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NATIONAL INSTRUMENTS™
FieldPoint™

FP-1600 FieldPoint Quick Start Guide

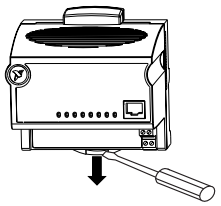
What You Need to Get Set Up

- Network Module
- Mounting Hardware (DIN rail or panel mount accessory)
- Terminal Base(s)
- I/O Module(s)
- Power Supply
- FieldPoint Software CD
- Accessories: Ethernet cable, screwdriver

1 *Install the Network Module*

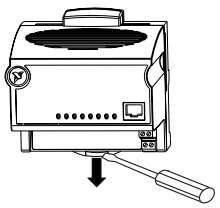
DIN Rail Mount

A. Unlock rail clip.



Panel Mount

A. Unlock rail clip.



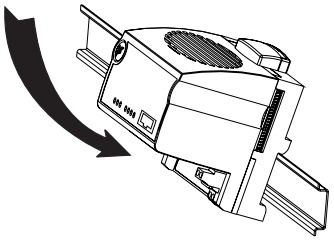
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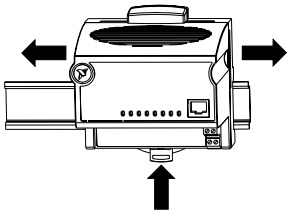
DIN Rail Mount

NOTE: Do not use spliced DIN rails. Use only a single DIN rail.

B. Hook lip on back of module onto top of DIN rail, press down, and snap into place.

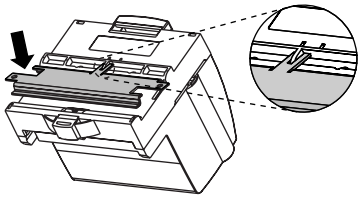


C. Slide module into position and lock rail clip.

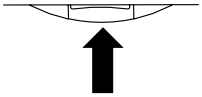


Panel Mount

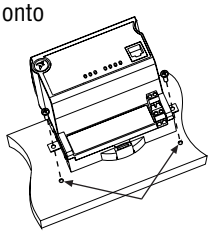
B. Snap panel mount accessory (which you can order separately) onto module.



C. Lock rail clip.



D. Use template that came with your accessory to drill pilot holes and mount module onto panel using accessory.



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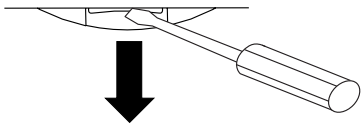
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2 *Install the Terminal Base(s)*

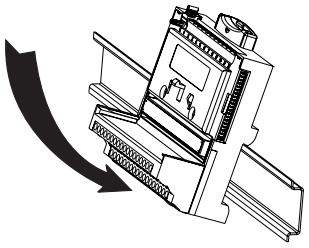
CAUTION: Terminal bases must be connected to the network module before applying power to the module. Do *not* connect or disconnect terminal bases while power is applied to the network module.

DIN Rail Mount

A. Unlock rail clip.



B. Press base onto rail.

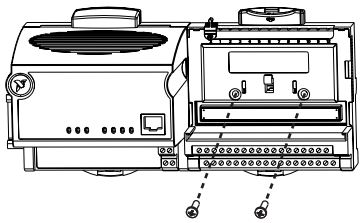


Panel Mount

A. Use template that came with your accessory to drill pilot holes.

B. Connect terminal base to network module connector, being careful not to bend any connector pins.

C. Fasten terminal base to panel.

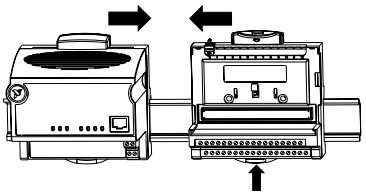


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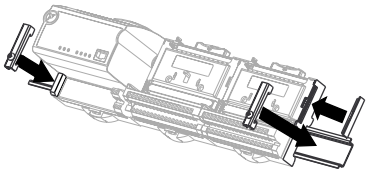
DIN Rail Mount

C. Slide into position and lock the rail clip. Be careful not to bend any pins.



D. Repeat for each terminal base, up to nine for each network module in most cases. You can use one or two extender cables (which you can order separately) if your FieldPoint bank is too long for your available space.

