# IFC-BT40



### 4 Channel Binary Transducer, 4 binary input, 4 high power MSR Relay output, fiber transmission

- >> 4 Binary Input
- > 4 MSR High Power Relay Output, Maximum Breaking Capacity 2000VAC Load
- > M/M 2km, S/M 30km, or BiDi 20km Single Fiber for Transmit
- > EN61000-6-2, EN61000-6-4, CE and FCC Certified







The IFC-FDC converter is a 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 solutions 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.

#### **Features**

- 4 isolated binary input (BI-1, BI-2, BI-3, BI-4)
- Selectable binary input threshold level by DIP Switch (18V or 70V)
- Maximum 2.5ma input current for binary input channel
- 4 MSR contact relay output (K1, K2, K3, K4), maximum breaking capacity 2000VA for AC load, 50~280W for DC resistive load, or 30W for
- Supports multi mode fiber 2KM or single mode 30KM fiber for transmit distances
- Supports duplex fiber, or single fiber BiDi to save cabling
- AC or DC wide range power input (60~300VDC or 60~264VAC)
- Removable terminal block connector for Power input, Alarm, Binary input and MSR Relay output
- CE, FCC, heavy industrial grade EMS, EMI, EN61000-6-2, EN61000-6-4 certified

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- Supports relay output for power or failure warning
- Hardened housing with IP40 protection
- Fanless and DIN-Rail design for harsh industrial environment

#### **Specifications Binary Input** 4x channel Binary Input (BI-1, BI-2, BI-3, BI-4) Binary input threshold level select by DIP Switch, 18V or 70V threshold Maximum input current 2.5ma per channel Channel: 4xMSR contact relay (K1, K2, K3, K4) **Contact Relay Output** Contact rated voltage: 250VAC Contact maximum switching voltage: 400VAC Contact rated current: 8A AC breaking capacity: Max 2000VA DC resistive load breaking capacity: max. 50~280W (see below diagram for detail) DC inductive load breaking capacity: max. 30W @L/R=50ms (see below diagram for detail) MSR Relay responds time: 10/5ms max. (Operate/Release) Max. DC Load Breaking Capacity 200 DC Voltage [VDC] resistive load 50 40 30

