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Find the *National Instruments FP-1601* at our website: *Click HERE*

FieldPoint™

FP-1601 FieldPoint Quick Start Guide

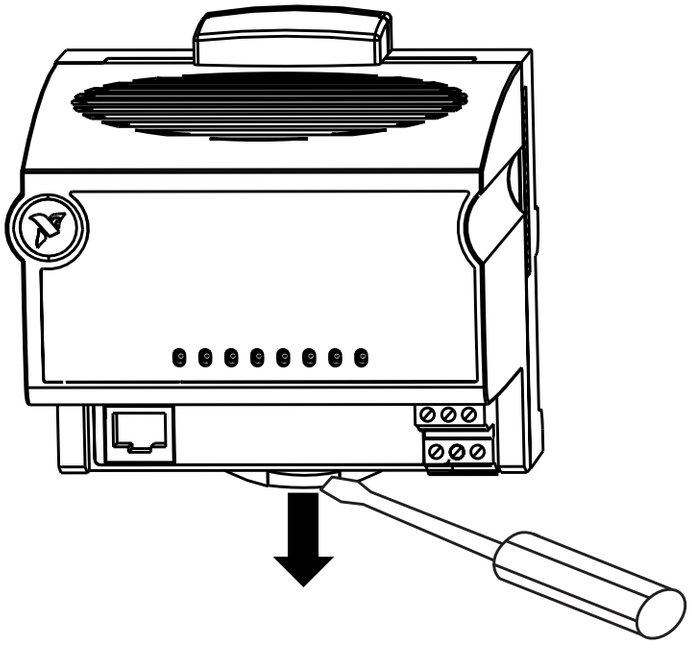
What You Need to Get Set Up

- FP-1601 network module
- 35 mm DIN rail
- Two DIN rail locks (included)
- Terminal base(s)
- I/O module(s)
- 11–30 VDC power supply
- Accessories: Ethernet cable, flathead screwdriver
- PC running Windows
- National Instruments FieldPoint Software CD

1 Install the Network Module

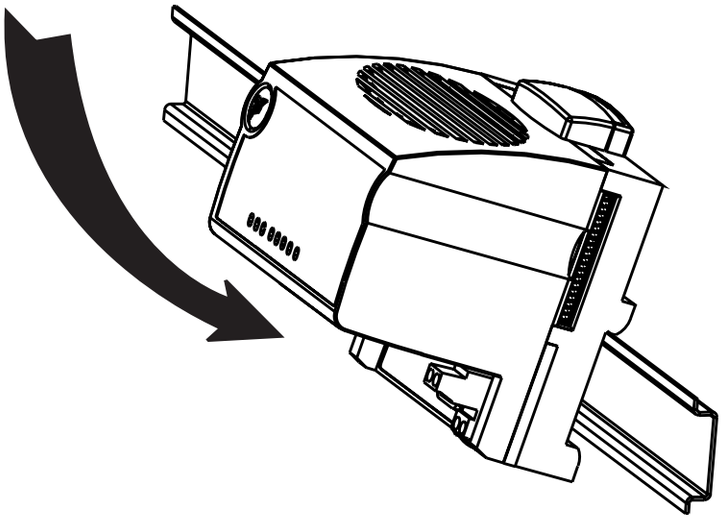
Mount the module on a DIN rail.

