IMC-101G

Industrial Gigabit Ethernet to fiber media converter

- 10/100/1000BaseT(X) and 1000BaseSX/LX/LHX/ZX supported
- Link Fault Pass-Through (LFP)
- 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)

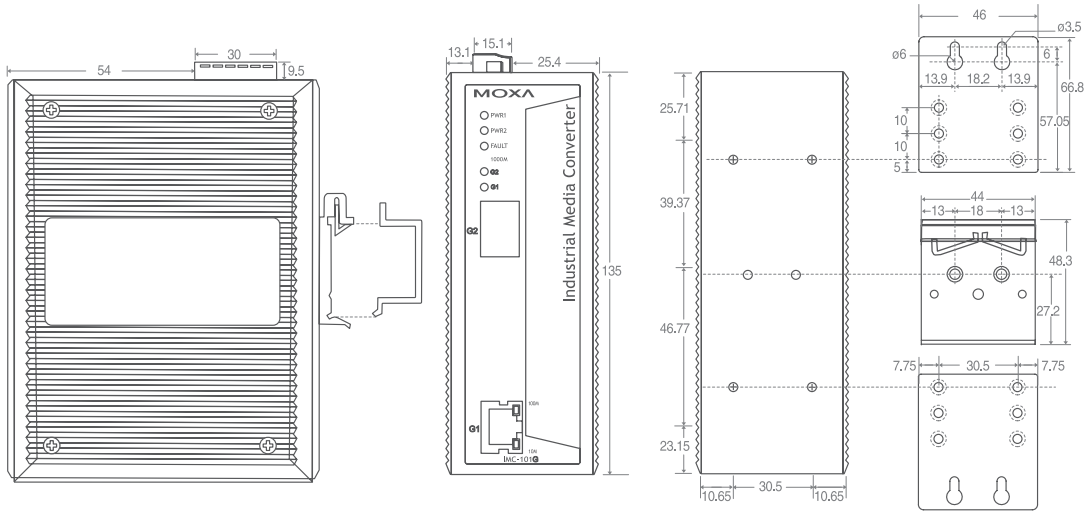
Regulatory Approvals

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 for details)

Dimensions (unit = mm)



Side View | Front View | Rear View | Panel Mounting Kit

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

* IMC-101G series supports 1 SFP slot. Please see page 3-33 for the product information of SFP-1G series Gigabit Ethernet SFP modules.

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

IMC-101 Series

Industrial 10/100BaseT(X) to 100BaseFX media converters

- 10/100BaseT(X) auto-negotiation and auto-MDI/MDI-X
- Link Fault Pass-Through (LFP)
- Power failure, port break alarm by relay output
- Redundant power inputs
- -40 to 75°C operating temperature range (T models)
- Designed for hazardous locations (Class 1 Div. 2/Zone 2)

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-101 industrial media converters provide industrial grade media conversion between 10/100BaseT(X) and 100BaseFX (SC/ST connectors). The IMC-101's reliable industrial design is excellent for keeping your industrial automation applications running continuously, and each IMC-101 converter comes with a relay output warning alarm to help prevent damage and loss. The IMC-101 media converters are designed for harsh industrial environments, such as in hazardous locations (Class 1, Division 2/Zone 2, DNV, and GL Certification), and comply with FCC, TV, UL, and CE standards. The IMC-101 series is available in models that support an operating temperature of 0 to 60°C, and an extended operating temperature of -40 to 75°C. All IMC-101 series are subjected to a 100% burn-in test.

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 connectors)

LED Indicators: PWR1, PWR2, FAULT, 10/100M (TP port), 100M (Fiber port), FDX/COL (Fiber port)

DIP Switches: 100BaseFX Full/Half duplex selection, port break alarm mask

Alarm Contact: One relay output with current carrying capacity of 1A @ 24 VDC

Optical Fiber

	100BaseFX		
	Multi Mode	Single Mode	Single Mode, 80 km
Wavelength	1300 nm	1310 nm	1550 nm
Max. TX	-10 dBm	0 dBm	0 dBm
Min. TX	-20 dBm	-5 dBm	-5 dBm
RX Sensitivity	-32 dBm	-34 dBm	-34 dBm
Link Budget	12 dB	29 dB	29 dB
Typical Distance	5 km [a] 4 km [b]	40 km [c]	80 km [d]
Saturation	-6 dBm	-3 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
d. 9/125 µm, 19 PS/(nm*km) fiber optic cable

Power Requirements

Input Voltage: 24 VDC (12 to 48 VDC), redundant inputs
Input Current (@ 24 V): 0.16A
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)

