



## IFC-FDC-PRO

PROFIBUS to Daisy Chain Fiber Converter



These products are PROFIBUS to fiber optic converters which secure PROFIBUS data transmission via fiber optical cabling for extending distance and isolating EMC/noise to reduce mutual interference between PROFIBUS devices.

These products are protocol transparent, can be applied to the PROFIBUS, and also can be applied to other networks using RS485 interfaces (See Figure 1).

These converters are capable of selecting interface modes for connection to RS-485 2-wire half duplex. Additionally, the terminal block offers an alarm relay contact and two redundant DC power inputs. IFC Series converters are 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, the series is reliable and an ideal solution for keeping your industrial automation applications running smoothly and continuously even in harsh environments.

### Features

- Supports 2x Fiber and 1x RS485
- Extend serial transmission distance up to 500m, 2km, 20km
- Supports several fiber port topology , cable redundancy (Figure 3), ring redundancy (Figure 4), daisy chain (Figure 5), point to point (IFC-FDC-PRO)
- Redundant dual power inputs (12/24/48VDC)
- Protocol transparent. These products can be applied to the PROFIBUS, but also can be applied to other network using RS485 interface
- Baudrate 9.6K up to 12Mbps
- Provides 2 Baudrate mode: Manual mode, or Auto mode (Baudrate autosense)
- 2.5KVrms isolation for serial port
- CE, FCC, heavy industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified
- 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	PROFIBUS and all operations available on RS485
<b>Problem isolation</b>	Isolate EMC/noise to reduce mutual interference between PROFIBUS device (Figure 1) Isolate the PROFIBUS side of the failure, to avoid the impact of the other side (See Figure 2 )	
<b>Fiber Port Interface</b>	Connector	SC, ST
	Fiber Port	2 fiber ports
	Fiber Type	M/M 500M, M/M 2KM, S/M 20KM Bidi 20KM
	Wavelength	M/M 850nm or 1310nm, S/M 1310nm Bidi: Mode A : TX1310nm/RX1550nm Mode B : TX1550nm/RX1310nm
<b>Fiber port Topology</b>	Cable redundancy (Figure 3) Ring redundancy (Figure 4) Daisy chain (Figure 5) Point to point	
<b>Serial port Interface</b>	Serial Port Connector	DB9 Female
	RS-485 direction	RS-485 : 2 wires, Half duplex Automatically detection
	Serial port Baudrate	9.6K to 12Mbps Auto mode : Auto sense Baudrate, no need to set Baudrate Manual Mode : Baudrate Set by DIP SW
	Serial port isolation	2.5KVrms isolation for serial signals EMC/noise isolation, to reduce mutual interference between serial port device
<b>Environmental</b>	Operating Temperature	-10 ~ 60°C (IFC-FDC-PRO) -40 ~ 75°C (IFC-FDC-PRO-E)
	Storage Temperature	-40 ~ 85°C
	Humidity	5 ~ 95% RH
<b>LED Indications</b>	PWR1, PWR2, Alarm, Master, TD, RD, Fiber 1 Link, Fiber 2 Link, Ring, System	
<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 ~ 60VDC)
	Power Consumption	<6W
	Power Reversal Protection	Yes
	Over Current Protection: Signal Short Together Protected	
<b>Terminal Block</b>	For Power and Alarm V1+, V1-, V2+, V2-, Alarm NC, Alarm COM	
<b>Mechanical</b>	Water & Dust Proof	IP30 Protection, Fanless
	Dimensions	85 x 30 x 115mm (D x W x H)
	Mounting	DIN-Rail, or wall mounting (Optional)
	Weight	305g

Certification	
EMC	CE (EN55024, EN55032)
EMI	FCC Part 15 Subpart B Class A, CE (EN55032)
Immunity for Heavy Industrial Environment	EN61000-6-2
Emission for Heavy Industrial Environment	EN61000-6-4

EMS (Electromagnetic Susceptibility) Protection Level	EN61000-4-2 ESD Level 3 EN61000-4-3 RS Level 3 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
Green	RoHS
MTBF	924,615 Hours (MIL-HDBK-217)
Warranty	5 years

