



EL8100/EL8020 Hardened Media Converter

User's Guide

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Products Supported by this Manual:

EL8020/EL8100

Audience

This guide is designed for the person who installs, configures, deploys, and maintains the Ethernet network. This document assumes the reader has moderate hardware, computer, and Internet skills.





Document Revision Level

This section provides a history of the revision changes to this document.

Revision	Document Version	Date	Description
A	Version 1	1/3/2018	
A	2	03/14/2018	
A	3	04/11/2019	
A	4	06/14/2019	Midified DIP switch tables and images

Safety and Warnings

This guide uses the following symbols to draw your attention to certain information.

Symbol	Meaning	Description
	Note	Notes emphasize or supplement important points of the main text.
	Tip	Tips provide helpful information, guidelines, or suggestions for performing tasks more effectively.
	Warning	Warnings indicate that failure to take a specified action could result in damage to the device, or could result in serious bodily injury.
	Electric Shock Hazard	This symbol warns users of electric shock hazard. Failure to take appropriate precautions such as not opening or touching hazardous areas of the equipment could result in injury or death.

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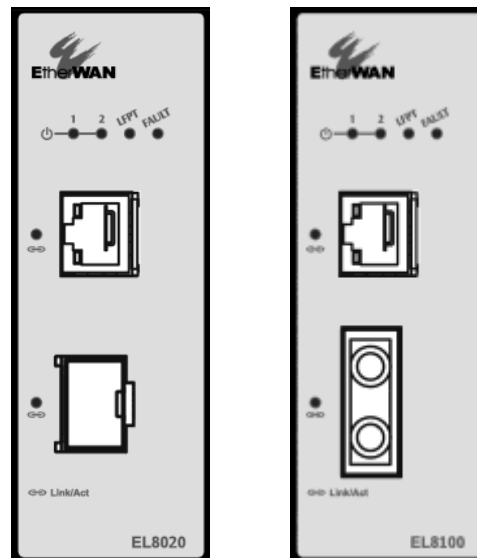
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EL8020/EL8100 Hardened Media Converter

1000Base-TX to 1000Base-SX / LX / BX

1000Base-TX to 1000 SFP

The EL8020/EL8100 Series provides media conversion between 1000BASE-TX and 1000BASE - SX/LX/BX/SFP Fiber. Built specifically for mission critical applications in harsh environments, the hardened design features high shock & vibration resistance, electrical noise immunity, wide operating temperature range from -40 to 75°C, and aluminum housing. With two power inputs, link down alarming, Link-Fault-Pass-Through and a wide range of fiber connectivity options, the EL8020/EL8100 is the ideal media converter for environments where connectivity is crucial.



Unpacking

Open the carton and unpack the items. Your package should include an EL8020 or EL8100 media converter, and a Quick Install Guide. If items are missing or damaged, notify your EtherWAN representative.

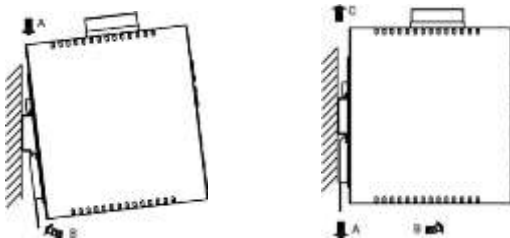
Select Installation Location

Installation is DIN rail-mount, or wall mount (in an enclosure or industrial panel). Ensure that the power source is within 6 feet (1.8 meters), and check that there is adequate airflow.

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.



Connect Power

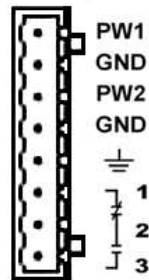
The media converter is equipped with an eight-contact terminal block. The terminal block provides dual DC power inputs, and a relay output contact. Redundant power supply is supported, but only one power input is required for operation. Note that the media converter does not have a power switch; it is turned on/off by connecting/disconnecting power.


Input voltage is **12 to 48VDC**.

The power dissipation under full load is as follows:

12VDC/0.4A

48VDC/0.11A



 **Note:** Use qualified power supply by SELV or double insulation of UL 60950 or UL 61010-1 or UL 61010-2-201 standards.

Insert the DC input wires into the corresponding terminals, and tighten the clamp screws to hold them in place. Make sure that the plastic terminal block connector prongs are plugged firmly into the terminal block receptacles.

Power wiring information:

Use cable type - AWG (American Wire Gauge) 18-24 and the corresponding pin type cable terminals. Use torque value 1.7 lb-in, do not use excessive force when fixing wiring.

Label clean up:

Indoor use and pollution degree II, it must be wiped with a dry cloth for clean up the labelling.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Environment:

The media converter shall be mounted in an industrial control panel and ambient temperature is not exceed 75 degree Celsius.

Altitude up to 2000 meters.

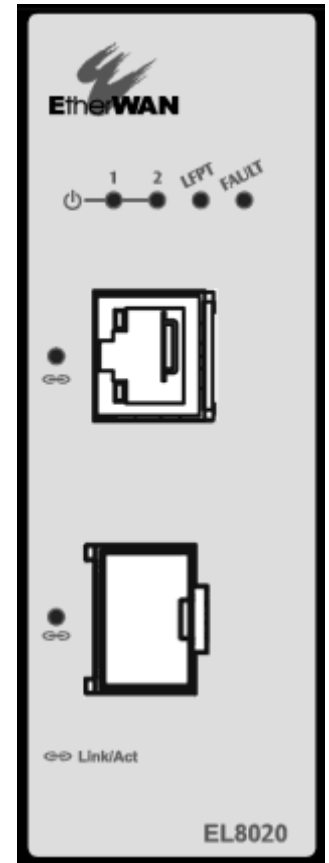
Humidity range (Operational): 5% to 95%, non-condensation.