A. Unlock rail clip.

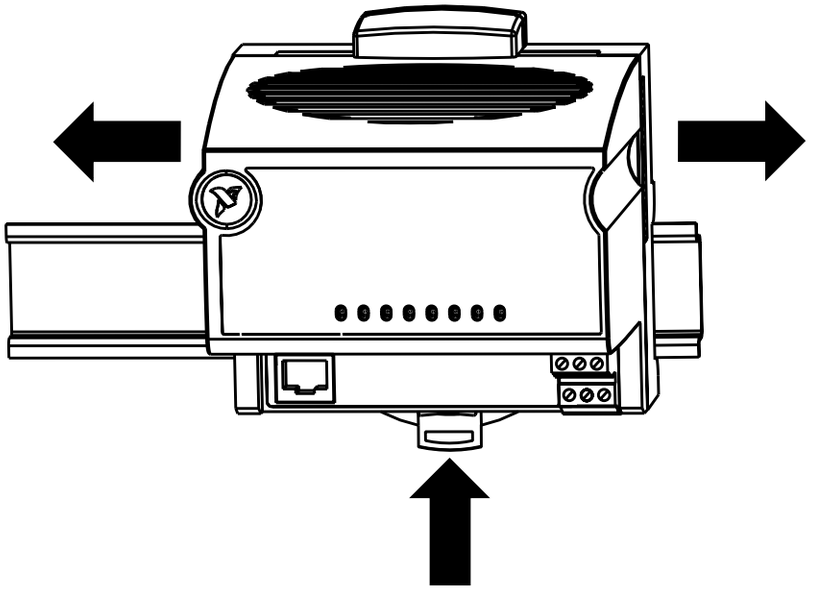


NOTE Do not use spliced DIN rails. Use only a single DIN rail.

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



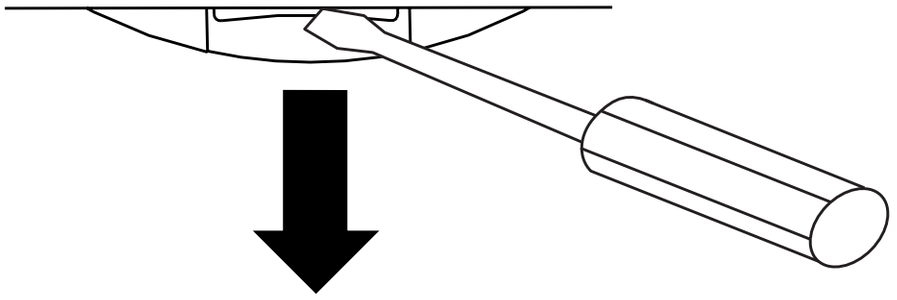
C. Slide module into position and lock rail clip.



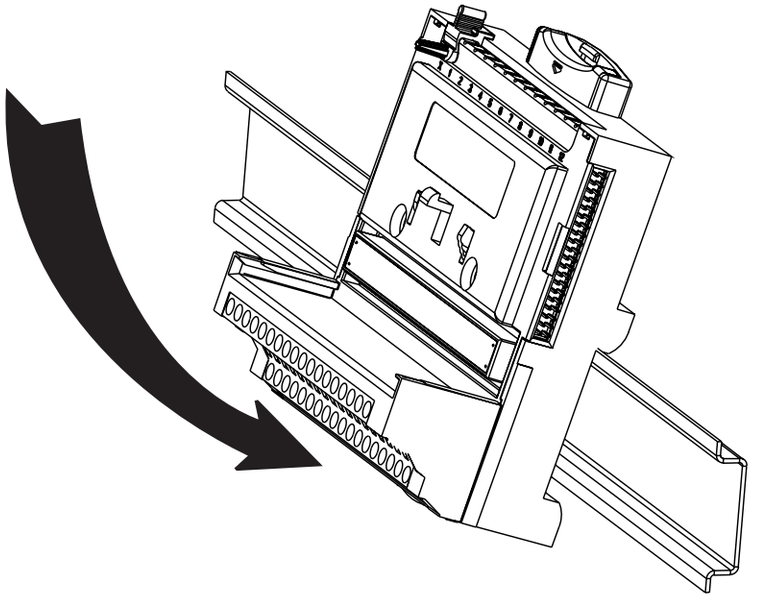
2 Install the Terminal Base(s)

CAUTION Connect the terminal bases 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.

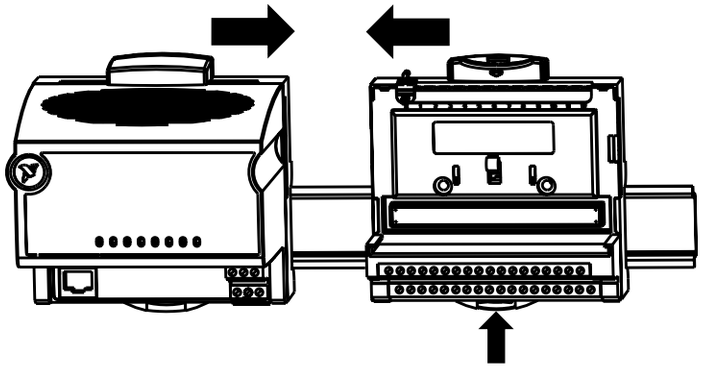
A. Unlock rail clip.



