

# IMC-101G

## Industrial Gigabit Ethernet to fiber media converter



- > 10/100/1000BaseT(X) and 1000BaseSX/LX/LHX/ZX supported
- > Link Fault Pass-Through (LFP) (media converters should work as a pair)
- > Power failure, port break alarm by relay output
- > Redundant power input
- > -40 to 75°C operating temperature range (T models)
- > Designed for hazardous locations

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



### Introduction

The IMC-101G industrial Gigabit media converters are designed to provide reliable and stable 10/100/1000BaseT(X) to 1000BaseSX/LX/LHX/ZX media conversion in harsh industrial environments. The IMC-101G's industrial design is excellent for keeping your industrial automation applications running continuously, and each IMC-101G

converter comes with a relay output warning alarm to help prevent damage and loss. All IMC-101G models are subjected to a 100% burn-in test, and are available in models that support a standard operating temperature range of 0 to 60°C, and an extended operating temperature range of -40 to 75°C.

### Specifications

#### Technology

**Standards:** IEEE 802.3 for 10BaseT  
 IEEE 802.3u for 100BaseT(X) and 100BaseFX  
 IEEE 802.3ab for 1000BaseT(X)  
 IEEE 802.3z for 1000BaseSX/LX/LHX/ZX

#### Interface

**RJ45 ports:** 10/100/1000BaseT(X)  
**Fiber ports:** Optional 1000BaseSX/LX/LHX/ZX (LC connector)  
**LED Indicators:** PWR1, PWR2, FAULT, 10/100M (TP port), 1000M (TP and Fiber port)  
**DIP Switches:** Port break alarm mask, Fault Pass-Through, Fiber AN/Force  
**Alarm Contact:** One relay output with current carrying capacity of 1A @ 24 VDC

#### Optical Fiber

**Distance:**  
 Multi mode:  
 1000BaseSX: 0 to 500 m, 850 nm (50/125 μm, 400 MHz\*km)  
 0 to 275 m, 850 nm (62.5/125 μm, 200 MHz\*km)  
 1000BaseLX: 0 to 1100 m, 1310 nm (50/125 μm, 800 MHz\*km)  
 0 to 550 m, 1310 nm (62.5/125 μm, 500 MHz\*km)  
 Single mode:  
 1000BaseLX: 0 to 10 km, 1310 nm (9/125 μm, 3.5 PS/(nm\*km))  
 1000BaseLHX: 0 to 40 km, 1310 nm (9/125 μm, 3.5 PS/(nm\*km))  
 1000BaseZX: 0 to 80 km, 1550 nm (9/125 μm, 19 PS/(nm\*km))

#### Power Requirements

**Input Voltage:** 24 VDC (12 to 45 VDC), redundant inputs  
**Input Current (@ 24 V):** 0.11A  
**Connection:** Removable terminal block  
**Overload Current Protection:** 1.1A  
**Reverse Polarity Protection:** Present

#### Physical Characteristics

**Housing:** Metal, IP30 protection  
**Dimensions (W x H x D):** 53.6 x 135 x 105 mm (2.11 x 5.31 x 4.13 in)  
**Weight:** 630 g  
**Installation:** DIN-Rail mounting, wall mounting (optional kit)

#### Environmental Limits

**Operating Temperature:** 0 to 60°C (32 to 140°F),  
 -40 to 75°C (-40 to 167°F) for T models  
**Storage Temperature:** -40 to 85°C (-40 to 185°F)  
**Ambient Relative Humidity:** 5 to 95% (non-condensing)

#### Regulatory Approvals

**Safety:** UL508  
**EMI:** FCC Part 15, CISPR (EN55022) class A  
**EMS:** EN61000-4-2 (ESD), level 3  
 EN61000-4-3 (RS), level 3  
 EN61000-4-4 (EFT), level 3  
 EN61000-4-5 (Surge), level 3  
 EN61000-4-6 (CS), level 3  
 EN61000-4-8  
 EN61000-4-11