## Application & Topology (IFC-FDC-PRO)

Figure 1 : Application for PROFIBUS Network

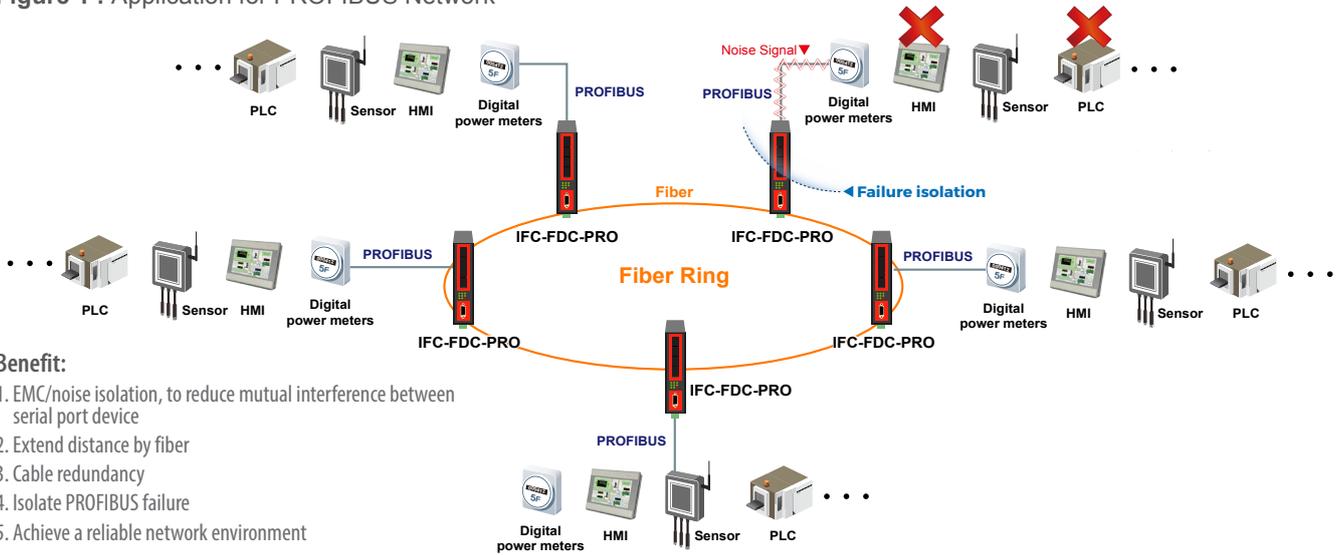


Figure 2 : Isolate PROFIBUS Failure

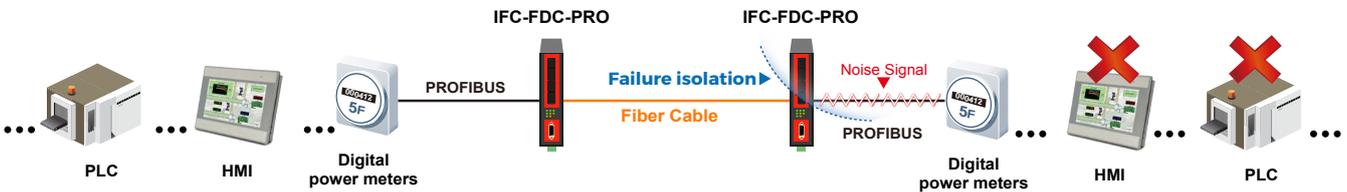


Figure 3 : Fiber Cable Redundancy topology & application

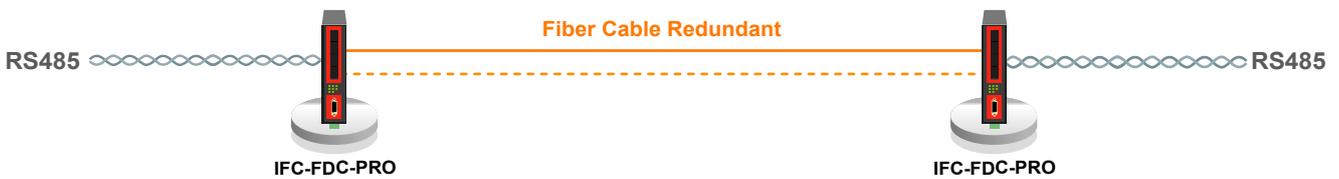
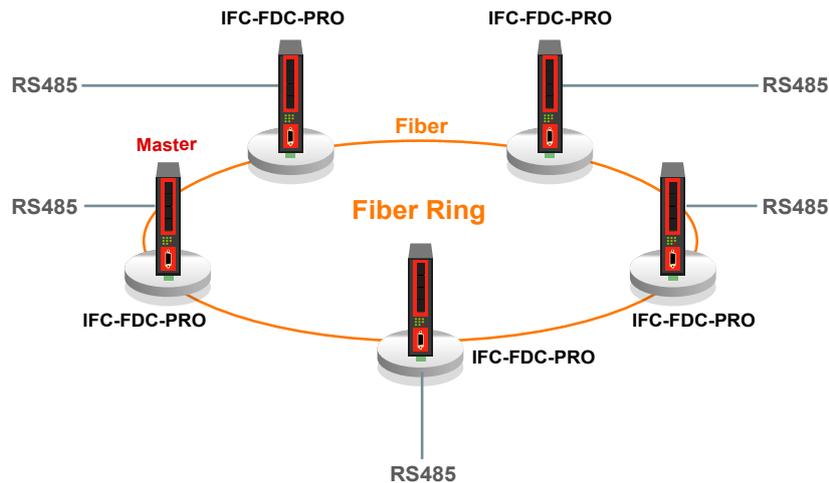
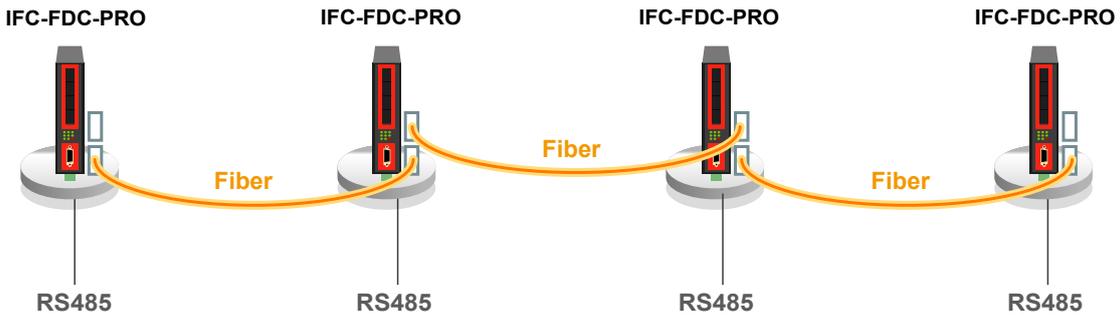


