iS5 COMMUNICATIONS

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Data Sheet

iSC2F

Single Port RS-232/422/485 to Fiber Media Converter
IEC 61850-3 and IEEE 1613 Compliant

Features

- **Provides serial copper to 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**

- **Dual DC Input 9-36VDC or Dual Input 36-75VDC, Single Input 110-370VDC or 90-264VAC**

- **IP-40 Galvanized Steel Housing**

- **DIN-Rail mounting**

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Introduction

The iSC2F is a cost-effective single serial media converter solution for the conversion between serial RS232/RS485/RS422 interfaces and optical fiber. The iMC2F 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 from dual 9-36VDC or 36-75VDC power inputs to a single input of 110-370VDC or 90-264VAC, 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 Ω 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
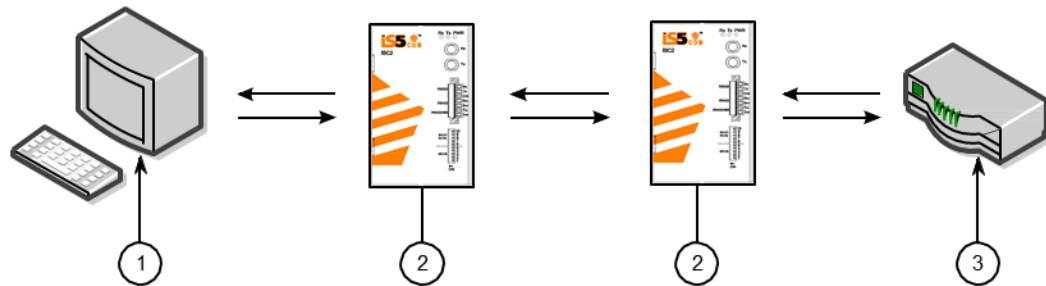- 1200-115200 baud supported

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.

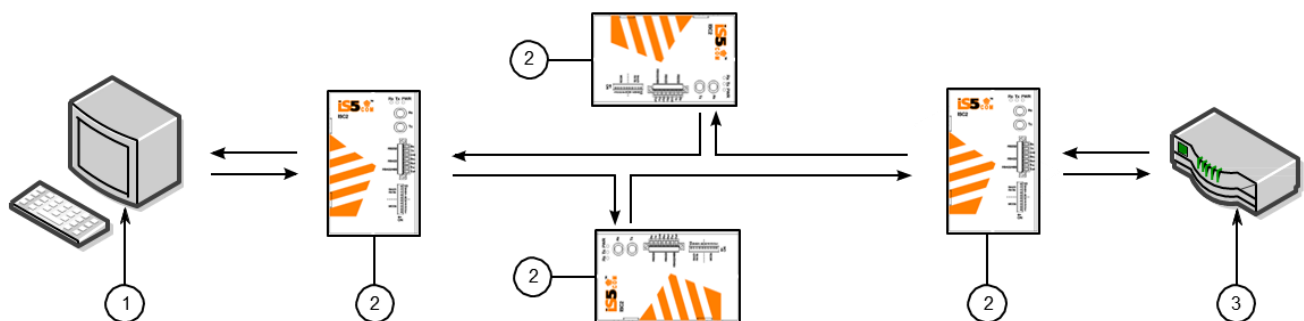# Serial-to-Fire Conversion—Point-to-Point

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

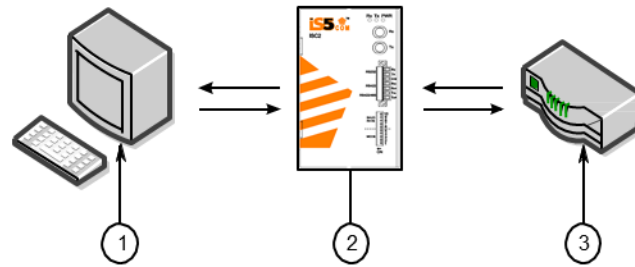Note that the distance between the two ISC2 devices should be less than 5 km (3.1 mi).

