PTC-101 Series

IEC 61850-3 Ethernet-to-fiber media converters



Features and Benefits

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFPT)
- Power failure alarm by relay output (LV model only)
- -40 to 85°C operating temperature range
- Redundant dual DC power inputs (LV model only)
- Integrated high-reliability power supply eliminates the need for external power transformer

Certifications

Introduction

The PTC-101 Ethernet-to-fiber media converters convert from 10/100BaseT(X) to 100BaseFX. Models are available with either SC, ST, or LC connectors. The PTC-101 converters eliminate the need for additional wiring, and support IEEE 802.3 and IEEE 802.3u/x protocols with 10/100M, full/half-duplex, and MDI/MDI-X auto-sensing to provide a total solution for your industrial Ethernet networks. The PTC-101 is compliant with mandatory sections of IEC 61850-3, covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making the media converters suitable for a variety of industrial applications.

Specifications

Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	1
100BaseFX Ports (multi-mode SC connector)	PTC-101-M-SC-HV/M-SC-LV: 1
100BaseFX Ports (multi-mode ST connector)	PTC-101-M-ST-HV/M-ST-LV: 1
100BaseFX Ports (single-mode SC connector)	PTC-101-S-SC-HV/S-SC-LV: 1
100BaseFX Ports (single-mode ST connector)	PTC-101-S-ST-HV/S-ST-LV: 1
100BaseFX Ports (multi-mode LC connector)	PTC-101-M-LC-HV/M-LC-LV: 1
100BaseFX Ports (single-mode LC connector)	PTC-101-S-LC-HV/S-LC-LV: 1

Magnetic Isolation Protection	1.5 kV (built-in)
Optical Fiber	

	100BaseFX	
	Multi-Mode	Single-Mode
Wavelength	1300 nm	1310 nm
Max. TX	-10 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm
Link Budget	12 dB	29 dB
Typical Distance	5 km[a] 4 km[b]	40 km[c]
Saturation	-6 dBm	-3 dBm

a. 50/125 µm, 800 MHz x km fiber optic cable
b. 62.5/125 µm, 500 MHz x km fiber optic cable
c. 9/125 µm single-mode fiber optic cable

Power Parameters

Input Voltage	LV-DC models: 20 to 72 VDC HV-AC models: 100 to 240 VAC HV-DC models: 88 to 300 VDC
Input Current	LV-DC models: 150 mA @ 20 to 72 VDC HV-AC models: 200 to 350 mA @ 100 to 240 VAC HV-DC models: 47 mA @ 88 VDC
Overload Current Protection	Supported
Power Consumption	LV-DC models: 150 mA @ 20 to 72 VDC HV-AC models: 200 to 350 mA @ 100 to 240 VAC HV-DC models: 47 mA @ 88 VDC

Physical Characteristics

Housing	Metal
Dimensions	152.15 x 126.46 x 66.65 mm (5.99 x 4.86 x 2.62 in)
Weight	Packaged: 875 g (1.92 lb) Product only: 690 g (1.52 lb)
Installation	DIN-rail mounting

Environmental Limits

Operating Temperature	-40 to 85°C (-40 to 185°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)

Standards and Certifications

EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 8 kV; Air: 15 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 4 kV IEC 61000-4-5 Surge: Power: 4 kV; Signal: 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 10 V/m; Signal: 10 V/m

	IEC 61000-4-8 PFMF IEC 61000-4-11 DIPs
Environmental Testing	IEC 60068-2-1 IEC 60068-2-14 IEC 60068-2-2 IEC 60068-2-3
Safety	EN 60950-1, UL 60950-1
Vibration	IEC 60068-2-6
Power Substation	IEC 61850-3

