**iS5≋COMMUNICATIONS**

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# 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 9-36VDC, 36-75VDC, or single input110-370VDC or 90-264VAC
- 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 9-36VDC, 36-75VDC single 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.
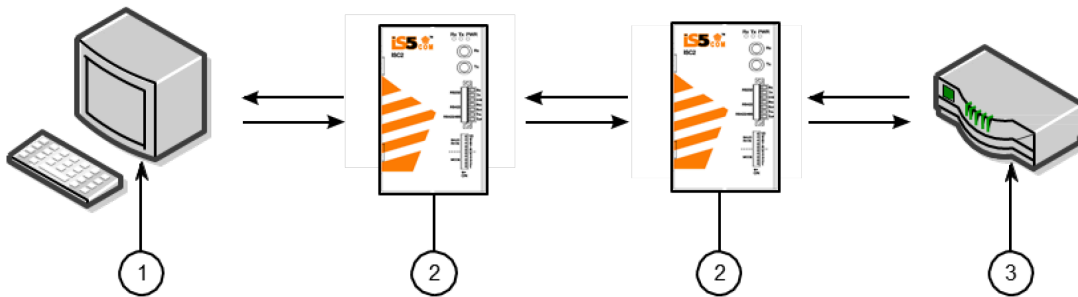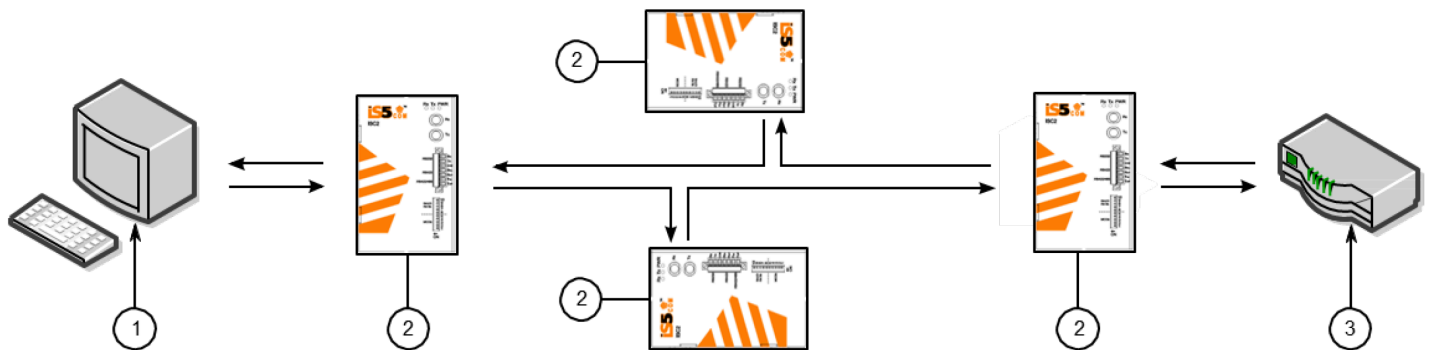
1.  **RS232 device**
2.  **iSC2F**
3.  **RS485 Device/ Network**

Note that the distance between the two ISC2 devices should be less than 5 km (3.1 mi).
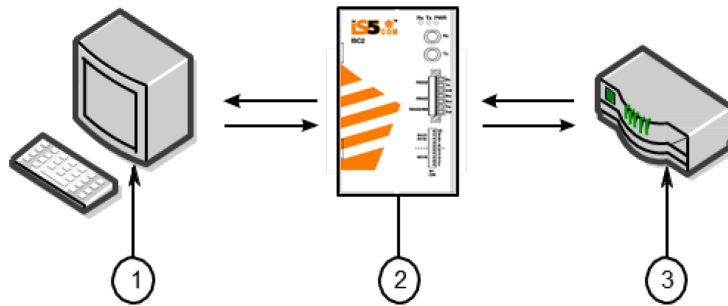
When a distance that is more than 5 km (3.1 mi) has to be supported, iSC2F must be used in Fiber Repeater mode. This mode supports extended distance between serial devices.