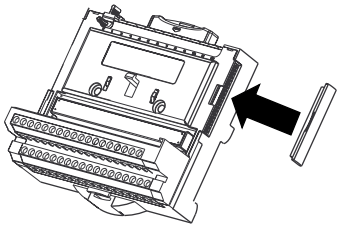
E. Place protective cover on last base, and install rail locks at each end.



Panel Mount

D. Repeat for each terminal base, up to nine for each network module in most cases. You can use one or two extender cables (which you can order separately) if your FieldPoint bank is too long for your available space.

E. Place protective cover on last base.



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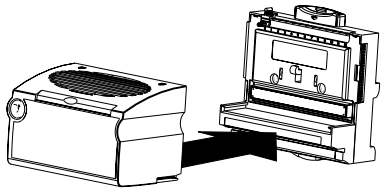
3 *Install the I/O Module(s)*

It does not matter where you install each I/O module, except for these types of situations:

- If you plan to cascade power between any I/O modules using the V and C terminals, those modules should be grouped together.
- For more accurate measurements, you might want to locate any thermocouple modules away from heat sources, including network modules or relay modules, unless you are mounting them on an FP-TB-3.

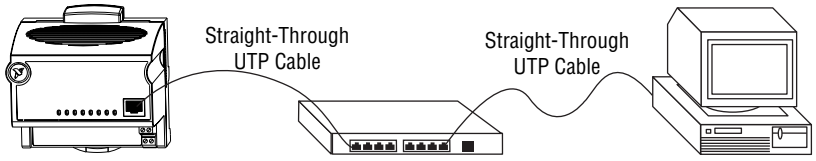
A. Align slots on module with guide rails on base, and press onto base until terminal base's latch locks the module in place.

B. Repeat for each I/O module.



4 *Connect the Network Cables*

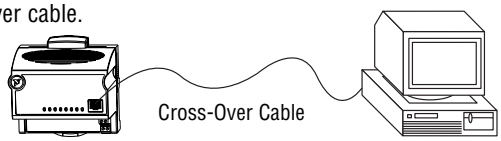
Connect the FP-1600 to an Ethernet network by connecting the RJ-45 Ethernet port of the FP-1600 to an Ethernet hub using a standard Category 5 Ethernet cable.



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Optionally, you can connect an FP-1600 directly to a computer using an Ethernet crossover cable.



Do not use a cable longer than 100 m. If you are using a 100 Mbps Ethernet, National Instruments recommends using a Category 5 shielded twisted-pair Ethernet. If you need to build your own cable, refer to the FP-1600 User Manual for cabling details.

5 *Wire Power to Your FieldPoint System*

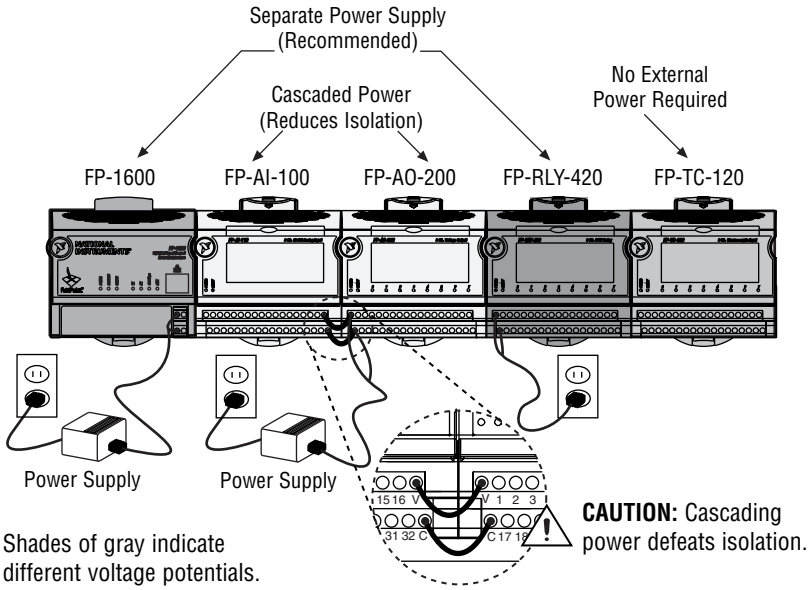
A. Connect 11-30 VDC power supply leads to V and C terminals of the network module. If you want to verify that your power supply is sufficient for your modules and devices, refer to your FieldPoint hardware documents for instructions on calculating power requirements.