MTBF

Time	1,211,613 hrs
Standards	MIL-HDBK-217F

Warranty

Warranty Period	5 years
Details	See www.moxa.com/warranty

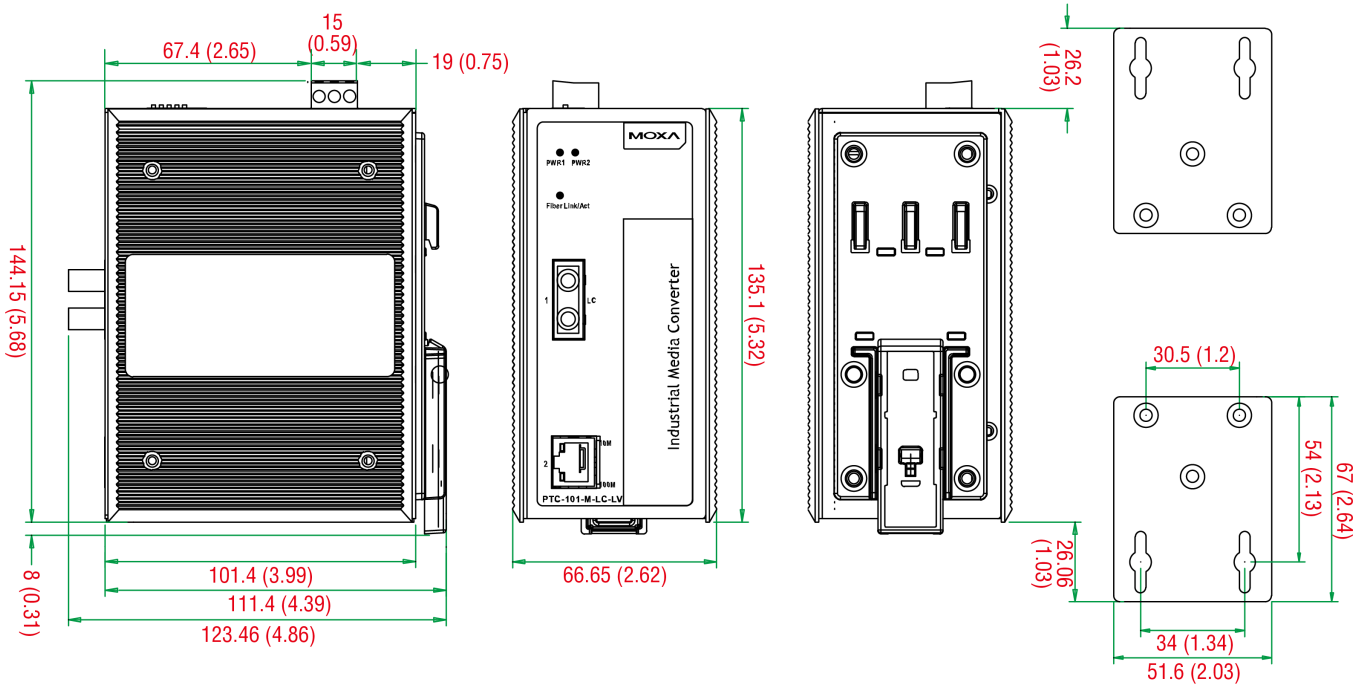
Package Contents

Device	1 x PTC-101 Series media converter
Documentation	1 x quick installation guide 1 x warranty card

Dimensions

PTC-101-M-ST-HV (other models available by request)

Unit: mm (inch)



Side View | Front View | Rear View | Panel-Mounting Kit (Optional)

Ordering Information

Model Name	Fiber Module Type	Input Voltage
PTC-101-M-SC-LV	Multi-mode SC	20-72 VDC
PTC-101-M-ST-LV	Multi-mode ST	20-72 VDC
PTC-101-M-LC-LV	Multi-mode LC	20-72 VDC
PTC-101-S-SC-LV	Single-mode SC	20-72 VDC
PTC-101-S-ST-LV	Single-mode ST	20-72 VDC
PTC-101-S-LC-LV	Single-mode LC	20-72 VDC
PTC-101-M-SC-HV	Multi-mode SC	85-264 VAC 88-300 VDC
PTC-101-M-ST-HV	Multi-mode ST	85-264 VAC 88-300 VDC
PTC-101-M-LC-HV	Multi-mode LC	85-264 VAC 88-300 VDC
PTC-101-S-SC-HV	Single-mode SC	85-264 VAC 88-300 VDC
PTC-101-S-ST-HV	Single-mode ST	85-264 VAC 88-300 VDC
PTC-101-S-LC-HV	Single-mode LC	85-264 VAC 88-300 VDC

Accessories (sold separately)

DIN-Rail Mounting Kits

DK-DC50131-01	DIN-rail mounting kit, 6 screws

Wall-Mounting Kits

WK-51	Wall-mounting kit
WK-51-01	Wall mounting kit with 2 plates (51.6 x 67 x 2 mm) and 6 screws

Wireless AP Mounting Kits

DK-DC50131	DIN-rail mounting kit

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