

# IFC-FDC

1x RS232/422/485 to 2-ports Fiber (SC/ST) Media Converter



- 2.5KV isolation for serial port (RS485/422/232)
- Supports fiber port several topology, cable redundancy, ring redundancy, daisy chain, point to point
- Auto Baud Rate, no need to set Baud Rate
- Adjustable pull high/low resistor and terminator for RS-422/485 transmission



The IFC-FDC converter is capable of selecting interface mode for connection to RS-232 (3 wire), RS-485 (2 wire, half duplex) or RS-422/485 (4 wire, full duplex) and features a three-way communication plus a second independent RS-232 communication channel. Additionally, the terminal block offers an alarm relay contact and two redundant DC power inputs. IFC-FDC is also available in two operating temperature ranges, a standard -10° to 60°C commercial temperature range and an extended -40° to 75°C range. With all these specifically designed features, IFC-FDC is a reliable and ideal solution for keeping your industrial automation applications running smoothly and continuously even in harsh environments. The product is protocol transparent that can be applied to RS485/422/232 networks, such as MODBUS to achieve reliable network (See Figure 2).

## Features

- Supports 2 fiber link
- Supports dual channel communication, including Triple-Way communication, and Two-Way communication
- Extend serial transmission distance up to 2km, 30km, 50km
- Redundant dual power inputs (12/24/48VDC)
- Protocol transparent, suitable for all serial (RS485/422/232) transmission protocol, such as Modbus...
- Baudrate up to 1024kbps for serial port
- Supports relay output for power or link failure warning
- Hardened housing with IP30 protection
- Fanless and DIN-Rail design for harsh industrial environment

## Specifications

<b>FieldBus Protocol</b>	Protocol transparent	Protocol applicable to all operations available on RS485/422/232, such as Modbus,...
<b>Data Flow</b>	Dual Channel Communication	Both of Triple-Way and Two-Way Communication Way (Figure 1)
<b>Optical Interface</b>	Connector	SC, ST
	Fiber Port	2 fiber ports
	Fiber Type	MM 2km, SM 30km, 50km Bidi 20KM
	Wavelength	MM 1310nm, SM 1310nm Bidi: Mode A : TX1310nm/RX1550nm Mode B : TX1550nm/RX1310nm
	Point to Point Transmission	Full duplex
	Ring Transmission	Full duplex
<b>Fiber port Topology</b>	Cable redundancy (Figure 3), ring redundancy (Figure 4), daisy chain (Figure 5), point to point (Figure 6)	
<b>Electrical Interface</b>	Serial Port Connector	RS-232 (DB9), RS-422/RS-485 (5 pin terminal block)
	RS-485 direction	RS-485 : 4, 2 wires, RS-422 : 4 wires
	Serial port Baudrate	Automatically detection
	Serial port Baudrate	50 to 1024kbps
	Serial port Baudrate	Auto baudrate, no need to set baudrate
	Serial port isolation	2.5KV isolation for serial signals
		EMC/noise isolation, to reduce mutual interference between serial port device
	Pull high resistor	Selected by 10 position rotary switch
	Pull low resistor	Selected by 10 position rotary switch
	120 ohm terminator	Built-in 120 ohm terminator (Selected by Dip Switch)
<b>Environmental</b>	Operating Temperature	-10 ~ 60°C (IFC-FDC, ) -40 ~ 75°C (IFC-FDC-E)
	Storage Temperature	-40 ~ 85°C
	Humidity	5 ~ 95% RH