# **4 channel Binary Transducer**

Connector   Conn		T Glialille	I Diliary Iransuucei		
Support   Sup	Fiber Transmission	Optional distance: 2KM (M/M) 30KM (S/M), 20KM (Bidi) Fiber cable M/M: Dual fiber 50/125um, 62.5/125um S/M: Dual fiber 9/125um, 10/125um			
SW2: BL3, BL4 threshold SW2: Loopback test   SW2: Loopback test   SW2: Loopback test   Storage Temperature   -40 ~ 75°C   Storage Temperature   -40 ~ 85°C   Humidity   5 ~ 95% RH		Support for Binary input, MSR Relay output, Power input and Alarm			
Storage Temperature	DIP Switch	SW2: BI-3, BI-4 threshold SW3: Debounce			
LED Indications   Pump   Prover on SYS (Green): Normal operation   LNK (Green): Phorer on SYS (Green): Normal operation   LNK (Green): Phorer in SYS (Green): Normal operation   LNK (Green): Alarm Relay   Prover   Pro	Environmental	Operating Temperature	-40 ~ 75°C		
LED Indications		Storage Temperature	-40 ~ 85°C		
SYS Green): Normal operation   LNK (Green): Normal operation   LNK (Green): Normal operation   LNK (Green): Normal operation   B1-B1-4 (Green): Active   K-1-K-4 (Green): Active   K-1-K-4 (Green): Active   Alarm exists for power, fiber link, Relay output with carry capacity 1A @ 24VDC		Humidity	5 ~ 95% RH		
Power   Pow		PWR (Green): Power on SYS (Green): Normal operation LNK (Green): Fiber link Test / Alarm: ON: Link down, system loss or Power Error, Flash: Local loopback test, OFF: Normal operation BI-1~BI-4 (Green): Active K-1~K-4 (Green): Active			
Power Consumption   3.6W	Alarm Relay	Alarm exists for power, fiber link, Relay output with carry capacity 1A @ 24VDC			
Power Reversal Protection   Supported for power input	Power	Power Input	AC or DC wide range input power 60~300VDC or 60~264VAC input range		
Mechanical         Removable terminal block connector for power input           Mechanical         Water & Dust Proof         IP40 Protection, Fanless           Dimensions         106 x 62.5 x 135mm (Dx Wx H)           Mounting         DIN-Rail or wall mounting (Optional)           Weight         815g           EMC         CE (EN55032, EN55035)           FM         FCC Part 15 Subpart B Class A, CE           Immunity for Heavy Industrial Environment         EN61000-6-2           Emission for Heavy Industrial Environment         EN61000-6-4           Emission for Heavy Industrial Environment         EN61000-4-2 ESD Level 3           (Electromagnetic Susceptibility Protection Level         EN61000-4-2 ESD Level 3           EN61000-4-3 RS Level 3         EN61000-4-2 ESD Level 3           EN61000-4-5 Surge Level 3         EN61000-4-5 Surge Level 3           EN61000-4-5 Surge Level 3         EN61000-4-5 Surge Level 3           EN61000-4-5 Surge Level 3         EN61000-4-5 Surge Level 3           EN61000-4-5 CS Level 3         EN61000-4-5 Surge Level 3           EN61000-4-5 Surge Level 3 <th></th> <th>Power Consumption</th> <th>3.6W</th>		Power Consumption	3.6W		
Mechanical Dimensions         IP40 Protection, Fanless           106 x 62.5 x 135mm (Dx Wx H)           Mounting         DIN-Rail or wall mounting (Optional)           Weight         815g           Emit EMI FCC Part 15 Subpart B Class A, CE         EC (EN55032, EN55035)           Immunity for Heavindustrial Environment Emission for Heavy Industrial Environment Susceptibility Protection Level         EN61000-6-2           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         EN61000-4-5 Surge Level 3           EN61000-4-6 CS Level 3         EN61000-4-5 Surge Level 3           EVIbration Efc 60068-2-31         EC 60068-2-31           Vibration Efc 60068-2-6         EC 60068-2-6           Shock Nore (MIL+HDBK-217)         ENGHS		Power Reversal Protection Supported for power input			
Dimensions   106 x 62.5 x 135mm (Dx Wx H)     Mounting   DiN-Rail or wall mounting (Optional)     Weight   815g		Removable terminal block connector for power input			
Mounting   DIN-Rail or wall mounting (Optional)   Weight   815g    Certification	Mechanical	Water & Dust Proof	IP40 Protection, Fanless		
Weight 815g           Certification           EMC         CE (EN55032, EN55035)           EMI         FCC Part 15 Subpart B Class A, CE           Immunity for Heavy Industrial Environment         EN61000-6-2           Emission for Heavy Industrial Environment         EN61000-6-4           Emission for Heavy Industrial Environment         EN61000-4-2 ESD Level 3           (Electromagnetic Susceptibility) Protection Level         EN61000-4-3 RS Level 3           EN61000-4-4 EFT Level 3         EN61000-4-5 Surge Level 3           EN61000-4-5 Surge Level 3         EN61000-4-6 CS Level 3           Free Fall         IEC 60068-2-31           Vibration         IEC 60068-2-6           Shock         IEC 60068-2-27           Green         RoHS           MTBF         165,680 Hours (MIL-HDBK-217)		Dimensions	· · · · · · · · · · · · · · · · · · ·		
Certification           EMC         CE (EN55032, EN55035)           EMI         FCC Part 15 Subpart B Class A, CE           Immunity for Heavy Industrial Environment         EN61000-6-2           Emission for Heavy Industrial Environment         EN61000-4-2           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         EN61000-4-5 Surge Level 3           EN61000-4-6 CS Level 3         EN66000-4-6 CS Level 3           Free Fall         IEC 60068-2-31           Vibration         IEC 60068-2-6           Shock         IEC 60068-2-27           Green         RoHS           MTBF         165,680 Hours (MIL-HDBK-217)		Mounting	DIN-Rail or wall mounting (Optional)		
EMC         CE (EN55032, EN55035)           EMI         FCC Part 15 Subpart B Class A, CE           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 60068-2-31           Vibration         IEC 60068-2-6           Shock         IEC 60068-2-27           Green         RoHS           MTBF         165,680 Hours (MIL-HDBK-217)		Weight	815g		
Mathematical Environment   EN61000-6-2     Mathematical Environment   EN61000-6-4     Mathematical Environment   EN61000-4-2 ESD Level 3     Mathematical Environment   EN61000-4-2 ESD Level 3     Mathematical Environment   EN61000-4-3 RS 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     EN61000-4-6 CS Level 3     Mathematical Environment   EC 60068-2-31     Mathematical Environment   EC 60068-2-27     Mathematical Environment   EC 60068	Certification				
Immunity for Heavy Industrial Environment	EMC	CE (EN55032, EN55035)			
Industrial Environment   ENG1000-0-2     Emission for Heavy Industrial Environment   ENG1000-6-4     EMS (Electromagnetic Susceptibility) Protection Level   ENG1000-4-2 ESD Level 3     ENG1000-4-3 RS Level 3     ENG1000-4-4 EFT Level 3     ENG1000-4-5 Surge Level 3     ENG1000-4-6 CS Level 3     ENG1000-4-6 CS Level 3     ENG1000-4-6 CS Level 3     EC 60068-2-31     Vibration   IEC 60068-2-6     Shock   IEC 60068-2-27     Green   RoHS     MTBF   165,680 Hours (MIL-HDBK-217)	EMI	FCC Part 15 Subpart B Class A, CE			
Industrial Environment	Industrial Environment	EN61000-6-2			
Electromagnetic Susceptibility Protection Level   EN61000-4-3 RS Level 3	Industrial Environment	EN61000-6-4			
Susceptibility   Protection Level   EN61000-4-5 Ns Level 3					
EN61000-4-5 Surge Level 3 EN61000-4-6 CS Level 3  Free Fall IEC 60068-2-31  Vibration IEC 60068-2-6  Shock IEC 60068-2-27  Green RoHS  MTBF 165,680 Hours (MIL-HDBK-217)	Susceptibility)				
EN61000-4-6 CS Level 3  Free Fall IEC 60068-2-31  Vibration IEC 60068-2-6  Shock IEC 60068-2-27  Green RoHS  MTBF 165,680 Hours (MIL-HDBK-217)	Protection Level				
Free Fall         IEC 60068-2-31           Vibration         IEC 60068-2-6           Shock         IEC 60068-2-27           Green         RoHS           MTBF         165,680 Hours (MIL-HDBK-217)					
Vibration         IEC 60068-2-6           Shock         IEC 60068-2-27           Green         RoHS           MTBF         165,680 Hours (MIL-HDBK-217)					
Shock         IEC 60068-2-27           Green         RoHS           MTBF         165,680 Hours (MIL-HDBK-217)					
Green RoHS MTBF 165,680 Hours (MIL-HDBK-217)					
MTBF 165,680 Hours (MIL-HDBK-217)					
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Warranty 5 years			(-217)		
	Warranty	5 years			