**Shock:** IEC60068-2-27  
**Freefall:** IEC60068-2-32  
**Vibration:** IEC60068-2-6  
**MTBF:** 500,000 hrs

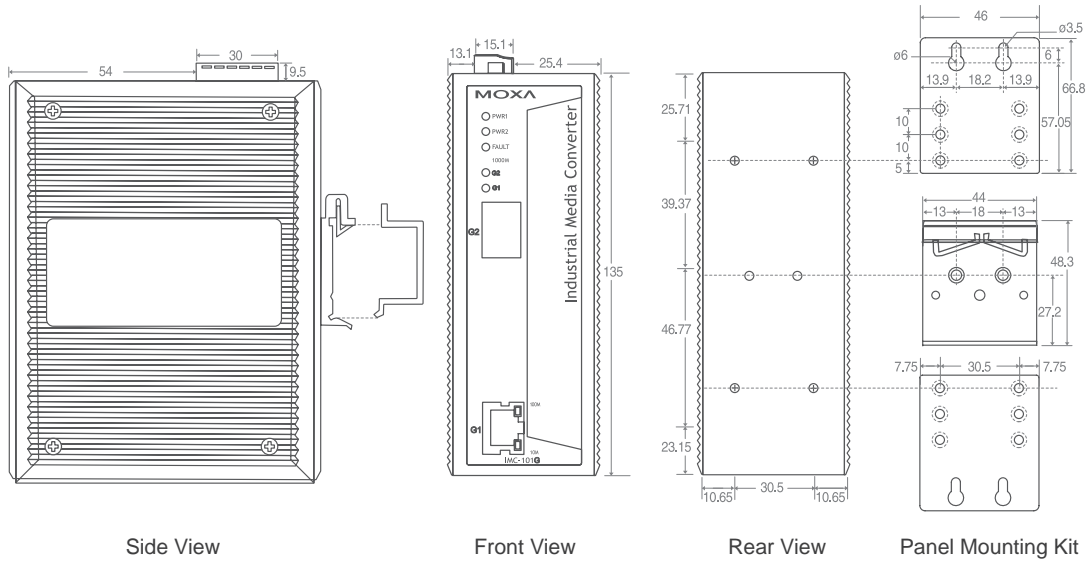
Database: Telcordia (Bellcore), GB

\*Please check Moxa's website for the most up-to-date status.

#### Warranty

5 years (see [www.moxa.com/warranty](http://www.moxa.com/warranty) for details)

**Dimensions (unit = mm)**



**Ordering Information**

- **IMC-101G:** Industrial 10/100/1000BaseT(X) to 1000BaseSX/LX/LHX/ZX media converter, 0 to 60°C
- **IMC-101G-T:** Industrial 10/100/1000BaseT(X) to 1000BaseSX/LX/LHX/ZX media converter, -40 to 75°C

\* When purchasing an IMC-101G converter, you must also purchase an SFP module, which attaches to the IMC-101G's SFP slot. Ordering information for SFP modules is given on the last page of this document.

**Optional Accessories**

- **DR-4524:** 45W/2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-75-24:** 75W/3.2A DIN-Rail 24 VDC power supply, 85 to 264 VAC input
- **DR-120-24:** 120W/5A DIN-Rail 24 VDC power supply, 88 to 132 VAC/176 to 264 VAC input by switch
- **WK-46:** Wall mounting kit
- **RK-4U:** 4U-high 19" rack mounting kit

# SFP-1G Series

## 1-port Gigabit Ethernet SFP modules



- > Compliant with IEEE 802.3z
- > 1.0625 Gbd fiber channel, 1.25 Gigabit Ethernet
- > Differential LVPECL inputs and outputs
- > Single power supply 3.3V
- > TTL signal detect indicator
- > Hot Pluggable
- > Class 1 laser product, complies with EN 60825-1

The certification logos shown here apply to some or all of the products in this section. Please see the **Specifications** section or Moxa's website for details.



## Specifications

### Interface

**Gigabit Port:** 1 port

**Connector:** Duplex LC Connector or

Simplex LC Connector\* (WDM-type only)

\* WDM-type SFP modules must be used in pairs (e.g., SFP-1GXXALC and SFP-1GXXBLC)

### Optical Fiber

	Gigabit Ethernet			
	SFP-SX	SFP-LX	SFP-LHX	SFP-ZX
Wavelength	850 nm	1310 nm	1310 nm	1550 nm
Max. TX	-4 dBm	-3 dBm	1 dBm	5 dBm
Min. TX	-9.5 dBm	-9.5 dBm	-4 dBm	0 dBm
RX Sensitivity	-18 dBm	-20 dBm	-24 dBm	24 dBm
Link Budget	8.5 dB	10.5 dB	20 dB	24 dB
Typical Distance	550 m <sup>a</sup> 275 m <sup>b</sup>	1100 m <sup>c</sup> 550 m <sup>d</sup> 10 km <sup>e</sup>	40 km <sup>e</sup>	80 km <sup>f</sup>
Saturation	0 dBm	-3 dBm	-3 dBm	-3 dBm