<b>LED Indications</b>	PWR1, PWR2, Alarm, Master, TD, RD, Fiber Link, Fiber 2 Link, Ring	
<b>Alarm Relay</b>	Alarm exists for power, fiber link or ring protection Relay output with carry capacity 1A @ 24VDC	
<b>Power</b>	Power Input	Redundant Dual Power 12, 24, 48 VDC (9.6 ~ 58VDC)
	Power Consumption	6W
	Power Reversal Protection	Yes
	Over Current Protection : Signal Short Together Protected	
	Terminal Block for Power and Alarm : Terminal Block : V1+, V1-, V2+, V2-, Alarm NC, Alarm COM, Alarm NO	
<b>Mechanical</b>	Water & Dust Proof	IP30 Protection, Fanless
	Dimensions	106 x 38.6 x 142.1mm (D x W x H)
	Mounting	DIN-Rail, or wall mounting (Optional)
	Weight	0.64kg
<b>Certification</b>	EMC	CE
	EMI	FCC Part 15 Subpart B Class A, CE
	EMS	EN61000-4-2 ESD Level 3
	(Electromagnetic Susceptibility)	EN61000-4-3 RS Level 3
	Protection Level	EN61000-4-4 EFT Level 3
		EN61000-4-5 Surge Level 3
		EN61000-4-6 CS Level 3
	Free Fall	IEC 60068-2-32
	Vibration	IEC 60068-2-6
	Shock	IEC 60068-2-27
<b>MTBF</b>	739,886 Hours (MIL-HDBK-217)	
<b>Warranty</b>	5 years	

## Application & Topology

Figure 1 : Dual Channel Data Flow (IFC-FDC)