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**
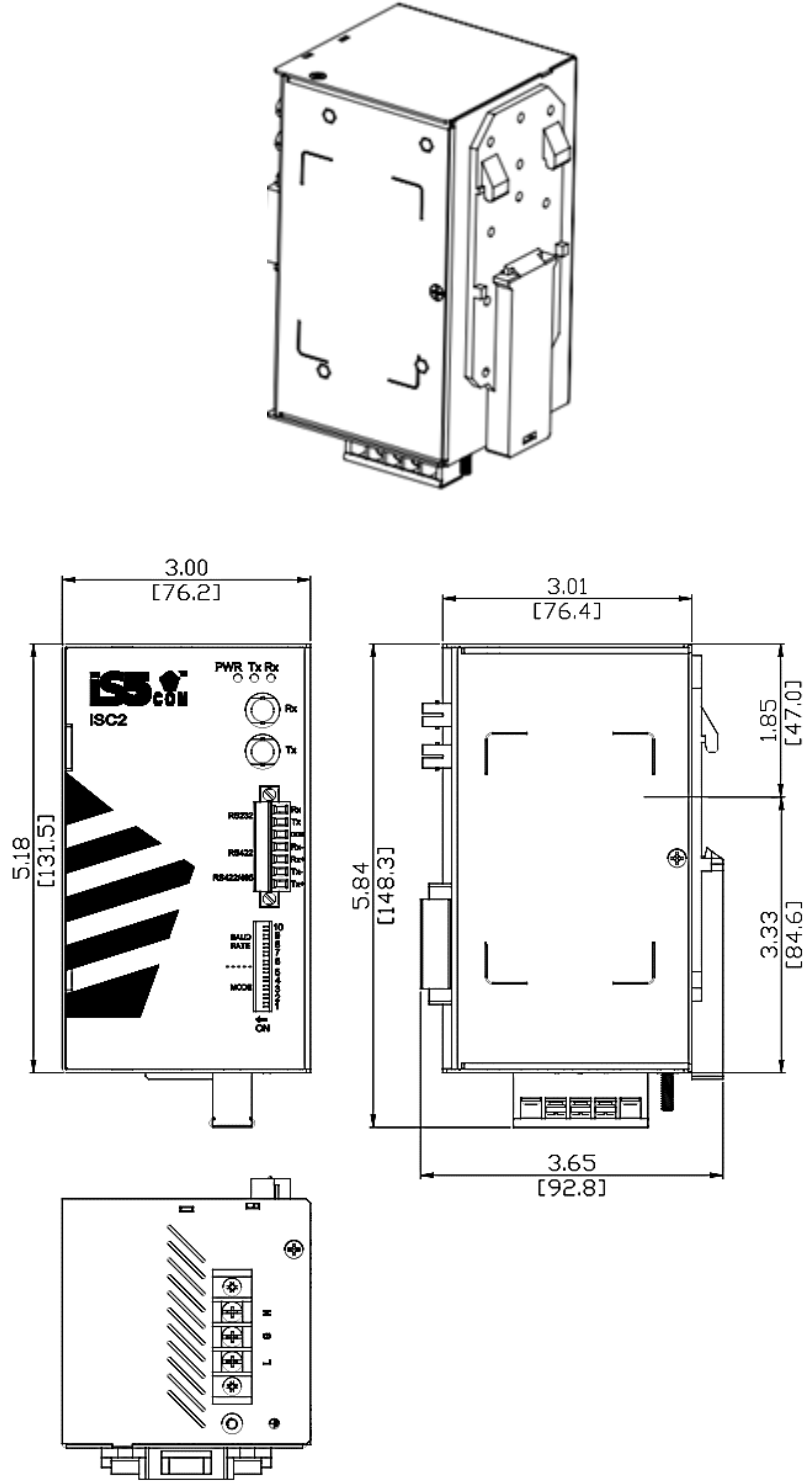2. **iSC2F**
3. **RS485 Device/ Network**

Specifications

Model Number	iSC2F
Physical Ports	
10M Fiber port	1
RS232/RS422/RS485	1 (2 for RS232 to RS485 conversion)
Power	
Input power	Dual DC Inputs of 9-36VDC or Dual Input 36-75VDC, or single Input 110-370VDC or 90-264VAC
Power consumption (Typ.)	5 Watts
Overload current protection	Present
Reverse polarity protection	Present on terminal block
Physical Characteristics	
Enclosure	IP-40 Galvanized Steel
Dimension (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

Dimensions

All dimensions are shown in inches.

Ordering Information

Base	Power Supply 1	Mount	Fiber Port 1	Serial Port 1	Conformal Coating	Description
iSC2F	LV	D	1MMSTFL	1PL07	C1	
iSC2F	|	|	|	|	|	Core assembly and packaging
	LV	|	|	|	|	Dual Input 9-36VDC
	MV	|	|	|	|	Dual Input 36-75VDC
	HV	|	|	|	|	Single Input 110-370VDC or 90-264VAC
		D	|	|	|	DIN Rail Mounting
			1MMSTFL	|	|	1 X 10FL Multimode ST
				1PL07		1 X RS232/422/485 (7-pole terminal block)
					C1	Conformal Coating

Example Order Code Description: **iSC2F-LV-D-1MMSTFL-1PL07-C1**
Single Port RS232/422/485 to Fiber Media Converter, (Power Supply 1) Dual Input 9-36VDC, (Mount) DIN Rail Mounting, (Fiber Port 1) 1 X 10FL Multimode ST, (Serial Port 1) 1 X RS232/422/485 (7-pole terminal block), C1 - added for conformal coating.