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

**RS232 to RS485/422 Topology**

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

# Specifications

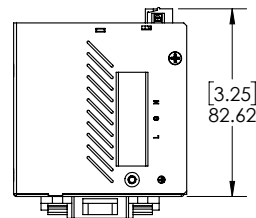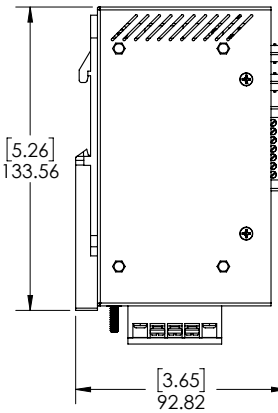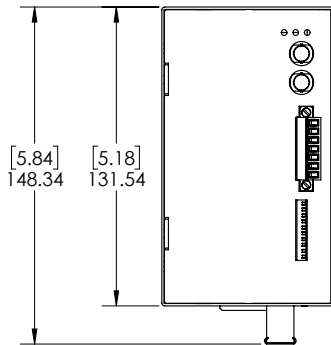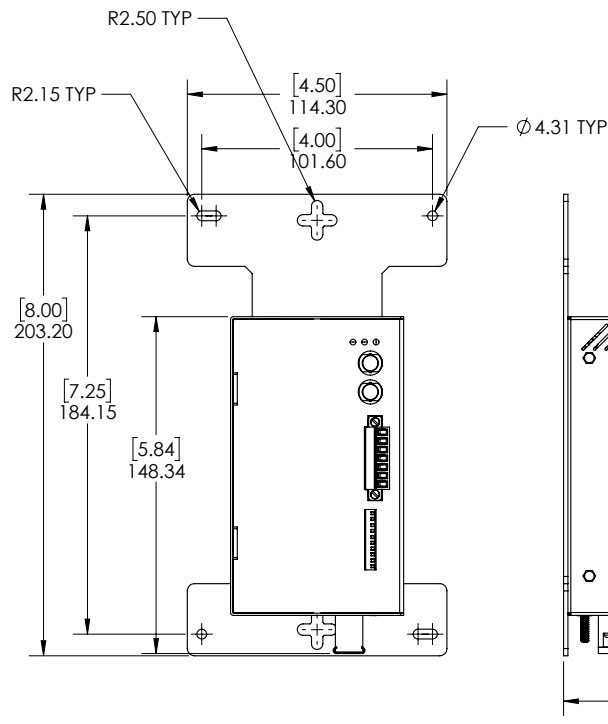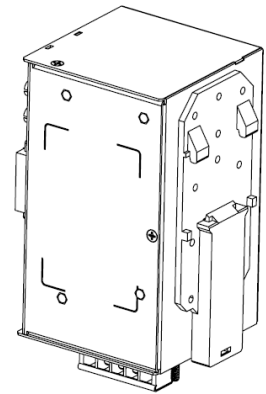| MODEL NUMBER | iSC2F |
|---|---|
| **PHYSICAL PORTS** | |
| 10M SERIAL FIBER PORT | 1 |
| RS232/RS422/RS485 | 1 (2 for RS232 to RS485 conversion) |
| **POWER** | |
| INPUT POWER | Single input of 9-36VDC, 36-75VDC, or single Input 110-370VDC or 90-264VAC |
| POWER CONSUMPTION (TYP.) | 5 Watts |
| OVERLOAD CURRENT PROTECTION | Present |
| REVERSE POLARITY PROTECTION | Present on terminal block |
| **PHYSICAL CHARACTERISTICS** | |
| ENCLOSURE | IP-40 Galvanized Steel |
| 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) |

# Dimensions

All dimensions are shown in millimeters [inches].



DINRAIL MOUNT

[5.84] 148.34
[5.18] 131.54

[5.26] 133.56

[3.65] 92.82

[3.25] 82.62

R2.50 TYP

R2.15 TYP

[4.50] 114.30

[4.00] 101.60

⌀ 4.31 TYP

PANEL MOUNT

[8.00] 203.20

[7.25] 184.15

[5.84] 148.34

[3.35] 85.12
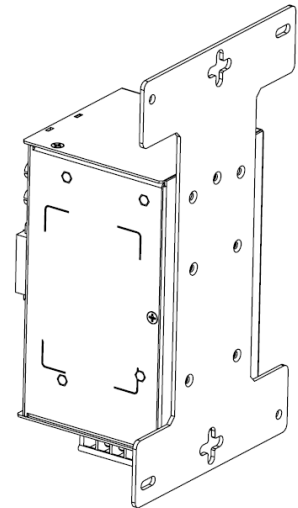
# Ordering Information

| 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 9-36VDC |
| | MV | \| | \| | \| | \| | Single Input 36-75VDC |
| | HV | \| | \| | \| | \| | Single Input 110-370VDC or 90-264VAC |
| | | 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 iS5Com 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 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).

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 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). This system will be conformal coated.

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