

# PTC-101-M12 Series

IEC 61850-3 and railway 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
- Compliant with EN 50121-4
- Complies with all EN 50155 mandatory test items<sup>1</sup>

### Certifications



EN 50155



EN 50121-4



### 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 EN 50155, covering operating temperature, power input voltage, surge, ESD, and vibration, as well as conformal coating and power insulation, making the switches suitable for a variety of industrial applications.

### Specifications

#### Ethernet Interface

10/100BaseT(X) Ports (M12 D-coded 4-pin female connector)	1
100BaseFX Ports (single-mode SC connector)	PTC-101-M12-S-SC Series: 1
100BaseFX Ports (single-mode ST connector)	PTC-101-M12-S-ST Series: 1

1. This product is suitable for rolling stock railway applications, as defined by the EN 50155 standard. For a more detailed statement, click here: [www.moxa.com/doc/specs/EN\\_50155\\_Compliance.pdf](http://www.moxa.com/doc/specs/EN_50155_Compliance.pdf)

Magnetic Isolation Protection	1.5 kV (built-in)	
Optical Fiber		100BaseFX
		Single-Mode
	Wavelength	1310 nm
	Max. TX	0 dBm
	Min. TX	-5 dBm
	RX Sensitivity	-34 dBm
	Link Budget	29 dB
	Typical Distance	40 km
	Saturation	-3 dBm
	a. 50/125 $\mu$ m, 800 MHz x km fiber optic cable.	

#### Power Parameters

Input Current	170 mA @ 20 VDC
Input Voltage	20 to 72 VDC
Overload Current Protection	Supported
Power Consumption	170 mA @ 20 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
Protection	-CT models: PCB conformal coating

#### 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)

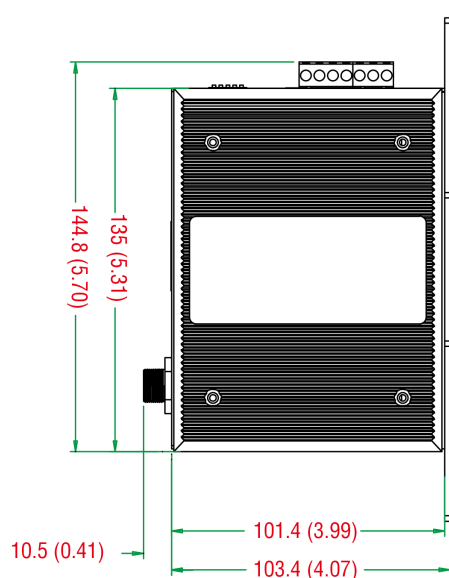
#### Standards and Certifications

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: 2 kV; Signal: 4 kV IEC 61000-4-6 CS: 150 kHz to 80 MHz: 3 V/m; Signal: 3 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

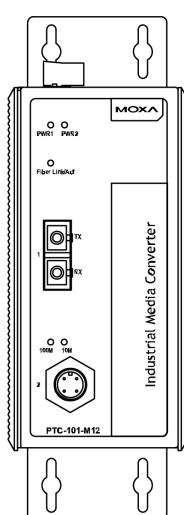
Safety	EN 60950-1, UL 60950-1
Vibration	IEC 60068-2-6
<b>MTBF</b>	
Time	1,211,613 hrs
Standards	MIL-HDBK-217F
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Package Contents</b>	
Device	1 x PTC-101-M12 Series media converter
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

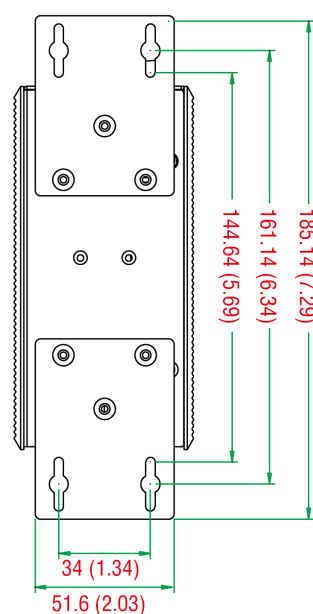
Unit: mm (inch)



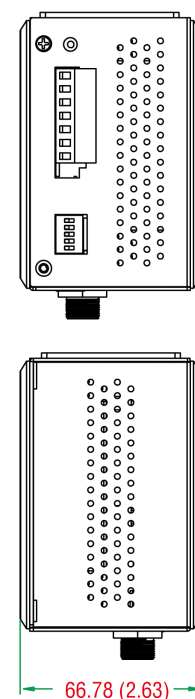
Side View



Front View



Panel-Mounting Kit (Optional)



Top and Bottom View

## Ordering Information

Model Name	Fiber Module Type	Conformal Coating
PTC-101-M12-S-SC-LV-T	Single-mode SC	-
PTC-101-M12-S-ST-LV-T	Single-mode ST	-
PTC-101-M12-S-SC-LV-CT-T	Single-mode SC	✓
PTC-101-M12-S-ST-LV-CT-T	Single-mode ST	✓

Accessories (sold separately)

DIN-Rail Mounting Kits

20P To 20P Flat Cable-500mm	20-to-20-pin flat cable for connecting the TB 1600 and ioLogik 4000 Series, 50 cm
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Wall-Mounting Kits

WK-51-01	Wall-mounting kit, 2 plates, 6 screws, 51.6 x 67 x 2 mm
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