

# PTC-101 Series

## IEC 61850-3 and EN 50155 Ethernet-to-fiber media converters



- > 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- > Link Fault Pass-Through (LFP)
- > 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 and essential sections of EN 50155



### 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 the essential sections of EN 50155, covering operating temperature, power input voltage, surge, ESD and vibration.

### Specifications

#### Technology

##### Standards:

IEEE 802.3 for 10BaseT

IEEE 802.3u for 100BaseT(X), 100BaseFX

##### Interface

**RJ45 Ports:** 10/100BaseT(X)

**Fiber Ports:** 100BaseFX (SC/ST/LC connectors)

**LED Indicators:** PWR1, PWR2, Fiber Link, 10/100M (TP port)

##### DIP Switches:

DIP No.	Function	ON	OFF
1	Auto Negotiation	Enable	Disable
2	Force TP Speed	100 Mbps	10 Mbps
3	Force TP Duplex	Full Duplex	Half Duplex
4	Link Fault Pass Through	Enable	Disable
5	Operating Mode	Store-and-Forward	Pass Through

The default setting for all DIP switches is ON.

**Alarm Contact:** One relay output with current carrying capacity of 1 A @ 24 VDC (LV model only)

#### Optical Fiber

	100BaseFX	
	Multi-mode	Single-mode
Wavelength	1300 nm	1310 nm
Max. TX	-14 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 <sup>a</sup> 4 km <sup>b</sup>	40 km <sup>c</sup>
Saturation	-6 dBm	-3 dBm

- a. 50/125 μm, 800 MHz\*km fiber optic cable
- b. 62.5/125 μm, 500 MHz\*km fiber optic cable
- c. 9/125 μm, 3.5 PS/(nm\*km) fiber optic cable

#### Physical Characteristics

**Housing:** Metal, IP30 protection

**Dimensions:** 152.15 x 123.46 x 66.65 mm (5.99 x 4.86 x 2.62 in)

##### Weight:

Product only: 690 g

Packaged: 875 g

#### Environmental Limits

**Operating Temperature:** -40 to 85°C (-40 to 185°F)

**Storage Temperature:** -40 to 85°C (-40 to 185°F)

**Ambient Relative Humidity:** 5 to 95% (non-condensing)

**Conformal Coating:** Available upon request

## Power Requirements

### Input Voltage:

Power Supply Type		Power Consumption	Fuse Rating
LV - DC	20 to 72 VDC	170 mA @ 20 VDC	3.15A(T) 2
HV - AC	85 to 264 VAC	73 mA @ 85 VAC	3.15A(T) 2
HV - DC	88 to 300 VDC	47 mA @ 88 VDC	3.15A(T) 2

**LV-DC compliant with EN 50155 on 48VDC**

**HV-DC compliant with EN 50155 on 110VDC**

**Connection:** Removable terminal block

**Overload Current Protection:** 1.6 A (protects against two signals shorted together)

**Reverse Polarity Protection:** Protects against V+/V- reversal

### Standards and Certifications

**Safety:** UL 60950-1

**EMC:** CE, FCC

**EMI:** FCC Part 15 Subpart B Class A, EN 55022 Class A

### EMS:

EN 61000-4-2 (ESD) Level 4,  
 EN 61000-4-3 (RS) Level 3,  
 EN 61000-4-4 (EFT) Level 4,  
 EN 61000-4-5 (Surge) Level 4,  
 EN 61000-4-6 (CS) Level 3,  
 EN 61000-4-8 (PFMF) Level 5,  
 EN 61000-4-11