B. Press base onto rail.

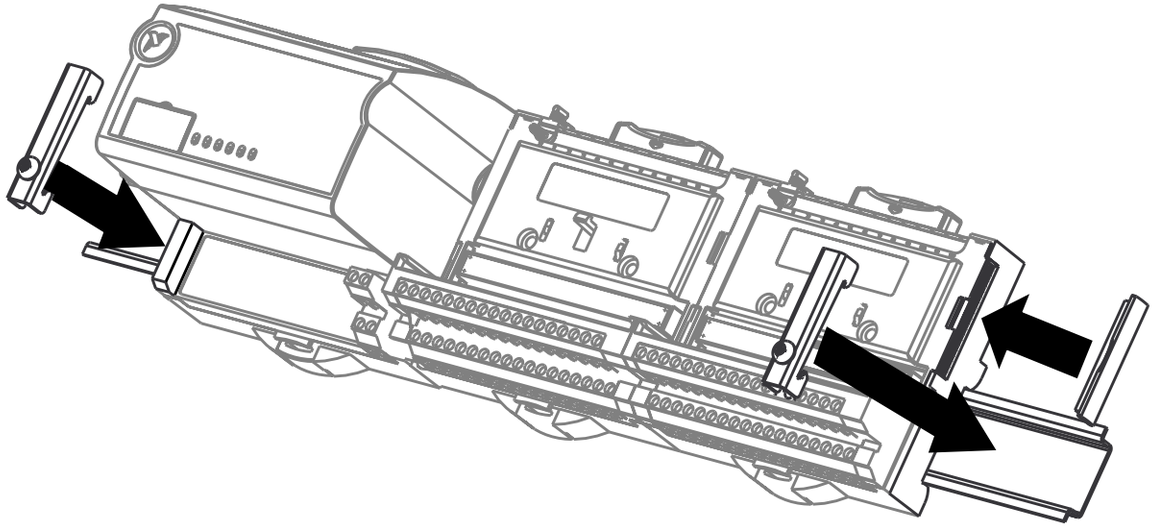


C. Slide base into position and lock rail clip. Be careful not to bend any pins.



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 the FieldPoint bank is too long for the available space. Make sure there are no gaps between terminal bases.

E. You *must* install DIN rail locks at each end of the bank to ensure reliable connections between terminal bases and network module. Two rail locks are included with each network module. Place protective cover on last base.



3 Install the I/O Module(s)

It does not matter where you install each I/O module, except in the following cases:

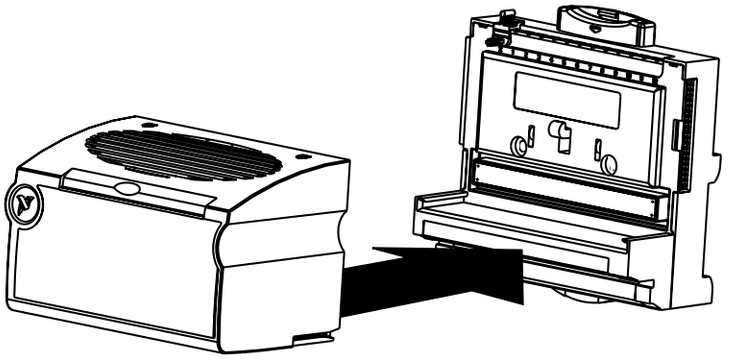
- If you plan to cascade power between any I/O modules using the V and C terminals, those modules should be grouped together.

CAUTION Cascading power defeats isolation.

- For more accurate measurements, place thermocouple modules away from heat sources, including network modules and relay modules.