# **Application & Topology**

Figure 1 : Application connection diagram

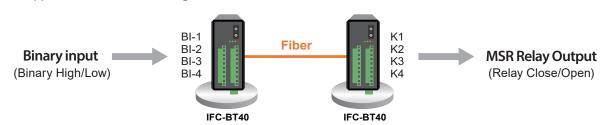
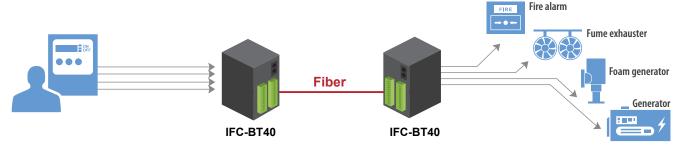
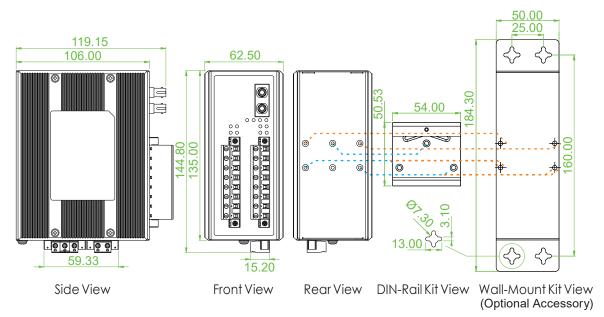


Figure 2: Application example



Application: High power Gate control Heavy industry automation factory Substation

#### **Dimensions**



#### ■ Related Product



#### ◀ FRM220-CCF40:

4ch Contact Closure Fiber Converter, In-Band Managed

#### ► FRM220-CCF20:

2ch Contact Closure Fiber Converter, In-Band Managed



#### ◀ IFC-CCF40A:

4 Ch Contact Closure Input, 4 Relay Output, over Fiber Transmission

#### ▶ IFC-CCF20A:

2 Ch Contact Closure Input, 2 Relay Output, over Fiber Transmission

# **Ordering Information**

					Certification		
Model Name	Input	Output	Fiber transmission	Power Input	EN61000-6-2 EN61000-6-4	CE	FCC
IFC-BT40	4x Channel Binary	4x MSR Contact Relay	1x SC/ST/Bidi	60~264VAC or 60~300VDC	V	V	V

Connector Type	Connectivity Distance		
SC, ST	Dual fiber	002: M/M 2km	
		030: S/M 30km	
	Single fiber	020A: 20KM Bidi mode A	
		020B: 20KM Bidi mode B	
		Mode A: TX 1310nm/RX1550nm Mode B: TX 1550nm/RX1310nm	

# **Optional Accessories**

#### ■ Wall Mount Kit

IND-WMK02 Wall Mount kit for Industrial product, 184 x 50mm