**Power Automation:** IEC 61850-3, IEEE 1613

**Rail Traffic:** EN 50155, EN 50121-4

**Freefall:** IEC 60068-2-32

**Vibration:** IEC-61850-3, IEC-60870-2-2

**Green Product:** RoHS, CRoHS, WEEE

**Note:** Refer to the "Environmental Type Tests" table below for more detailed information.

**MTBF** (mean time between failures)

**Time:** 1,211,613 hrs

**Database:** Telcordia (Bellcore), GB

### Warranty

**Warranty Period:** 5 years

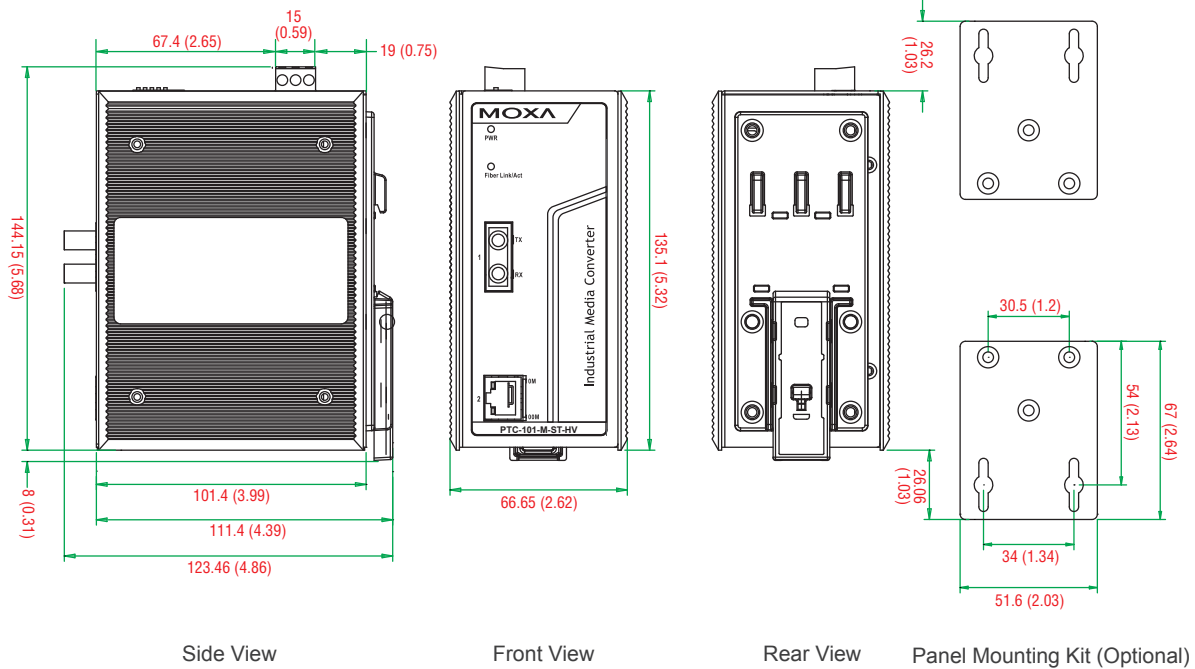
**Details:** See [www.moxa.com/warranty](http://www.moxa.com/warranty)

Environmental Type Tests			
Test	Description		Test Levels
IEC 60068-2-1	Cold, operating (power ON/OFF)	Test Ad	-40°C, 48 hours
IEC 60068-2-3	Damp heat, steady state, operating	Test Ca	85°C, 95% R.H., 24 hours
IEC 60068-2-14	Changing temperature, operating	Test Nb	-40 to 85°C, Ramp rate: 3°C/min, 8 cycles
IEC 60068-2-48 IEC 60068-2-1	Cold, storage	Test Ad	-40°C, 12 hours
IEC 60068-2-48 IEC 60068-2-3	Damp heat, steady state, storage	Test Ca	90°C, 95% R.H., 24 hours
IEC 60068-2-32 ISTA-2A	Freefall, package	Test Ed	90 cm
IEC 60068-2-34	Random vibration, package	Test Fd	3 grms (5 to 500 Hz)
IEC 61850-3 IEC 60870-2-2 IEC 60068-2-6 IEC 60721-3-3	Vibration, operating	Class Cm (3M6, 4M6)	20 m/s <sup>2</sup> (9 to 200 Hz) 15 m/s <sup>2</sup> (200 to 500 Hz)
IEC 61850-3 IEC 60870-2-2 IEC 60068-2-27 IEC 60721-3-3	Shock, operating	Class Cm (3M6, 4M6)	300 m/s <sup>2</sup> , 11 ms

