

## iSC2F

Single Port RS232/RS422/RS485/Fiber Serial Media Converter  
IEC 61850-3 and IEEE 1613 Compliant



### Product Features

- Provides serial copper to serial optical conversion
- Support for 1 x RS232/422/485 serial port to 1 x 10FL Multimode ST fiber port
- Supports full/half duplex operation
- Supports multiple baud rates
- Single input of 24VDC (Nom); 48VDC (Nom); or single input 100-240VDC (Nom); or 100-240VAC (Nom) 50/60Hz
- IP-40 Galvanized Steel Housing
- DIN-Rail mounting

# Introduction

The iSC2F is a cost-effective single serial media converter solution for the conversion between serial RS232/RS485/RS422 interfaces and serial optical fiber. The iSC2F has been designed for power substation applications and rolling stock applications and is fully compliant with the IEC 61850-3 and IEEE 1613 standards. The iSC2F accepts a wide input voltage range of single input of 11-36VDC (Opr), 24VDC (Nom); 36-75VDC (Opr), 48VDC (Nom); or single input 88-300VDC (Opr), 100-240VDC (Nom); or 85-264VAC (Opr) 50/60Hz, 100-240VAC (Nom), which makes it suitable for harsh operating environment. These features combined with a wide operating temperature of -40°C to 85°C help protect mission-critical applications from network interruptions or temporary malfunctions.

The iSC2F supports the following functions:

- Two-wire RS232 compliant (TX, RX)
- Two-wire RS485 half-duplex compliant (D+, D-)
- Four-wire RS485/422 full-duplex compliant (TX+, TX-, RX+, RX-)
- Switch selectable 120  $\Omega$  terminations
- Up to 5 km multimode fiber
- Selectable Fiber Repeater Mode (fiber in -> fiber out)
- TX/RX LED indicators on RS232/485/422 traffic
- Configurable RS485 half-duplex turn-around time
- 1200-115200 baud supported

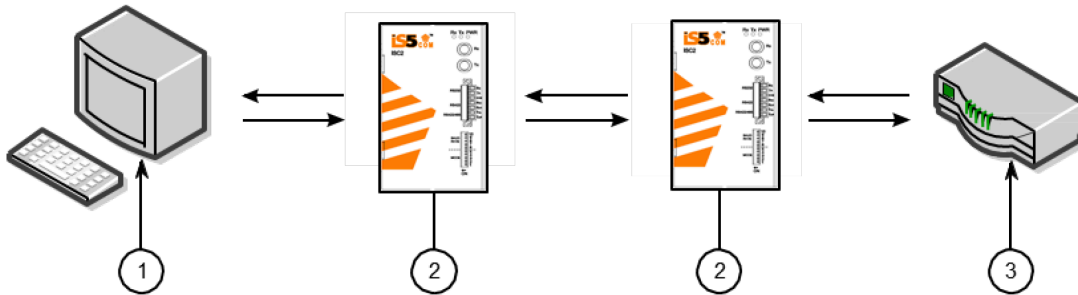
The iSC2F is equipped to provide conversion from serial (RS232, RS485, or RS422) to fiber optics or between serial standards (RS232 to RS485 / RS422).

Serial to fiber optical conversion connections can be:

- Point-to-Point
- Fiber Repeater Mode
- Standard Serial Connection

By using the DIP switches, iSC2F can be used in the following operating modes.

