ICF-1150 Series

Industrial serial-to-fiber converters

- RS-232, fiber, and RS-422/485 3-way communication
- Rotary switch to change the pull high/low resistor value
- Extend RS-232/422/485 transmission up to:
  - 40 km with single-mode
  - 5 km with multi-mode
- 3-way Galvanic Isolation (for "I" model only)
- -40 to 85°C wide temperature models available
- Class I, Div. II certification

Three-Way Communication

The ICF-1150 series support 2 serial ports, with a D-sub connector for RS-232 communication and a removable terminal block for RS-422 or RS-485 communication. The 3 ports (2 serial ports and one fiber port) are completely independent. When an ICF-1150 converter receives data from any one port, it will send the data out through the other 2 ports. For example, once the ICF-1150 converter receives a command from the remote master through the fiber port, it will convert the signal and send the command through the RS-232 and RS-422/485 ports at the same time. If the user is monitoring a system running on an RS-485 network, there is no need to use an additional RS-232 to RS-485 converter to connect the laptop computer's serial port to the RS-485 bus.

Rotary Switch for Setting the Pull High/Low Resistor

The RS-485 interface supports multi-drop or daisy-chain connections, which system engineers will use to connect serial devices such as meters, RTUs, and readers together on the same bus. Since the number of serial devices on the same bus will cause the impedance of the data line to increase, the ICF-1150 allows users to tune the pull high/low resistor. Just rotate the switch to the appropriate value without removing the ICF-1150 from the DIN-rail.

Pull High/Low Resistor Values

Position	0	1	2	3	4	5	6	7	8	9
ohms	150K	10K	4.7K	3.3K	1K	909	822	770	500	485

Specifications

Optical Fiber Side

Fiber Connector: SC or ST

Cable Requirements:
Single-mode: 8.3/125, 8.7/125, 9/125, or 10/125 μm
Multi-mode: 50/125, 62.5/125, or 100/140 μm

Transmission Distance:
Single-mode: 40 km
Multi-mode: 5 km

Wavelength:
ICF-1150-S (single-mode): 1310 nm
ICF-1150-M (multi-mode): 850 nm

Tx Output:
ICF-1150-S (single-mode): > -5 dBm
ICF-1150-M (multi-mode): > -5 dBm

Rx Sensitivity:
ICF-1150-S (single-mode): -25 dBm
ICF-1150-M (multi-mode): -20 dBm

Point-to-Point Transmission: Half-duplex or full-duplex

Multi-drop Transmission: Half-duplex, fiber ring

RS-232/422/485 Side

RS-232 Signals: TxD, RxD, SGND

RS-422 Signals: TxD+, TxD-, RxD+, RxD-, SGND

RS-485-4w Signals: TxD+, TxD-, RxD+, RxD-, SGND

RS-485-2w Signals: Data+, Data-, SGND

Baudrate: 50 bps to 921.6 Kbps

ESD Protection: 15 KV for all signals

Isolation: 2 KV RMS isolation per I/O port for 1 minute

Physical Characteristics

Housing: Aluminum (1 mm)

Dimensions: 30.3 x 70 x 115 mm (1.19 x 2.76 x 4.53 in)

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)

Operating Humidity: 5 to 95% RH

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

Power Requirements

Input Voltage: 12 to 48 VDC

Power Consumption:
ICF-1150: 127 mA @ 12 V
ICF-1150I: 163 mA @ 12 V

Voltage Reversal Protection: Protects against V+/V- reversal

Over Current Protection: 1.1 A (protects against two signals shorted together)

Regulatory Approvals

CE: Class B

FCC: Part 15 sub Class B

Safety: UL 508

EMI: EN55022 2006, Class B

EMS:
EN61000-4-2 (ESD), Criteria A, Level 4
EN61000-4-3 (RS), Criteria A, Level 2
EN61000-4-4 (EFT), Criteria A, Level 4
EN61000-4-5 (Surge), Criteria A, Level 3
EN61000-4-6 (CS), Criteria A, Level 2
EN61000-4-8 (PFMF), Criteria A, Level 3