The product is open type.

Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes of the equipment.

LED Indicators

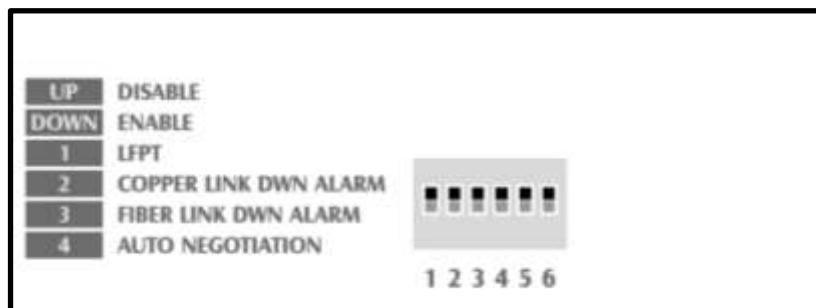
LED	State	Indication
Fault	Steady	Power redundancy or port malfunction
	Off	Power redundancy/ports functioning normally
PW1	Steady	Power1 on
	Off	Power1 off
PW2	Steady	Power2 on
	Off	Power2 off
LNK/ACT	Steady	Connection established
	Flashing	Transmitting or receiving data
	Off	No connection established
LFPT	Steady	LFPT function enabled
	Off	LFPT function disabled



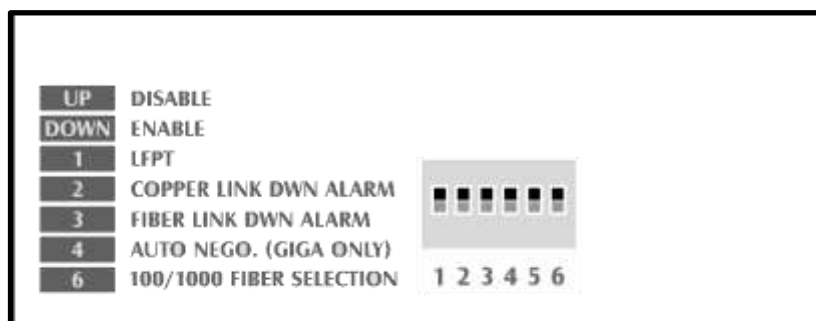
DIP Switches

Port, power and LFPT settings are made very simple by means of DIP (Dual Inline Package) switches on the bottom panel of the hardened media converter.

EL8100 DIP Switches



EL8020 DIP Switches



No.	DOWN (Default)	UP
1	Enable LFPT*	Disable LFPT*
2	Enable link down alarm for copper port	Disable link down alarm for copper port
3	Enable link down alarm for fiber port	Disable link down alarm for fiber port
4	Enable Auto-negotiation	Enable Force mode
5	Reserved	
6	1000 fiber (EL8020 only)	100 fiber (EL8020 only)

* LFPT=Link Fault Pass Through



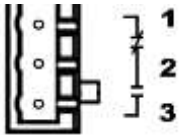
If Force mode is enabled, the media converter must be restarted in order for the new setting to take effect.

Link Fault Pass Through (LFPT)

LFPT (Link Fault Pass Through) is a feature that will pass a link fault through the device at each segment. If either of the copper TX links fails, the media converter will pass the fail state on throughout the link, taking down the middle fiber as well as the copper link on the opposite end. This prevents the connected switches from sending packets that would end up lost. LFPT is designed for use with media converters arranged in pairs, and both devices must support LFPT.

Relay Output Alarm

The media converter is equipped with relay output contacts on the terminal block for signaling of a power or port failure. The relay output can be connected to an alarm signaling device. Current is 0.6A @ 30VDC.



Relay contact	PW1	PW2	Point 1 - 2	Point 2 - 3
Alarm	Off	Off	Closed	Open
Alarm	Off	On	Closed	Open
Alarm	On	Off	Closed	Open
Non-Alarm	On	On	Open	Closed



Specifications

Applicable standards	IEEE802.3ab 1000BASE-T IEEE802.3z 1000BASE-SX/1000BASE-LX IEEE802.3x full duplex
Forwarding and filtering rate	1,488,100pps for 1000Mbps
Dimensions	35.8 x 90 x 100mm (W x D x H) (1.41" x 3.54" x 3.94")
Weight	0.23Kg (0.51lbs.)
Input voltage	12 to 48VDC
Power Consumption	9.12W Max, 0.76A@12VDC, 0.38A@24VDC, 0.19A@48VDC
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	UL 61010
EMI	FCC Part 15B Class A VCCI Class A EN 55032 EN 61000-3-2 EN 61000-3-3 EN 61000-6-3
EMS	EN 61000-6-2 EN 61000-4-2 (ESD Standard) EN 61000-4-3 (Radiated RFI Standards) EN 61000-4-4 (Burst Standards) EN 61000-4-5 (Surge Standards) EN 61000-4-6 (Induced RFI Standards) EN 61000-4-8 (Magnetic Field Standards)
Environmental Test Compliance	IEC 60068-2-6 Fc (Vibration Resistance) IEC 60068-2-27 Ea (Shock) FED STD 101C Method 5007.1 (Free Fall)

Manufacturer's Information

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