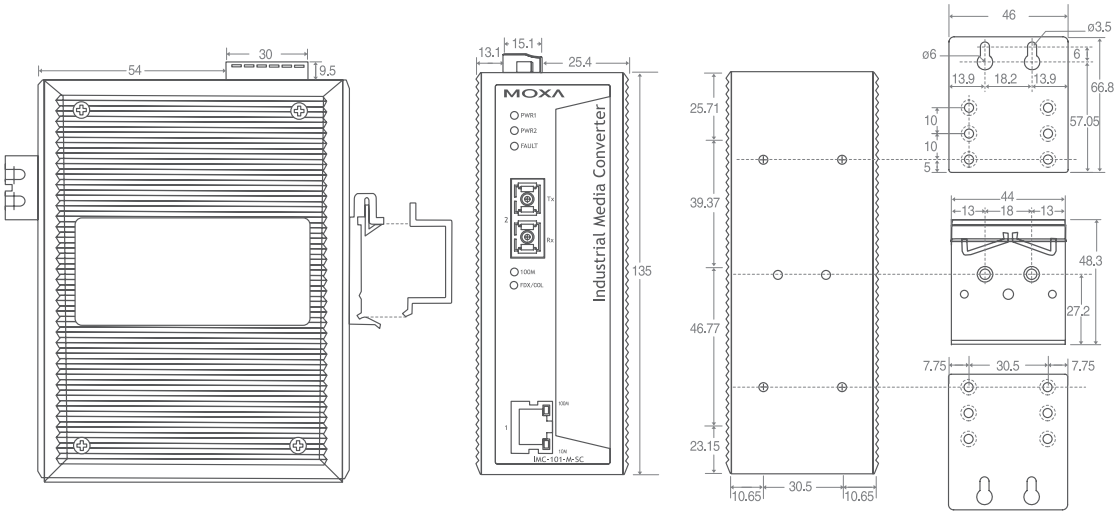
Regulatory Approvals

Safety: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1
Hazardous location:
UL/cUL Class1, Division 2, Groups A, B, C, and D,
ATEX Class1, Zone 2, Ex nC IIC (IMC-101-M-ST, IMC-101-S-SC-80 pending)
Maritime: DNV, GL
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: 401,000 hrs
Database: MIL-HDBK-217F: GB 25°C

Warranty

5 years (see www.moxa.com/warranty for details)

Dimensions (unit = mm)



Side View | Front View | Rear View | Panel Mounting Kit

Ordering Information

- **IMC-101-M-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, SC connector, 0 to 60°C
- **IMC-101-M-ST:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, ST connector, 0 to 60°C
- **IMC-101-S-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 40 km, 0 to 60°C
- **IMC-101-S-SC-80:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 80 km, 0 to 60°C
- **IMC-101-M-SC-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, SC connector, -40 to 75°C
- **IMC-101-M-ST-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, ST connector, -40 to 75°C
- **IMC-101-S-SC-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 40 km, -40 to 75°C
- **IMC-101-S-SC-80-T:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, 80 km, -40 to 75°C

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
- **SC to ST, SC to SC, ST to ST Connectors:** See page A-14

IMC-21 Series

Entry-level industrial 10/100BaseT(X) to 100BaseFX and 10BaseT to 10BaseFL media converter

- Multi mode, single mode with SC or ST fiber connector
- Link Fault Pass-Through (LFP)
- Power inputs: 12 to 45 VDC, 18 to 30 VAC (47-63 Hz)
- -10 to 60°C operating temperature range
- DIP Switch to select FDX/HDX/10/100/Auto/Force

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-21 industrial media converters are entry-level 10/100BaseT(X) to 100BaseFX and 10BaseT to 10BaseFL media converters designed to provide reliable and stable operation in harsh industrial environments. The IMC-21 is a cost-effective solution that runs on either a 12 to 45 VDC power input or 18 to 30 VAC power input. The IMC-21 can operate reliably in temperatures ranging from -10 to 60°C, and the rugged hardware design ensures that your Ethernet equipment can withstand demanding industrial conditions. The IMC-21 is easy to mount on a DIN-Rail or in distribution boxes.

Specifications

Technology

Standards: IEEE 802.3 for 10BaseT,
IEEE 802.3u for 100BaseT(X), 100BaseFX,
IEEE 802.3x for Flow Control

Interface

RJ45 ports:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC: 10/100BaseT(X)
- IMC-21-M-ST-FL: 10BaseT

Fiber ports:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC: 100BaseFX (SC/ST connectors)
- IMC-21-M-ST-FL: 10BaseFL (ST connector only)

LED Indicators:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC: Power, 10/100M (TP port), 100M (fiber port), FDX/COL (fiber port)
- IMC-21-M-ST-FL: Power, LNK/ACT (fiber port), LNK/ACT (TP port)

DIP Switches:

- IMC-21-M-SC, IMC-21-M-ST, IMC-21-S-SC:
  -TP port's 10/100M, Half/Full mode, and Force/Auto mode are DIP switch selectable
  - Fiber connection's Half/Full mode is DIP switch selectable
  - Link Fault Pass-Through (LFP) is DIP switch selectable
- IMC-21-M-ST-FL:
  - TP port's MDI/MDI-X and Half/Full mode are DIP Switch selectable