ATEX: Class 1, Zone 2, EEx nC IIC

Hazardous Location: UL/cUL Class 1, Div. 2, Group A, B, C and D

Freefall: IEC 60068-2-32

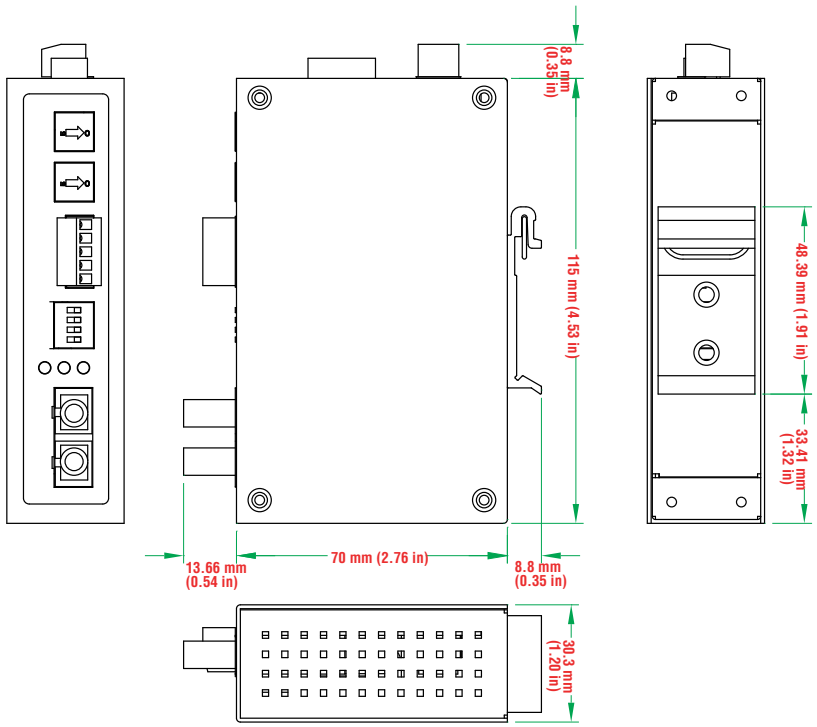
Water and Dust Proof: IP30

Warranty

Warranty Period: 5 years

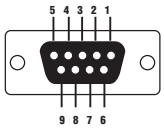
Details: See www.moxa.com/warranty

Dimensions



Pin Assignment

DB9 female connector



Pin	RS-232
1	DCD
2	RxD
3	TxD
4	DTR
5	GND
6	DSR
7	RTS
8	CTS

Ordering Information

Available Models

ICF-1150-M-SC: Industrial RS-232/422/485 to multimode fiber converter, SC connector, 0 to 60°C operating temperature
ICF-1150-M-ST: Industrial RS-232/422/485 to multimode fiber converter, ST connector, 0 to 60°C operating temperature
ICF-1150-S-SC: Industrial RS-232/422/485 to single mode fiber converter, SC connector, 0 to 60°C operating temperature
ICF-1150-S-ST: Industrial RS-232/422/485 to single mode fiber converter, ST connector, 0 to 60°C operating temperature
ICF-1150I-M-SC: Industrial RS-232/422/485 to multimode fiber converter, SC connector, 2 KV isolation, 0 to 60°C operating temperature
ICF-1150I-M-ST: Industrial RS-232/422/485 to multimode fiber converter, ST connector, 2 KV isolation, 0 to 60°C operating temperature
ICF-1150I-S-SC: Industrial RS-232/422/485 to single mode fiber converter, SC connector, 2 KV isolation, 0 to 60°C operating temperature
ICF-1150I-S-ST: Industrial RS-232/422/485 to single mode fiber converter, ST connector, 2 KV isolation, 0 to 60°C operating temperature
ICF-1150-M-SC-T: Industrial RS-232/422/485 to multimode fiber converter, SC connector, -40 to 85°C operating temperature
ICF-1150-M-ST-T: Industrial RS-232/422/485 to multimode fiber converter, ST connector, -40 to 85°C operating temperature
ICF-1150-S-SC-T: Industrial RS-232/422/485 to single mode fiber converter, SC connector, -40 to 85°C operating temperature
ICF-1150-S-ST-T: Industrial RS-232/422/485 to single mode fiber converter, ST connector, -40 to 85°C operating temperature
ICF-1150I-M-SC-T: Industrial RS-232/422/485 to multimode fiber converter, SC connector, 2 KV isolation, -40 to 85°C operating temperature
ICF-1150I-M-ST-T: Industrial RS-232/422/485 to multimode fiber converter, ST connector, 2 KV isolation, -40 to 85°C operating temperature
ICF-1150I-S-SC-T: Industrial RS-232/422/485 to single mode fiber converter, SC connector, 2 KV isolation, -40 to 85°C operating temperature
ICF-1150I-S-ST-T: Industrial RS-232/422/485 to single mode fiber converter, ST connector, 2 KV isolation, -40 to 85°C operating temperature

Optional Accessories

DR-4524: 45 W, 2 A Din-Rail 24 VDC power supply with universal 85 to 264 VAC input

Package Checklist

- ICF-1150 series fiber converter
- Quick Installation Guide (printed)
- Warranty Card

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