Channel 1 : Triple Way

Channel 2 : Two Way

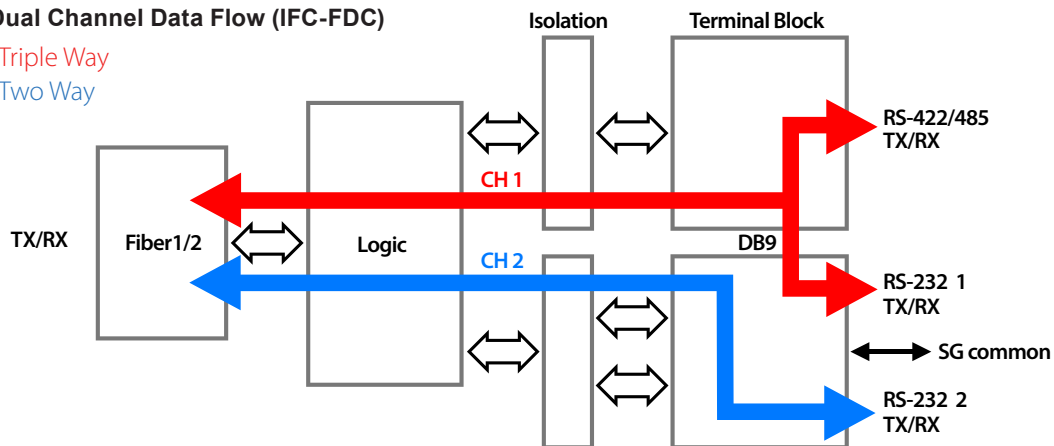


Figure 2 : Application for Modbus Network

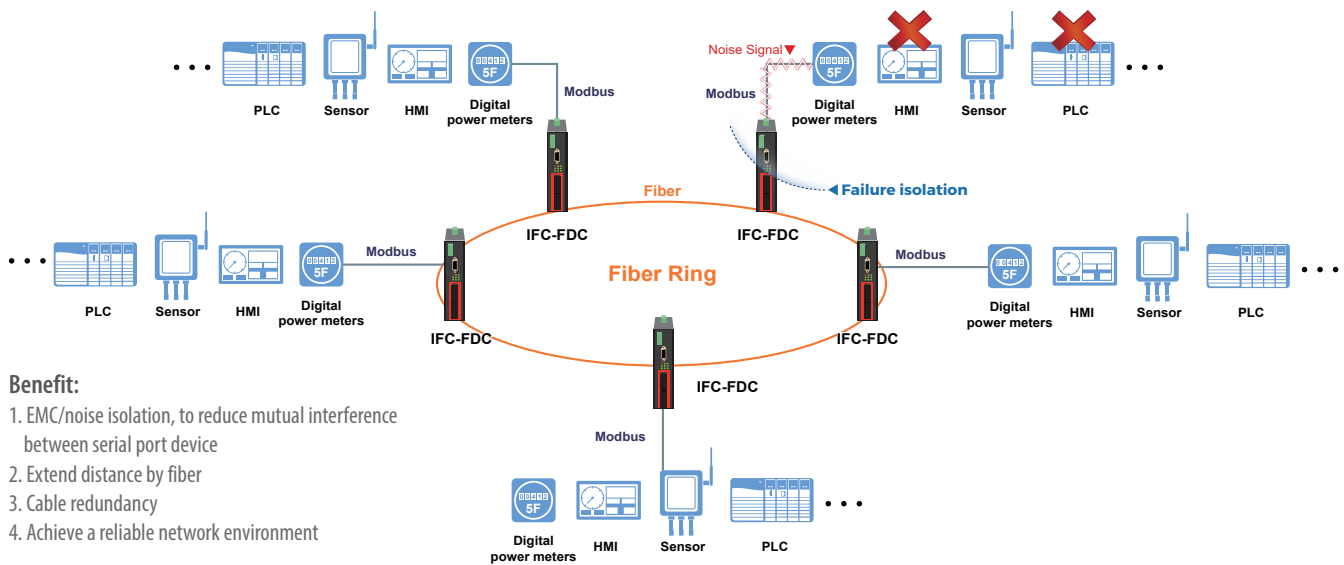


Figure 3 : Redundant Fiber Point to Point topology & application

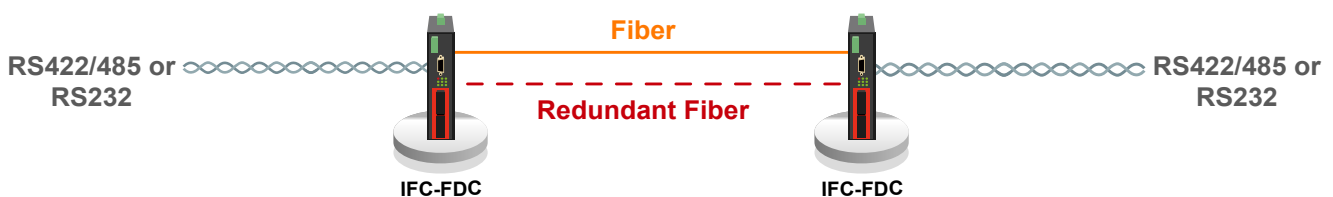


Figure 4 : Fiber Ring Redundancy topology & application

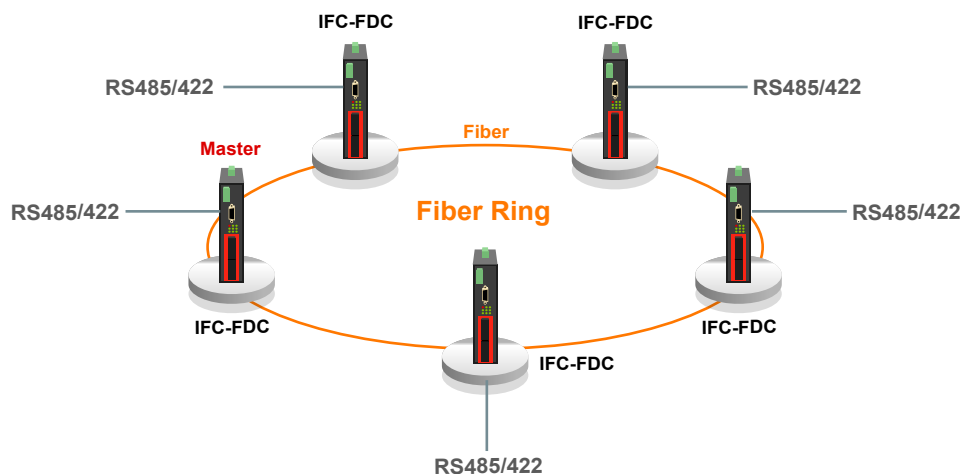


Figure 5 : Fiber Daisy Chain topology & application

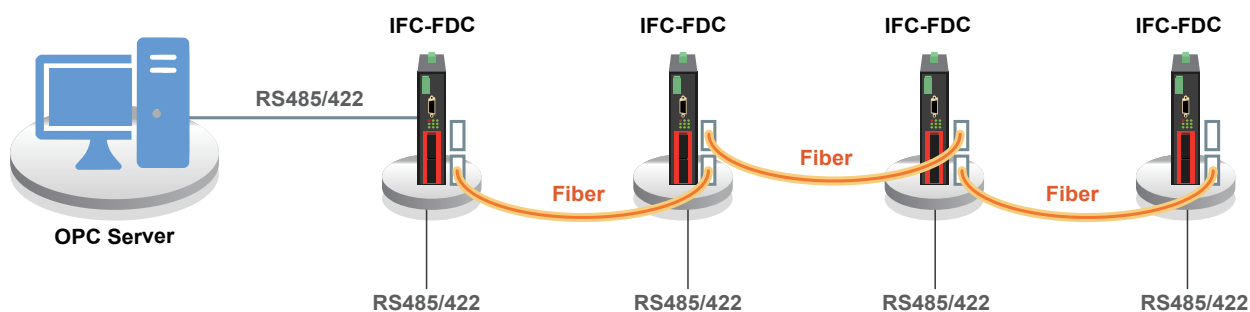
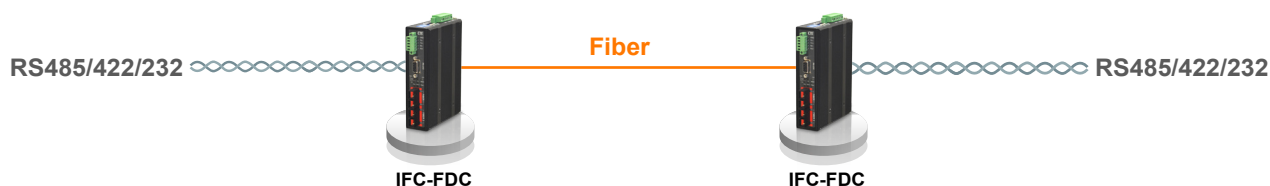
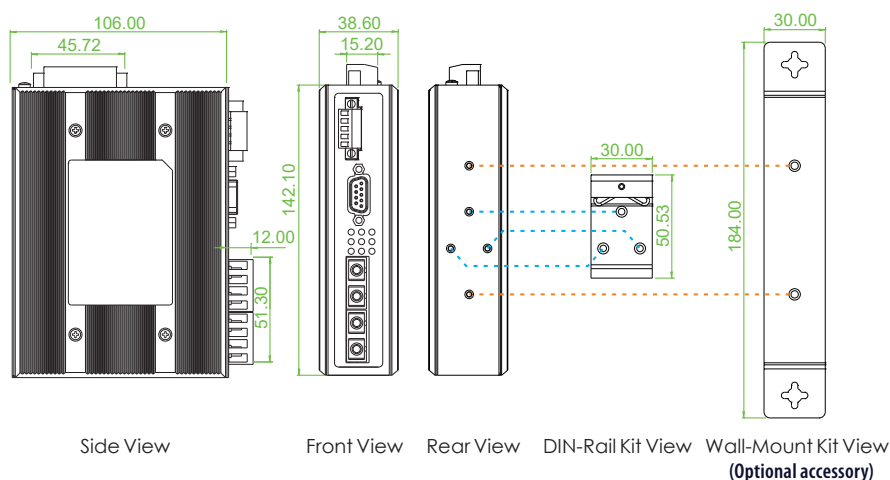


Figure 6 : Fiber Point to Point topology & application



## Dimensions



## Ordering Information

Model Name	Dual Channel	Serial (ModBus or others)			Fiber	Power Input	Certification		Operating Temperature
		RS232	RS422/485	Isolation 2.5KV			CE	FCC	
IFC-FDC	V	2	1	V	2	12/24/48VDC	V	V	-10~60°C
IFC-FDC-E	V	2	1	V	2	12/24/48VDC	V	V	-40~75°C

Connector Type	Connectivity Distance		
SC, ST	002: M/M 2km	030: S/M 30km	050: S/M 50km
	020AB: 20km Bidi (20km 1x mode A + 1x Mode B)		
	Mode A: TX 1310nm/RX1550nm      Mode B: TX 1550nm/RX1310nm		

### Package List

- IFC-FDC device
- Terminal block
- Din Rail with screws

## Optional Accessories

### Wall Mount Kit

IND-WMK01	Wall Mount kit for Industrial product, 184 x 30mm
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### Industrial Power Supply

MDR-20-24	Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 24VDC, 24W, -20 ~ +70°C
MDR-40-48	Industrial Power, Input 85 ~ 264VAC/120 ~ 370VDC, Output 48VDC, 40W, -20 ~ +70°C