### SERIAL-TO-FIBER CONVERSION— POINT-TO-POINT

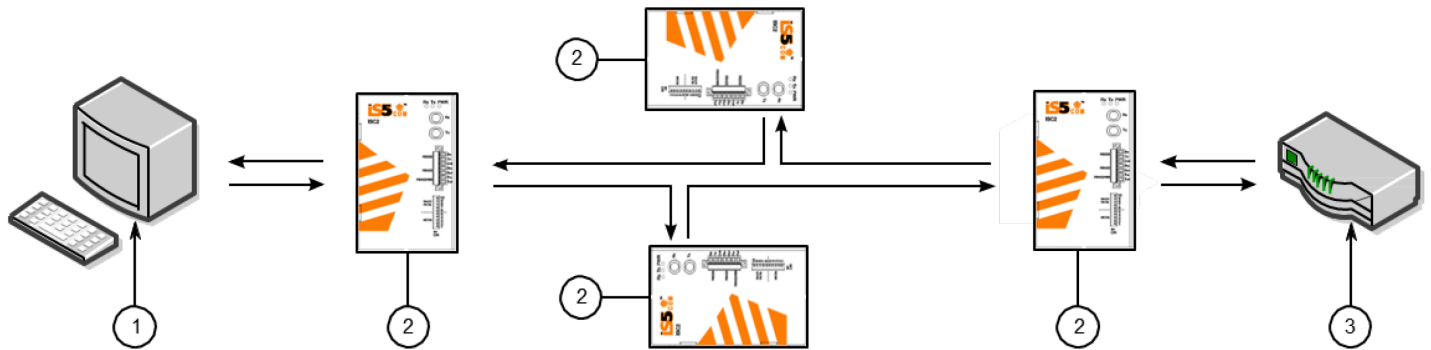


- 1. RS232 device
- 2. iSC2F
- 3. RS485 Device/ Network

Note that the distance between the two ISC2 devices should be less than 5 km (3.1 mi).

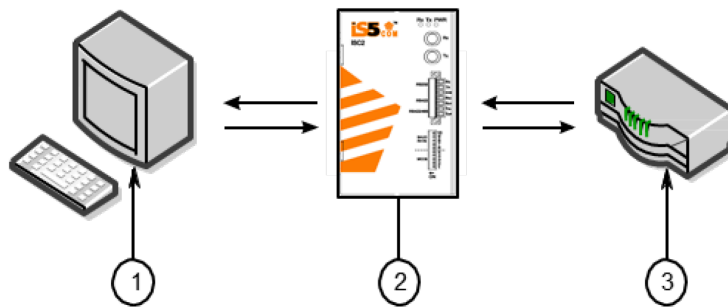
### FIBER REPEATER MODE

When a distance that is more than 5 km (3.1 mi) has to be supported, iSC2F must be used in Fiber Repeater mode. This mode supports extended distance between serial devices.



- 1. RS232 device
- 2. iSC2F
- 3. RS485 Device/ Network

## SERIAL STANDARD CONVERSION



**RS232 to RS485/422 Topology**

1. RS232 device
2. iSC2F
3. RS485 Device/ Network

# Specifications

## MODEL NUMBER

iSC2F

### PHYSICAL PORTS

10M SERIAL FIBER PORT	1
RS232/RS422/RS485	1 (2 for RS232 to RS485 conversion)

### POWER

INPUT POWER	Single input of 11-36VDC (Opr), 24VDC (Nom); 36-75VDC (Opr), 48VDC (Nom); or single input 88 300VDC (Opr), 100-240VDC (Nom); or 85-264VAC (Opr) 50/60Hz, 100-240VAC (Nom)
POWER CONSUMPTION (TYP.)	5 Watts
OVERLOAD CURRENT PROTECTION	Present
REVERSE POLARITY PROTECTION	Present on terminal block

### PHYSICAL CHARACTERISTICS

ENCLOSURE	IP-40 Galvanized Steel
DIMENSIONS (W X D X H)	76.2(W) x 92.8(D) x 148.3(H)mm (3.0 x 3.65 x 5.84 inches)
WEIGHT (G)	~1000 g

### ENVIRONMENTAL

STORAGE TEMPERATURE	-40°C to +85°C (-40° to 185°F)
OPERATING TEMPERATURE	-40°C to +85°C (-40° to 185°F)
OPERATING HUMIDITY	5% to 95% Non-condensing

### REGULATORY APPROVALS

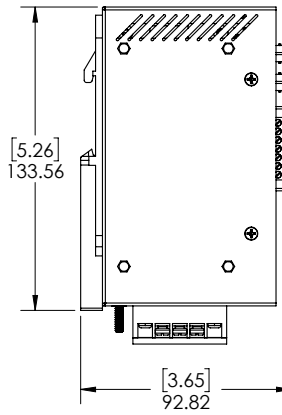
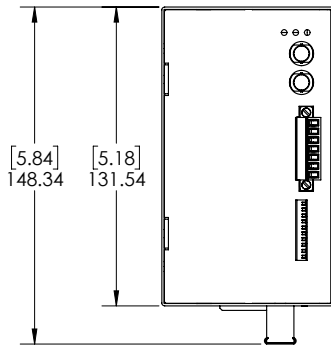
EMI	FCC Part 15, CISPR (EN55022) class A, EN50155 (EN50121-3-2, EN55011, EN50121-4)
EMS	EN61000-4-2 (ESD), EN61000-4-3 (RS), EN61000-4-4 (EFT), EN61000-4-5 (Surge), EN61000-4-6 (CS), EN61000-4-8, EN61000-4-11
SHOCK	IEC60068-2-27
FREE FALL	IEC60068-2-32
VIBRATION	IEC60068-2-6
SAFETY	EN60950-1