B. Connect power to the FieldPoint modules that require external power for outputs (output modules, counter modules, PWM, PG, QUAD). Refer to the I/O module's operating instructions for power requirement details. You can power a module by connecting the V and C inputs on its terminal base to a separate power supply, connecting the V and C outputs of a neighboring terminal base or network module, or using a combination of both methods. If you want to power field I/O devices from a terminal base, supply power to the terminal base, and then connect the terminal base V and C output terminals to the field device.

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CAUTION: Cascading power from neighboring bases or network modules defeats isolation between cascaded modules.

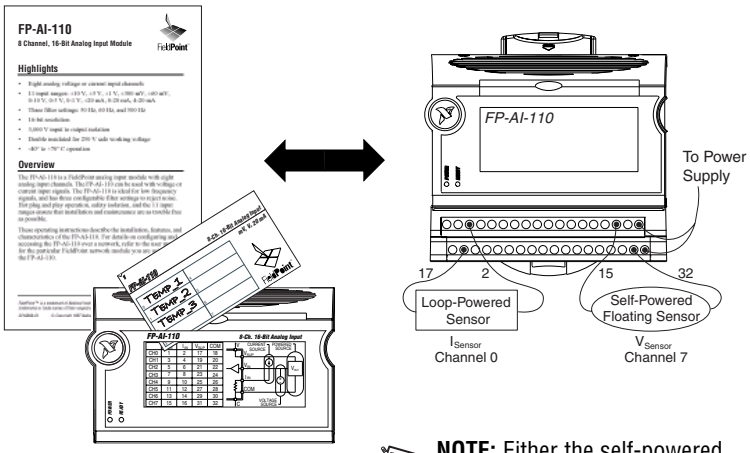


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6 *Connect to Field Devices*

Use each I/O module's operating instructions, or the diagram under its removable label, to help you connect your field devices.



NOTE: Either the self-powered sensor or power supply should be floating (not tied to earth ground).

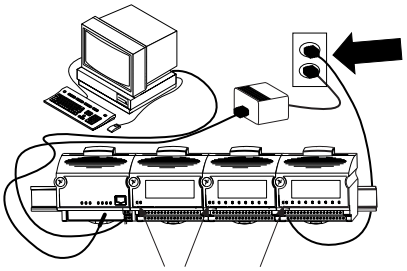
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7 *Power Up Your FieldPoint System*

⚠ **CAUTION:** Terminal bases must be connected to the FP-1600 before power is applied to the FP-1600.

Plug in each power supply to your FieldPoint bank. You should see all except the **STATUS** and **PROCESS** LEDs flash once, and the **POWER** LED come on and stay on. After a few seconds, the **POWER** and **READY** LEDs should be lit on each I/O module. If this is not the case, refer to your FP-1600 user manual for troubleshooting instructions.



POWER and READY LEDs Stay Lit

The **READY** LEDs will not light until an IP address is assigned. Likewise, the **STATUS** LED will stay lit until an IP address is assigned.

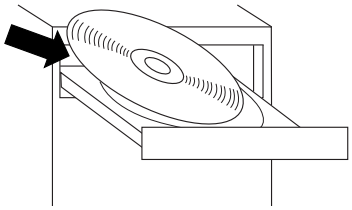
After the hardware is installed, you should verify communication, configure the modules, configure your power-up states and watchdog settings. If you are using National Instruments FieldPoint software for these tasks, continue to the following section.

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8 *Install the FieldPoint Software*

A. Close all other applications. If you plan to install National Instruments development software such as Lookout, LabVIEW, or Measurement Studio, install them before you install the FieldPoint software.