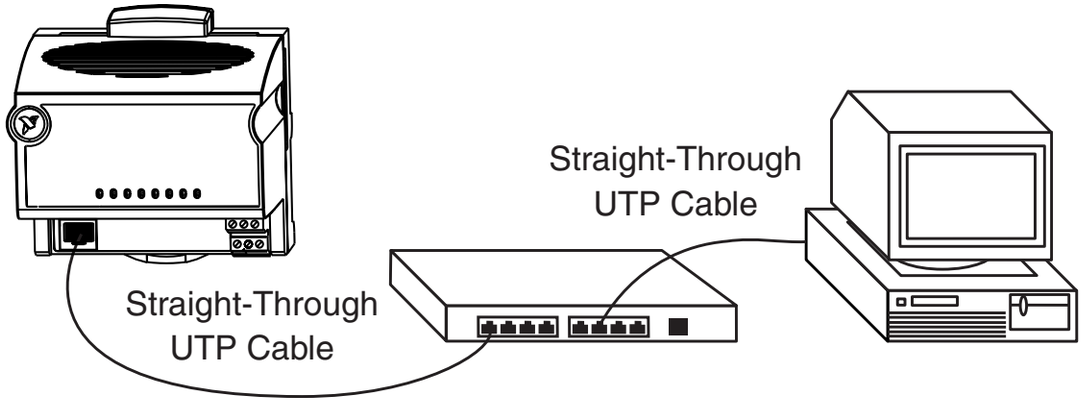
A. Align slots on module with guide rails on base, and press module onto base until terminal base latch locks module in place.

B. Repeat for each I/O module.

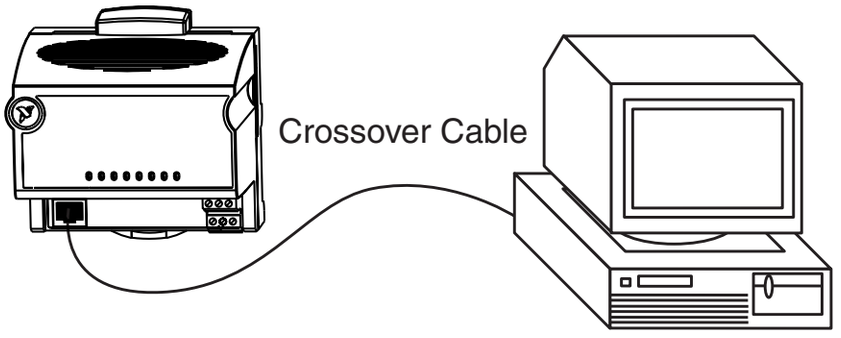


4 Connect the FP-1601 to the Network

Connect the FP-1601 to an Ethernet network by connecting the RJ-45 Ethernet port of the FP-1601 to an Ethernet hub using a standard Category 5 Ethernet cable.



Optionally, you can connect an FP-1601 directly to a computer using an Ethernet crossover cable.