### WARRANTY

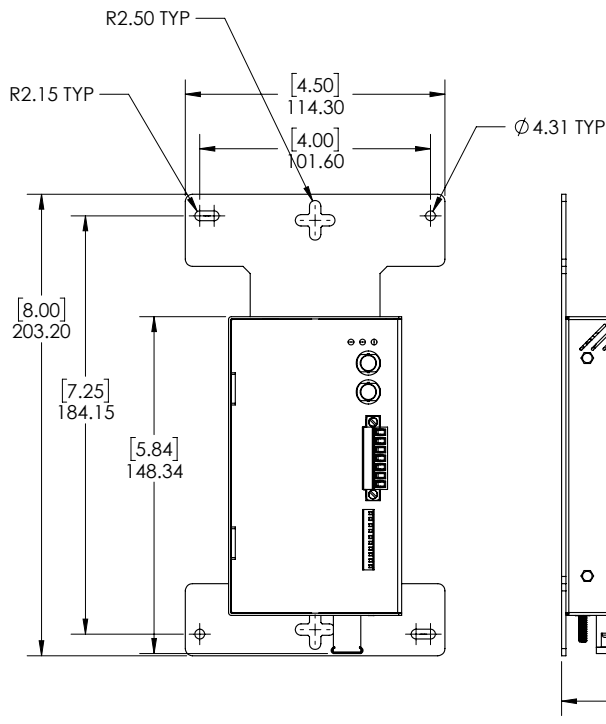
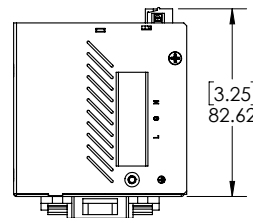
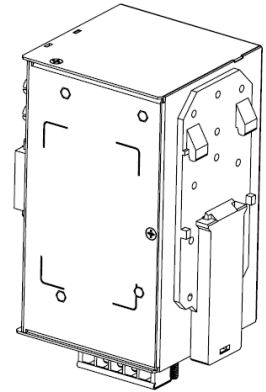
WARRANTY	5 years, (extendable option with additional terms)
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# Dimensions

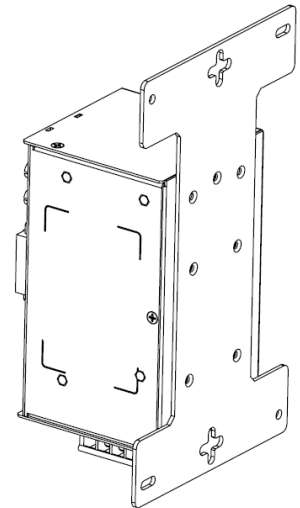
All dimensions are shown in millimeters [inches].



DINRAIL MOUNT



PANEL MOUNT



# Ordering Information

BASE	POWER SUPPLY 1	MOUNT	FIBER PORT 1	SERIAL PORT 1	MOD	DESCRIPTION
iSC2F	LV	P	1MMSTFL	1PL07		
iSC2F						Core assembly and packaging
	LV					Single input of 11-36VDC (Opr), 24VDC (Nom)
	MV					Single input of 36-75VDC (Opr), 48VDC (Nom)
	HV					Single input 88-300VDC (Opr), 100-240VDC (Nom); or 85-264VAC (Opr) 50/60Hz, 100-240VAC (Nom)
		D				DIN Rail Mounting
		P				Panel Mounting
		N				No Mounting Hardware
			1MMSTFL			1 X 10FL Multimode ST
				1PL07		1 X RS232/422/485 (7-pole terminal block)
					C1	Conformal Coating

Note: Single power supply supported. For dual power supply, call i5SCom for a quote.

## iSC2F Sample Order Code

iSC2F-LV-D-1MMSTFL-1PL07

Description: Single Port RS232/422/485 to Fiber Media Converter, (Power Supply 1), Single Input 11-36VDC, (Mount) DIN Rail Mounting, (Fiber Port 1) 1 X 10FL Multimode ST, (Serial Port 1) 1 X RS232/422/485 (7-pole terminal block).

The same unit, may be ordered with conformal coating by appending 'C1' to the order code, for example: iSC2F-LV-D-1MMSTFL-1PL07-C1

Description: Single Port RS232/422/485 to Fiber Media Converter, (Power Supply 1), Single input of 11-36VDC (Opr), 24VDC (Nom), (Mount) DIN Rail Mounting, (Fiber Port 1) 1 X 10FL Multimode ST, (Serial Port 1) 1 X RS232/422/485 (7-pole terminal block). This system will be conformal coated.



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