	Gigabit Ethernet					
	SFP-10A	SFP-10B	SFP-20A	SFP-20B	SFP-40A	SFP-40B
Wave-length	TX 1310 nm, RX 1550 nm		TX 1310 nm, RX 1550 nm		TX 1550 nm, RX 1310 nm	
Max. TX	-3 dBm		-2 dBm		2 dBm	
Min. TX	-9 dBm		-8 dBm		-3 dBm	
RX Sensitivity	-21 dBm		-23 dBm		-23 dBm	
Link Budget	12 dB		15 dB		20 dB	
Typical Distance	10 km <sup>ef</sup>		20 km <sup>ef</sup>		40 km <sup>ef</sup>	
Saturation	-1 dBm		-1 dBm		-1 dBm	

- a. 50/125 μm, 400 MHz\*km fiber optic cable
- b. 62.5/125 μm, 200 MHz\*km fiber optic cable
- c. 50/125 μm, 800 MHz\*km fiber optic cable
- d. 62.5/125 μm, 500 MHz\*km fiber optic cable
- e. 9/125 μm, 3.5 PS/(nm\*km) fiber optic cable
- f. 9/125 μm, 19 PS/(nm\*km) fiber optic cable

### Environmental Limits

**Operating Temperature:** 0 to 60°C (32 to 140°F)

-40 to 85°C (-40 to 185°F) for T models

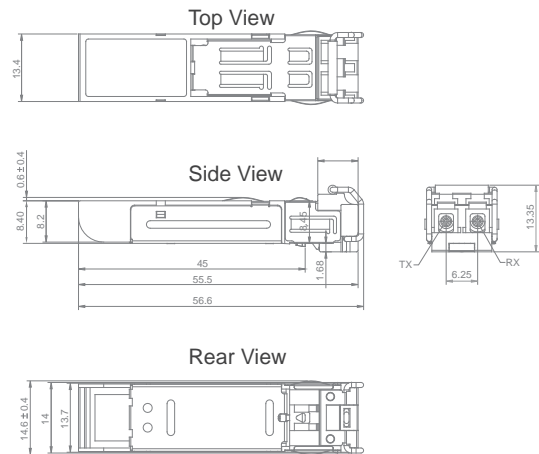
**Storage Temperature:** -40 to 85°C (-40 to 185°F)

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

### Regulatory Approvals

**Safety:** UL, TUV, EN60825-1

### Dimensions (unit = mm)



## Ordering Information

### SFP Modules

Model Name		Port Interface			
Standard Temperature (0 to 60°C)	Extended Temperature (-40 to 85°C)	1000BaseSX, LC Connector, 0.5 km	1000BaseLX, LC Connector, 10 km	1000BaseLHX, LC Connector, 40 km	1000BaseZX, LC Connector, 80 km
SFP-1GSXLC	SFP-1GSXLC-T*	1	---	---	---
SFP-1GLXLC	SFP-1GLXLC-T	---	1	---	---
SFP-1GLHXL	SFP-1GLHXL-T	---	---	1	---
SFP-1GZXL	SFP-1GZXL-T	---	---	---	1

\* SFP-1GSXLC-T: -20 to 75°C operating temperature

### WDM-type (BiDi) SFP Modules

Model Name		Port Interface					
Standard Temperature (0 to 60°C)	Extended Temperature (-40 to 85°C)	1000BaseSFP, LC Connector, 10 km		1000BaseSFP, LC Connector, 20 km		1000BaseSFP, LC Connector, 40 km	
		TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm	TX 1310 nm, RX 1550 nm	TX 1550 nm, RX 1310 nm
SFP-1G10ALC	SFP-1G10ALC-T	1	---	---	---	---	---
SFP-1G10BLC	SFP-1G10BLC-T	---	1	---	---	---	---
SFP-1G20ALC	SFP-1G20ALC-T	---	---	1	---	---	---
SFP-1G20BLC	SFP-1G20BLC-T	---	---	---	1	---	---
SFP-1G40ALC	SFP-1G40ALC-T	---	---	---	---	1	---
SFP-1G40BLC	SFP-1G40BLC-T	---	---	---	---	---	1

### The SFP-1G Series modules can be used with the following products

- **EDS-828/728 series:** IM-2G series Gigabit Ethernet interface modules
- **EDS-518A series:** 16+2G-port Gigabit managed Ethernet switch
- **EDS-510A series:** 7+3G-port Gigabit managed Ethernet switch
- **PT-7828/7728/7710/7324 series:** PM-7200-2G/4G series Gigabit Ethernet interface modules
- **IMC-101G:** Industrial Gigabit media converters