

# Compact FieldPoint I/O Connectivity Accessories

## Flexible I/O Connectivity

The NI Compact FieldPoint backplane provides standard 37-pin D-Sub connectors for signals from the I/O modules so you can choose the connectivity method that works best for your application. You have three options to connect field wiring to the 37-pin D-Sub connectors:

1. An integrated connector block – NI cFP-CB-1, cFP-CB-2, cFP-CB-3, cFP-CB-4, or cFP-CB-11
2. A cable to an external connector block mounted on a DIN rail
3. Your own custom cable

## Integrated Connector Blocks

The most secure and compact connectivity option is to use the Compact FieldPoint integrated connector blocks – the cFP-CB-1, cFP-CB-2, cFP-CB-3, cFP-CB-4, and cFP-CB-11.



Figure 1. cFP-CB-1 General-Purpose Connector Block with Strain Relief

### cFP-CB-1 (See Figure 1)

The cFP-CB-1, suitable for any I/O module, is a general-purpose connector block with strain relief. With 36 terminals, the connector block simplifies wiring by eliminating the need to connect more than one wire to a terminal. The cFP-CB-1 also features both a built-in strain relief bar and a separate wire tie connector, making it easy to create secure wiring setups for high shock and vibration applications.



Figure 2. cFP-CB-2 General-Purpose Connector Block with Front Accessibility

### cFP-CB-2 (See Figure 2)

The cFP-CB-2, suitable for any I/O module, is a general-purpose connector block with front accessibility. With 36 terminals, the connector block simplifies wiring by eliminating the need to connect more than one wire to a terminal. The cFP-CB-2 also features a removable spring-terminal connector that allows easy front-panel access to the terminals for wiring. If your application is subject to hazardous voltage and/or high vibration, install the NI 9940 backshell on the spring-terminal connector.



Figure 3. cFP-CB-3 Isothermal Connector Block for Thermocouple Measurements

### cFP-CB-3 (See Figure 3)

The cFP-CB-3 connector block is designed for use with NI cFP-TC-120 and cFP-TC-125 thermocouple input modules. The cFP-CB-3 uses isothermal construction to minimize thermal gradients on the I/O terminals. Although the cFP-CB-1, cFP-CB-2, cFP-CB-3, and cFP-CB-4 all feature a built-in thermistor for cold-junction compensation, NI strongly recommends using the cFP-CB-3 when measuring thermocouples for increased accuracy. The cFP-CB-3 also features both a built-in strain relief bar and a separate wire tie connector, making it easy to create secure wiring setups for high shock and vibration applications.

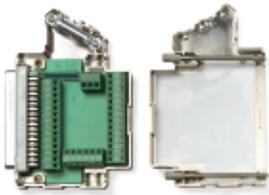


Figure 4. cFP-CB-4 Probeable Connector Block with Front Accessibility

### cFP-CB-4 (See Figure 4)

The cFP-CB-4, ideal for prototyping and troubleshooting, is a probeable 20-pin connector block with front accessibility. The removable screw-terminal connector allows easy front-panel access to the terminals for wiring and probing. If your application is subject to hazardous voltage and/or high vibration, NI recommends affixing ferrules to the ends of all signal wires.

## Compact FieldPoint I/O Connectivity Accessories



### cFP-CB-11 (See Figure 5)

The cFP-CB-11 is a low-profile, general-purpose connector block suitable for any I/O module except the thermocouple module. These connector blocks feature a side exit for the wiring, making them a good fit for applications with limited front clearance. Because the connector blocks are smaller, the cFP-CB-11 is best suited for applications that use small-gauge wire or only a few channels.

Figure 5. cFP-CB-11 General-Purpose Connector Block for Low-Wiring Density and Low Clearance

Connector Block	Screw Terminals	Built-In CJC	High Shock and Vibration	Voltage Limit	Applications	Part Number
cFP-CB-1	36	4	4	250 V	General purpose with strain relief	778618-01
cFP-CB-2	36	4	4	250 V	General purpose with front accessibility	780017-02
cFP-CB-3	18	4	4	250 V	Isothermal for thermocouples	778618-03
cFP-CB-4	20	4	4	250 V	Probeable with front accessibility	780017-04
cFP-CB-11	37	-	-	24 V	Low-wiring density and low clearance	778618-11

Table 1. Compact FieldPoint I/O Connectivity Accessories

### Module Compatibility

For easy wiring to multiple channels, the general-purpose connector blocks, cFP-CB-1 and cFP-CB-2, are recommended for I/O modules with more than eight channels. On the cFP-CB-3 and cFP-CB-4 connector blocks, use V terminals for  $V_{SUP}$  connections and use C terminals for COM connections, accordingly.

Analog Input	Channels	cFP-CB-1	cFP-CB-2	cFP-CB-3	cFP-CB-4
cFP-AI-100	8 voltage/current	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-AI-102	8	✓	✓	—	✓
cFP-AI-110	8 voltage/current	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-AI-111	16	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-AI-112	16	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-AI-118	8	✓	✓	—	—
cFP-TC-120	8	✓	✓	✓ <sup>1</sup>	✓
cFP-TC-125	8	✓	✓	✓ <sup>1</sup>	✓
cFP-RTD-122	8	✓	✓	—	—
cFP-RTD-124	8	✓	✓	—	—
cFP-SG-140	8	✓	✓	—	—
<b>Analog Output</b>					
cFP-AO-200	8	✓	✓	—	✓
cFP-AO-210	8	✓	✓	—	✓
<b>Analog Input/Output</b>					
cFP-AIO-600	4 input, 4 output	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-AIO-610	4 input, 4 output	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
<b>Digital Input</b>					
cFP-DI-300	8	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-DI-301	16	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-DI-330	8	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-DI-304	32	✓	✓	—	—
cFP-DIO-550	8 input, 8 output	✓	✓	—	—
<b>Digital Output</b>					
cFP-DO-400	8	✓	✓	—	✓
cFP-DO-401	16	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-DO-403	16	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-DO-410	8	✓	✓	—	✓
cFP-RLY-421	8	✓	✓	—	✓
cFP-RLY-423	4	✓	✓	—	✓
cFP-RLY-425	8	—	—	—	—
<b>Digital Specialty</b>					
cFP-CTR-500	12 input, 8 output	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-CTR-502	12 input, 8 output	✓ <sup>1</sup>	✓ <sup>1</sup>	—	✓
cFP-QUAD-510	4	✓	✓	—	—
cFP-PWM-520	8	✓	✓	—	✓
cFP-PG-522	8	✓	✓	—	✓

<sup>1</sup>Recommended

Table 2. Module Compatibility

# NI Services and Support



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### NI Factory Installation Services

NI Factory Installation Services (FIS) is the fastest and easiest way to use your Compact FieldPoint systems right out of the box. Trained NI technicians install the software and hardware and configure the system to your specifications. NI extends the standard warranty by one year on hardware components (controllers, backplanes, modules) purchased with FIS. To use FIS, simply configure your system online at [ohm.ni.com/advisors/cfp](http://ohm.ni.com/advisors/cfp).

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