Figure 4 : Fiber Ring Redundancy topology & application

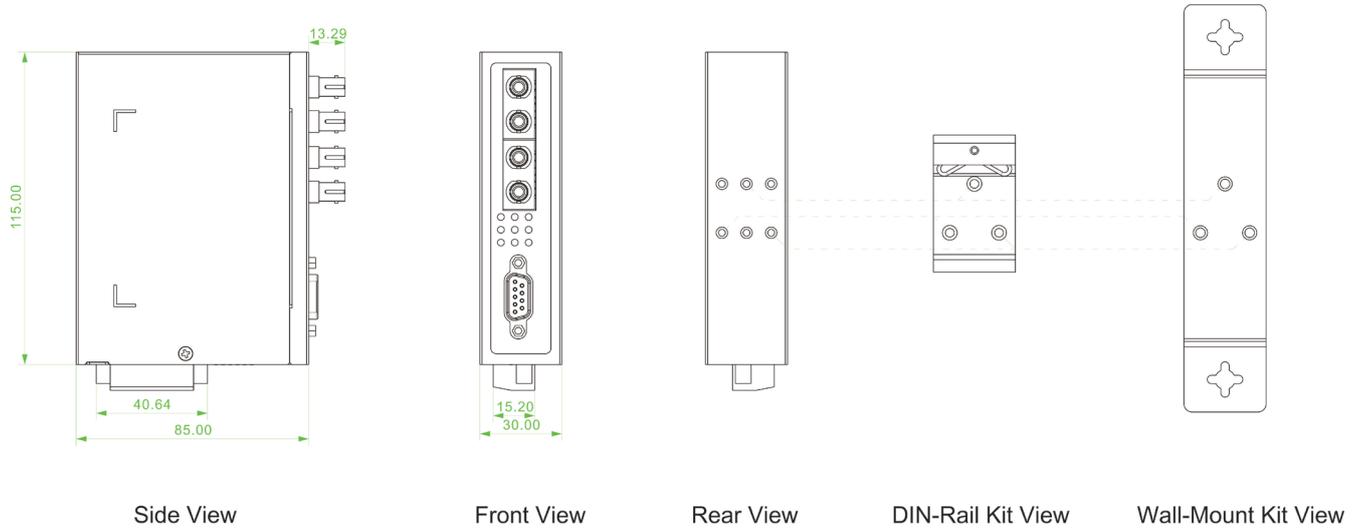


**Figure 5 : Fiber Daisy Chain topology & application**



**Dimensions**

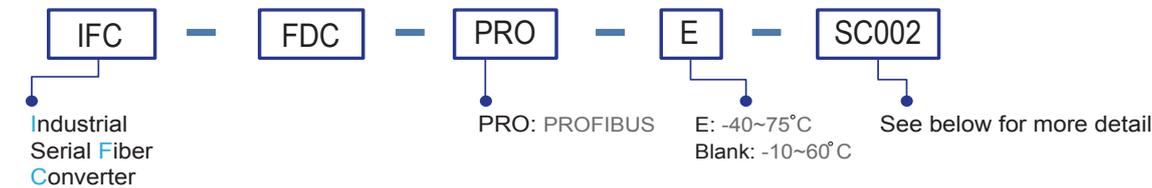
► IFC-FDC-PRO



**Ordering Information**

Model Name	Serial (Profibus)		Fiber	Power Input	Certification			Operating Temperature
	RS422/485	Isolation 2.5KV	SC/ST	Redundant	EN61000-6-2 EN61000-6-4	CE	FCC	
IFC-FDC-PRO	1	V	2	12/24/48VDC	V	V	V	-10~60°C
IFC-FDC-PRO-E	1	V	2	12/24/48VDC	V	V	V	-40~75°C

**Model Naming Rule**



Connector Type	Connectivity Distance
SC, ST	001: M/M 500meter 002: M/M 2km 020: S/M 20km 020AB: 20km Bidi (20km 1x mode A + 1x Mode B) Mode A: TX 1310nm/RX1550nm Mode B: TX 1550nm/RX1310nm



**Package List**

- One device of the series
- Din Rail with screws
- Quick installation guide
- Terminal block

**Optional Accessories**

**Wall Mount kit Accessories**

IND-WMK03	Wall Mount kit for Industrial product (Compact, 150 x 30mm)
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