IFC Series converters are capable of selecting interface modes for connection to RS-232 (3 wire), RS-485 (2 wire, half duplex) or RS-422/485 (4 wire, full duplex) and feature 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 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, IFC Series are reliable and ideal solutions for keeping your industrial automation applications running smoothly and continuously even in harsh environments.

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### Features

- Supports 2 fiber link (IFC-FDC)
- Supports 1 fiber link (IFC-Serial)
- Supports dual channel communication, including Triple-Way communication, and Two-Way communication
- Extend serial transmission distance up to 2km, 30km, 60km
- Supports several topology, cable redundancy(Figure 2), ring redundancy (Figure 3), daisy chain (Figure 4), point to point (IFC-FDC)
- Supports point to point (Figure 6) (IFC-Serial)
- Redundant dual power inputs (12/24/48VDC)
- Supports RS-232, RS-422, RS-485(2/4 wire) transmission to dual fiber connections
- Enhanced serial baudrate up to 1024kbps
- 2.5KV isolation for serial signal
- Supports relay output for power or link failure warning
- Hardened housing with IP30 protection
- Fanless and DIN-Rail design for harsh industrial environment
- Adjustable pull high/low resistor and terminator for RS-422/485 transmission

### Specifications

**Data Flow**
- Dual Channel Communication
- Both of Triple-Way and Two-Way Communication Way (Figure 1 or 6)

**Optical Interface**
- Connector: SC, ST
- Fiber Optical rate: 36.864Mbps
- Fiber Port: 2 fiber ports (IFC-FDC) with WDM option 1 fiber port (IFC-Serial)
- Fiber Type: MM 2km, SM 30km, 60km
- Bidi: 20KM
- Wavelength: MM 1310nm, SM 1310
- Bidi: Mode A: TX1310nm/RX1550nm
- Mode B: TX1550nm/RX1310nm
- Point to Point Transmission: Full duplex
- Ring Transmission: Full duplex, self-healing operation

**Optical Topology**
- Cable redundancy(Figure 2), ring redundancy(Figure 3), daisy chain(Figure 4), point to point (IFC-FDC)
- Point to point(Figure 6) (IFC-Serial)

**Electrical Interface**
- Serial Port Connector: RS-232(3DB9), RS-422/RS-485(5 pin terminal block)
- RS-485: 4, 2 wires, RS-422: 4 wires
- RS-485 direction: Automatically detection
- Copper Baud rate: 50 up to 1024Kbps
- Serial Isolation: 2.5KV for serial signals
- Surge Protection: 8KV for serial signals
- Pull High: Selected by 10 position rotary switch
- Pull Low: Selected by 10 position rotary switch
- 120 ohm terminator: Built-in 120 ohm terminator (Option by Dip Switch)

**Environmental**
- Operating Temperature: -10 ~ 60°C (IFC-FDC, IFC-Serial)
- Storage Temperature: -40 ~ 85°C
- Humidity: 5 ~ 95% RH

**LED Indications**
- PWR1, PWR2, Alarm, Master, TD, RD, Fiber Link, Fiber2 Link (IFC-FDC only)
- Ringg

**Power**
- Power Input: Redundant Dual Power 12, 24, 48 VDC (96 ~ 58VDC)
- Power Consumption: 6W (IFC-FDC), 5W (IFC-Serial)
- Power Reversal Protection: Yes
- Over Current Protection: Signal Short Together Protected
- Terminal Block for Power and Alarm: V1+, V1-, V2+, V2-, Alarm NC, Alarm COM, Alarm NO

**Mechanical**
- Water & Dust Proof: IP30 Protection, Fanless
- Dimensions: 106 x 38.6 x 142.1mm (D x W x H)
- Mounting: DIN-Rail, wall mount
- Weight: 0.64kg (IFC-FDC), 0.63kg (IFC-Serial)

**Certification**
- Safety: UL60950-1
- EMC: CE, FCC
- EMI: EN55022 Class A
- EMS: EN61000-6-4 – Emission for heavy industrial environment
- EN61000-6-2 – Immunity for heavy industrial environment
- 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 610168-2-3
- Shock: IEC 60068-2-27
- Green: RoHS
- MTBF: 687,418 Hrs (IFC-FDC), 797,101 Hrs (IFC-Serial)
- MIL-HDBK-217 (MIL-HDBK-217)
Application & Topology (IFC-FDC)

Figure 1: Dual Channel Data Flow

Channel 1: Triple Way
Channel 2: Two Way

Figure 2: Cable Redundancy Application

Figure 3: Ring Redundancy Application

Figure 4: Daisy Chain Application
Industrial Serial Fiber Converter

**Application & Topology (IFC-Serial)**

**Figure 5**: Dual Channel Data Flow

Channel 1: Triple Way  
Channel 2: Two Way

**Figure 6**: Point to Point

**Dimensions**

**IFC-FDC**

![Dimensions Diagram](image)

**IFC-Serial**

![Dimensions Diagram](image)
# Ordering Information

<table>
<thead>
<tr>
<th>Model Name</th>
<th>Dual Channel</th>
<th>Serial</th>
<th>Fiber</th>
<th>Certification</th>
<th>Operating Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>IFC-FDC</td>
<td>V</td>
<td>2</td>
<td>1</td>
<td>V</td>
<td>2 V V V V -10~60 °C</td>
</tr>
<tr>
<td>IFC-FDC-E</td>
<td>V</td>
<td>2</td>
<td>1</td>
<td>V</td>
<td>2 V V V V -40~75 °C</td>
</tr>
<tr>
<td>IFC-Serial</td>
<td>V</td>
<td>2</td>
<td>1</td>
<td>V</td>
<td>1 V V V V -10~60 °C</td>
</tr>
<tr>
<td>IFC-Serial-E</td>
<td>V</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>V V V V V -40~75 °C</td>
</tr>
</tbody>
</table>

## Model Naming Rule

- **IFC** - Serial Fiber Converter
- **FDC** - Serial
- **E** - E: -40~75°C

**Example:** IFC – FDC – E – SC002

**Package List**

- One device of the series
- Quickly installation guide
- Din Rail with screws
- Wall mount bracket with screws
- Terminal block
- DC Power JACK adapter cable