

ICF-1170I Series

Industrial CAN-to-fiber converters



15 kV ESD

- > Transmits up to 2 km over optical fiber
- > Converts CAN signals to fiber and fiber to CAN signals
- > Baudrate up to 1 Mbps
- > Dual power inputs for redundancy
- > DIP switch for 120 ohm terminal resistance
- > DIP switch for fiber test mode
- > LEDs for Fiber TX, Fiber RX, Power 1, Power 2
- > Wide temperature model available for -40 to 85°C environments
- > Fully compatible with the ISO 11898 standard



Introduction

The ICF-1170I series CAN-to-fiber converters are used to convert CAN signals from copper to optical fiber. The converters come with 2 kV optical isolation for the CANbus system and dual power inputs with

alarm contact relay to ensure that your CANbus system will remain online.

Fiber Test Mode

Fiber Test Mode can be used to test the fiber cable between two ICF-1170I units, and it provides a simple way to determine if the fiber cable is transmitting data correctly. When in Fiber Test Mode, the fiber transceiver (TX) will continuously send out a data signal and the "Fiber

TX" LED will light up. On the other side of the connection, when the ICF-1170I fiber transceiver (RX) receives the data signal from the TX side, the "Fiber RX" LED will light up.

Specifications

CAN Communication

CAN Interface: ISO 11898-2, Terminals (CAN_H, CAN_L, CAN_GND)

Protocols: CAN 2.0A and 2.0B (ISO 11898-2)

Connector Type: 3-pin removable screw terminal x1

Termination Resistor: Dip switch selector for 120 Ω terminal resistor

Transfer Rate: Up to 1 Mbps

System Delay: 150 ns

Isolation Protection: 2 kV

Transmission Distance: Max 2 km (depends on the data rate and the protocol used)

Note: The transmission distance is limited by the signal rate, as indicated in the ISO 11898-2 standard.

LED Indicators: PWR1, PWR2, Fiber TX, Fiber RX

Fiber Communication

Connector Type: ST (multi-mode) fiber ports

Fiber Cable Requirements:

Low-Speed Fiber Module		Multi-Mode
Fiber Cable Requirements		50/125 μm, 800 MHz
		62.5/125 μm, 500 MHz
Typical Distance		5 km
Wave-length	Typical (nm)	850
	TX Range (nm)	840 to 860
	RX Range (nm)	800 to 900
Optical Power	TX Range (dBm)	0 to -5
	RX Range (dBm)	0 to -20
	Link Budget (dB)	15
	Dispersion Penalty (dB)	1

Physical Characteristics

Housing: Metal
Dimensions: 30.3 x 70 x 115 mm (1.19 x 2.76 x 4.53 in)
Weight: 178 g (0.39 lb)

Environmental Limits

Operating Temperature:
 Standard Models: 0 to 60°C (32 to 140°F)
 Wide Temp. Models: -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)

Power Requirements

Input Voltage: 12 to 48 VDC dual power for redundant power
Input Current:
 ICF-1170I: 221 mA @ 12 VDC
 Alarm Contact: 1 relay output with current-carrying capacity of 1 A @ 24 VDC
Voltage Reversal Protection: Protects against V+/V- reversal
Overcurrent Protection: 1.1 A (protects against two signals shorted together)

Standards and Certifications

Safety: UL 508
EMC: EN 55032/24
EMI: CISPR 32, FCC Part 15B Class A
EMS:
 EN 61000-4-2 (ESD): Contact: 8 kV; Air: 15 kV
 EN 61000-4-3 (RS): 80 MHz to 1 GHz: 3 V/m
 EN 61000-4-4 (EFT): Power: 4 kV; Signal: 2 kV
 EN 61000-4-5 (Surge): Power: 2 kV; Signal: 1 kV
 EN 61000-4-6 (CS): 150 kHz to 80 MHz: 3 V/m
 EN 61000-4-8 (PFMF)

Green Product: RoHS, CRoHS, WEEE

Freefall: IEC 60068-2-32

MTBF (mean time between failures)

Time: 792,085 hrs

Standard: Telcordia (Bellcore), GB

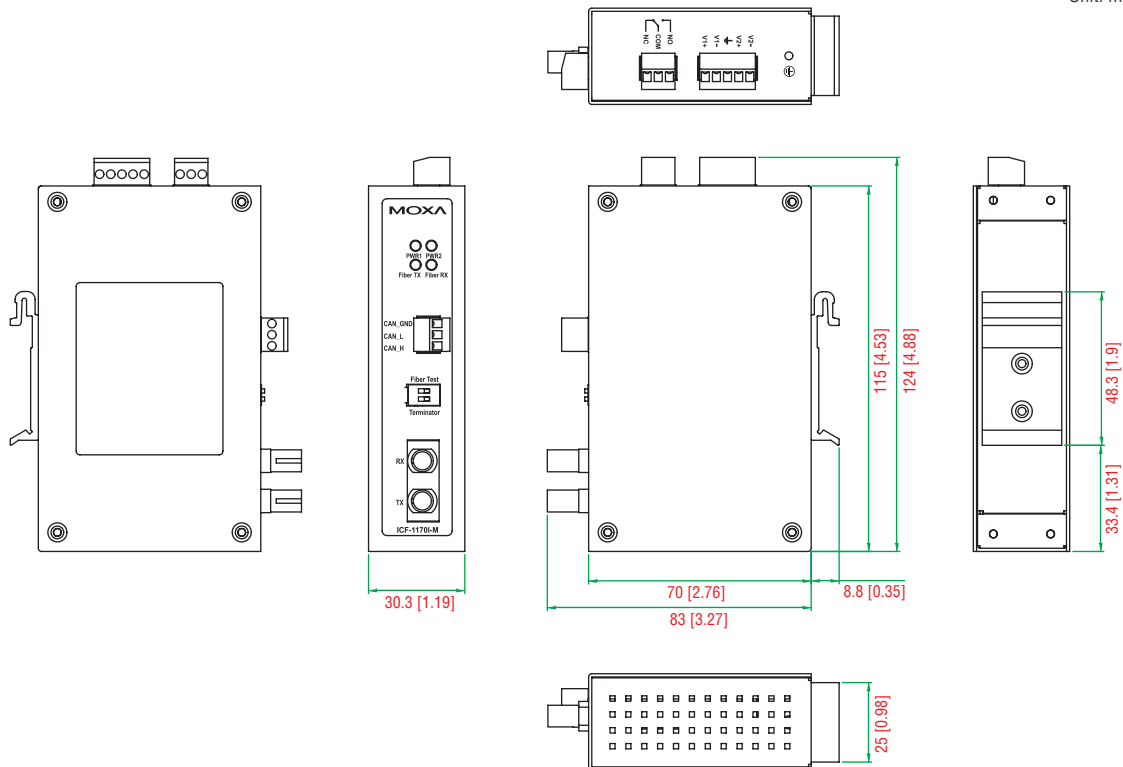
Warranty

Warranty Period: 5 years

Details: See www.moxa.com/warranty

Dimensions

Unit: mm (inch)



Ordering Information

Available Models

ICF-1170I-M-ST: CAN-to-fiber converter, multi-mode, ST connector, 0 to 60°C
ICF-1170I-M-ST-T: CAN-to-fiber converter, multi-mode, ST connector, -40 to 85°C

Package Checklist

- 1 ICF-1170I CAN-to-fiber converter
- Quick installation guide (printed)
- Warranty card