**Dimensions**

Unit: mm (inch)

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



**Ordering Information**

**Available Models**

**PTC-101-M-SC-LV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode with SC connector, dual redundant power inputs (20-70 VDC), -40 to 85°C operating temperature

**PTC-101-M-ST-LV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode with ST connector, dual redundant power inputs (20-70 VDC), -40 to 85°C operating temperature

**PTC-101-M-LC-LV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode with LC connector, dual redundant power inputs (20-70 VDC), -40 to 85°C operating temperature

**PTC-101-S-SC-LV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode with SC connector, dual redundant power inputs (20-70 VDC), -40 to 85°C operating temperature

**PTC-101-S-LC-LV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode with LC connector, dual redundant power inputs (20-70 VDC), -40 to 85°C operating temperature

**PTC-101-S-ST-LV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode with ST connector, dual redundant power inputs (20-70 VDC), -40 to 85°C operating temperature

**PTC-101-M-SC-HV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode with SC connector, 1 isolated power supply (88-300 VDC or 85-264 VAC), -40 to 85°C operating temperature

**PTC-101-M-ST-HV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode with ST connector, 1 isolated power supply (88-300 VDC or 85-264 VAC), -40 to 85°C operating temperature

**PTC-101-M-LC-HV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi-mode with LC connector, 1 isolated power supply (88-300 VDC or 85-264 VAC), -40 to 85°C operating temperature

**PTC-101-S-SC-HV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode with SC connector, 1 isolated power supply (88-300 VDC or 85-264 VAC), -40 to 85°C operating temperature

**PTC-101-S-ST-HV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode with ST connector, 1 isolated power supply (88-300 VDC or 85-264 VAC), -40 to 85°C operating temperature

**PTC-101-S-LC-HV:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single-mode with LC connector, 1 isolated power supply (88-300 VDC or 85-264 VAC), -40 to 85°C operating temperature

**Conformal coating:** Available upon request

**Optional Accessories** (can be purchased separately)

**WK-51:** Wall mounting kit

**Package Checklist**

- 1 PTC-101 media converter
- Hardware installation guide (printed)
- Warranty card

# Tento produkt můžete zakoupit u společnosti AutoCont IPC a.s.



## AutoCont IPC a.s.

Váš dodavatel průmyslových počítačů, komponent a speciálních průmyslových IT systémů.

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### PRŮMYSLOVÉ POČÍTAČE

*fanless embedded PC, do racku, ...*



### POČÍTAČE S DISPLEJEM

*panelové PC, terminály, do vozidel, ...*



### AUTOMATIZACE A SBĚR DAT

*převodníky, karty, moduly, switche, ...*



### PERIFERIE A KOMPONENTY

*monitory, klávesnice, desky, skříně, ...*



### NOTEBOOKY A TABLETY

*odolné, windows, android, IP65, ...*



### INFORMAČNÍ KIOSKY

*interiérové, venkovní, ...*



### MEDICÍNSKÁ TECHNIKA

*počítače, tablety, LCD, klávesnice, ...*



### SOFTWAREVÁ ŘEŠENÍ

*pro výrobu, zaměstnance, kiosky, ...*



### PŘEJÍT DO E-SHOPU

[eshop.autocont-ipc.cz](http://eshop.autocont-ipc.cz)



### DOPRAVA ZDARMA

Doprava zdarma v ČR a SR při objednávce nad 10 000 Kč bez DPH nebo nad 400 EUR.



### PRODLOUŽENÁ ZÁRUKA

Záruka 2 roky na vyráběné počítače s možností jejího prodloužení až na 5 let.



### ODMĚNA ZA VĚRNOST

Pravidelní zákazníci u nás nakupují za nižší ceny. Výše slevy se odvíjí od realizovaného obrátu.



### SERVIS ON-SITE A IN-TIME

K projektovým dodávkám nabízíme rozšířenou podporu a servis s garancí výměny zařízení do 48 hodin.