Optical Fiber

Distance:	10BaseFL: 2 km, 820 nm 100BaseFX (Multi mode): 5 km, 1300 nm 100BaseFX (Single mode): 40 km, 1310 nm
Min. TX Output:	10BaseFL: -16 dBm 100BaseFX (Multi mode): -20 dBm 100BaseFX (Single mode): -5 dBm
Max. TX Output:	10BaseFL: -7 dBm 100BaseFX (Multi mode): -14 dBm 100BaseFX (Single mode): 0 dBm
RX Sensitivity:	10BaseFL: -34.1 dBm 100BaseFX (Multi mode): -34 to -30 dBm 100BaseFX (Single mode): -36 to -32 dBm

Power

Input Voltage: 12 to 45 VDC, 18 to 30 VAC (47-63 Hz)

Power Consumption (@ 24 V): 0.15A

Connection: Removable 3-contact terminal block

Overload Current Protection: 1.1A

Reverse Polarity Protection: Present

Physical Characteristics

Housing: Plastic, IP30 protection

Dimensions (W x H x D): 25 x 109 x 97 mm (0.98 x 4.29 x 3.82 in)

Weight: 125 g

Installation: DIN-Rail mounting

Environmental Limits

Operating Temperature: -10 to 60°C (14 to 140°F)

Storage Temperature: -40 to 70°C (-40 to 158°F)

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

Regulatory Approvals

Safety: UL508, UL60950-1, CSA C22.2 No. 60950-1, EN60950-1

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: EN61000-4-2 (ESD)
EN61000-4-3 (RS)
EN61000-4-4 (EFT)
EN61000-4-5 (Surge)
EN61000-4-6 (CS)

Shock: IEC60068-2-27

Freefall: IEC60068-2-32

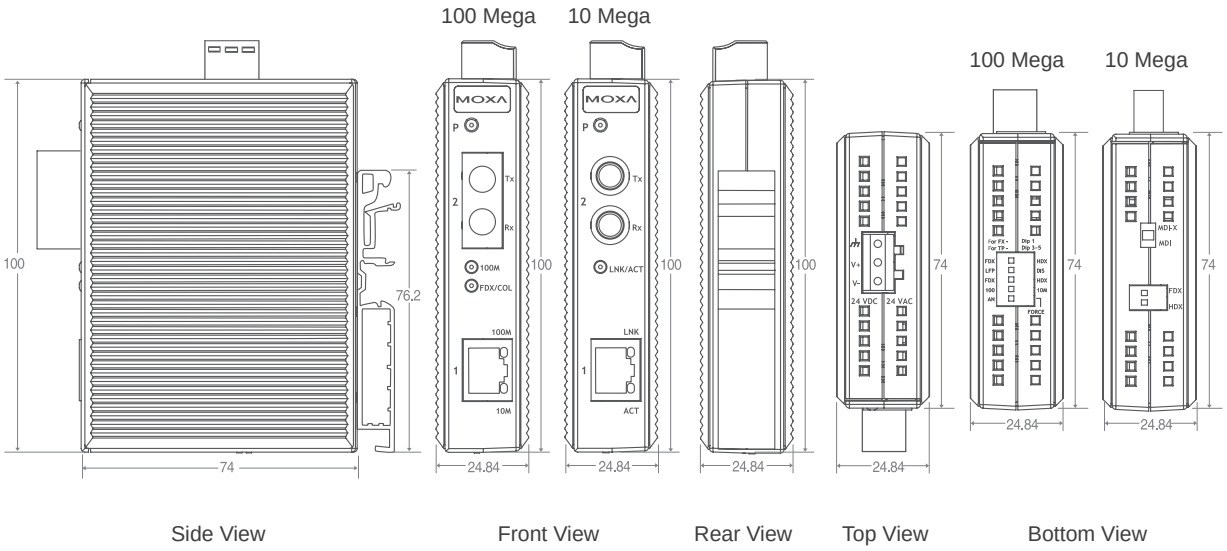
Vibration: IEC60068-2-6

MTBF: 353,000 hrs
Database: MIL-HDBK-217F: GB 25˚C

Warranty

5 years (see www.moxa.com/warranty for details)

Dimensions (unit = mm)



Side View | Front View | Rear View | Top View | Bottom View

Ordering Information

- **IMC-21-M-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, SC connector, -10 to 60°C
- **IMC-21-M-ST:** Industrial 10/100BaseT(X) to 100BaseFX media converter, multi mode, ST connector, -10 to 60°C
- **IMC-21-S-SC:** Industrial 10/100BaseT(X) to 100BaseFX media converter, single mode, SC connector, -10 to 60°C
- **IMC-21-M-ST-FL:** Industrial 10BaseT to 10BaseFL media converter, multi mode, ST connector, -10 to 60°C

Optional Accessories

- **RK-4U:** 4U-high 19” rack mounting kit
- **SC to ST, SC to SC, ST to ST Connectors:** See page A-14