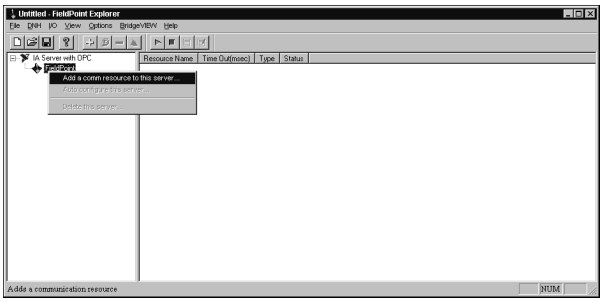


B. Insert the FieldPoint software CD and follow the onscreen instructions.

9 *Verify the Installation*

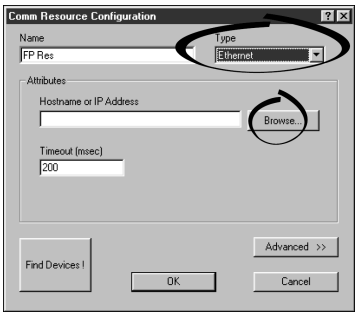
A. Select **Start»Programs»National Instruments FieldPoint»FieldPoint Explorer**.

B. Right-click on the FieldPoint icon and select **Add a comm resource to this server**.

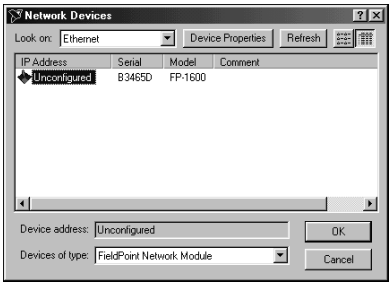


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C. In the Comm Resource Configuration dialog box, select **Ethernet** as the **Type**.

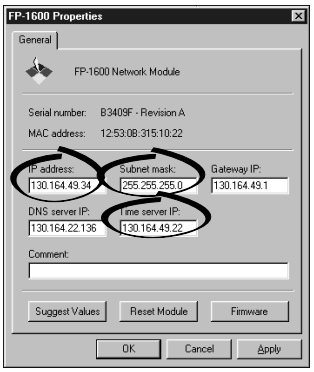


D. Click **Browse**, select the FP-1600, and click the **Device Properties** button.



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E. In the FP-1600 Properties box, enter values for the **IP address**, **Subnet mask**, and **Time server IP**. You might also want to enter a comment to help you identify the FP-1600 module.



- **IP address** is the address of the FP-1600 on the network.
- **Subnet mask** is the mask that is applied to the IP address that the device uses to find other devices on the Ethernet network (255.255.255.0 is the most common).
- **Time server IP** is the address of the host computer that the FP-1600 will synchronize its clock to. The computer must have the Lookout Time Synch service (installed with Lookout 4.x or FieldPoint 2.x).

F Click on **Apply**, then **OK** twice to return to the **Comm Resource Configuration** dialog box.

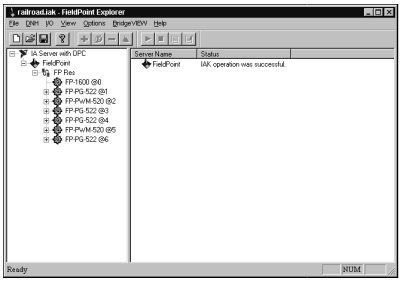
G. Click on **Find Devices**. 

H. Expand the +FP Res item on the left side of the Explorer window to see the devices found on the network.

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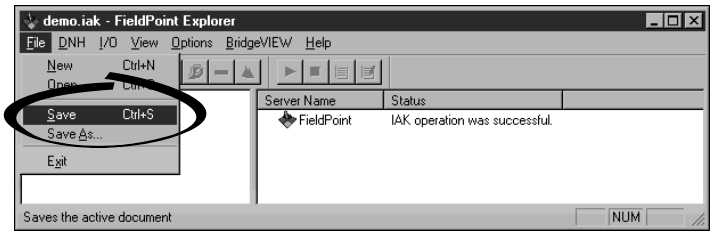
If your modules are not listed, check the cable and connections and make sure the modules are all powered on. If you still have problems, refer to your FP-1600 user manual for troubleshooting information.



