field Standards)
Environmental Test Compliance	IEC60068-2-6 Fc (Vibration Resistance) IEC60068-2-27 Ea (Shock) FED STD 101C Method 5007.1 (Free Fall)