I. Select an input module and click on the start monitoring button to view live data.

J. Select an output channel and click on the write button to change outputs.

K. Select **File»Save**.



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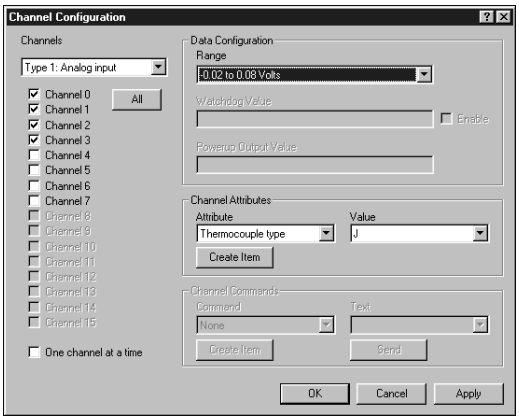
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10 *Configure I/O Modules*

A. Right-click on the device name in FieldPoint Explorer and select **Edit this Device** from the pop-up menu.

B. Click on the **Channel Configuration** button to bring up the **Channel Configuration** dialog box.

C. Select the type of channel to show, then select the channel(s) that you want to change. To select more than one channel, uncheck the **One channel at a time** box.



NOTE: Configuration options are module-dependent. The options listed here might not be available for your particular module. Refer to your I/O module operating instructions for details on configuration options.

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D. Set the range and output values of the selected channel(s).

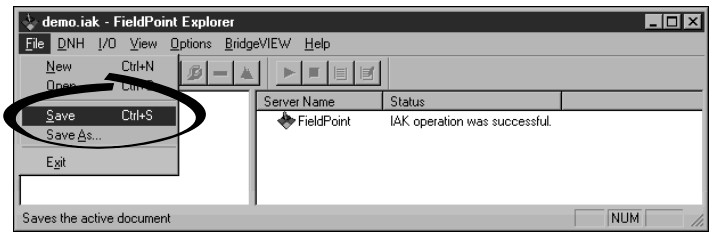
E. Set the attributes for the selected channel(s) by selecting the attribute and entering the desired value.

F. Send commands to the selected channel(s) by choosing a command and value and clicking on **Send**.

G. Repeat this procedure for each channel you want to configure.

H. Click on the **OK** button when you are finished, or click on the **Apply** button to save the changes and continue to configure channels. When you click on **OK** or **Apply**, the changes are immediately sent to the device.

I. Select **File»Save** when you are done.



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11 *Where to Go from Here*

After you get your hardware up and running, you might want to implement features such as power-up defaults or network watchdog settings. Refer to your FP-1600 user manual or online help for information about features, configuration, application development, and troubleshooting.

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FP-1600 Specifications

Network interface . . . . . 10BaseT and 100BaseTX Ethernet
Compatibility. . . . . IEEE 802.3
Communications rate . . . . . 10 Mbps, 100 Mbps, autonegotiated
Cabling distance . . . . . 100 m
Power supply range . . . . . 11 to 30 VDC
Power consumption . . . . . 7 W + 1.15 Σ * (I/O module power requirements)
Maximum terminal bases per bank 9
Maximum number of banks. . . . . determined by network topology
Operating temperature. . . . . –20 to +55 °C
Storage temperature . . . . . –55 to +85 °C
Relative humidity . . . . . 5% to 90% non-condensing
Weight . . . . . 280 g (9.9 oz.)

Compliance
Electrical safety. . . . . designed to meet IEC 1010
EMI emissions/immunity. . . . . CISPR 11

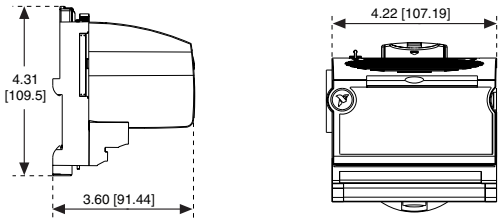
CE Mark Compliance
This product meets applicable EU directive(s) as follows:
EMC directive
Immunity . . . . . EN 50082–1:1994
Emissions . . . . . EN 55011:1991 Group I Class A at 10 meters

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Mechanical Dimensions

Dimensions are given in inches [millimeters].



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China 0755 3904939, Denmark 45 76 26 00, Finland 09 725 725 11,
France 01 48 14 24 24, Germany 089 741 31 30, Greece 30 1 42 96 427,
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