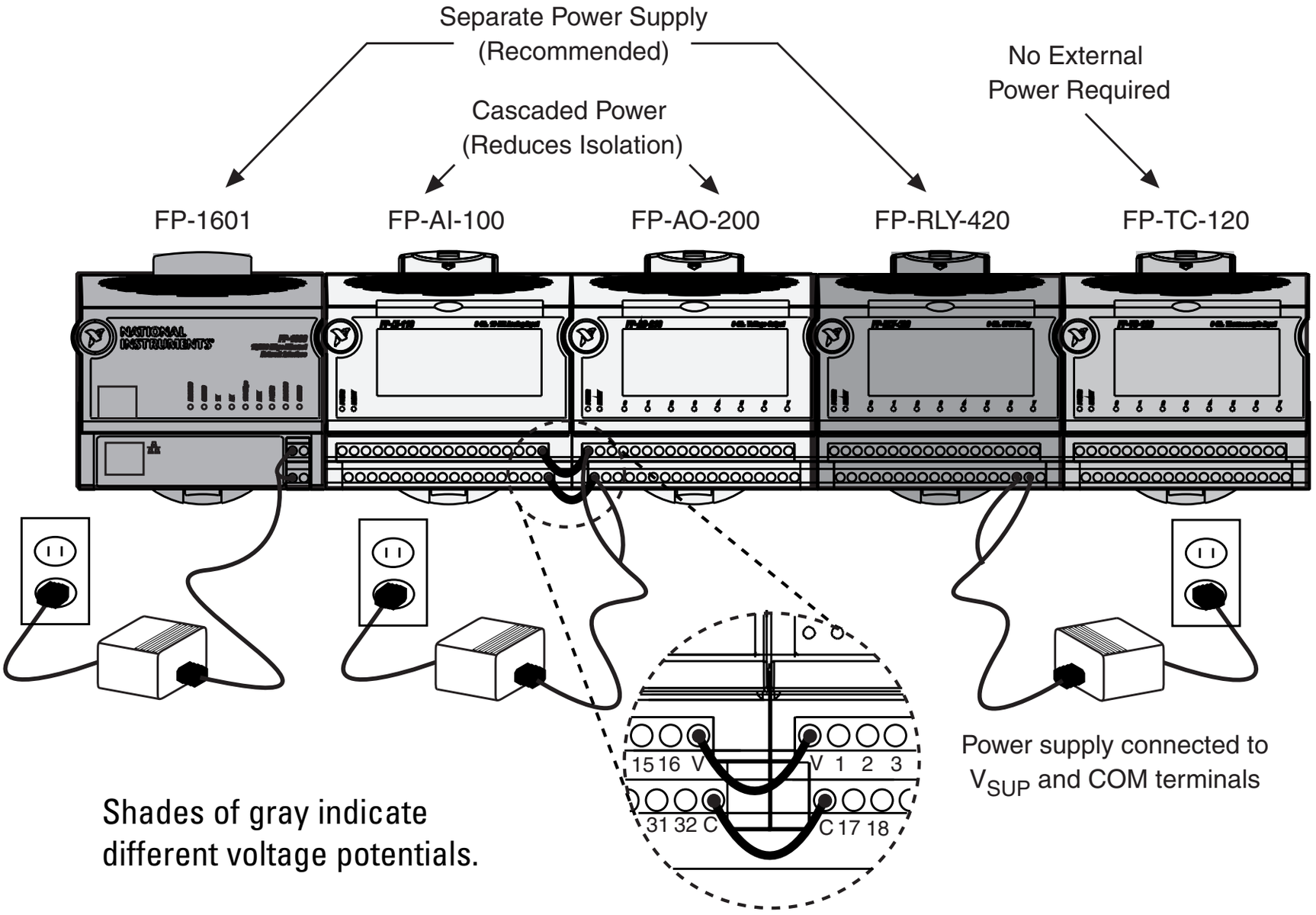
Do not use a cable longer than 100 m. If you are using a 100 Mbps Ethernet, National Instruments recommends using a Category 5 shielded twisted-pair cable. If you need to build your own cable, refer to the *FP-1601 User Manual* specifications section for cabling details.

5 Wire Power to the FieldPoint System

A. Connect power supply leads to the V and C terminals of the network module. Use an 11–30 VDC, 15 W minimum power supply such as the NI FP-PS-4. Refer to the I/O module operating instructions for the power requirements of each module. Refer to the *Specifications* section of this document for instructions on calculating the power requirement of the FieldPoint bank.

B Connect power to the I/O modules that require external power for outputs (examples include output, counter, relay, PWM, PG, and QUAD modules). It is generally best to power each such module by connecting an external power supply to the V_{SUP} and COM terminals. Refer to the I/O module operating instructions for power requirements, detailed wiring diagrams, and safe wiring practices.

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



CAUTION Cascading power defeats isolation.

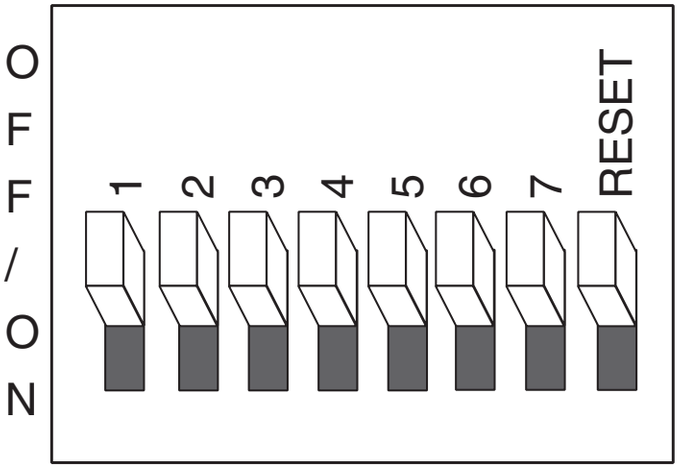
6 Connect to Field Devices

Use the operating instructions for each I/O module to help you connect field devices.

7 Power Up the FieldPoint System

CAUTION Connect terminal bases to the FP-1601 before applying power.

Make sure the RESET DIP switch is not on. Plug in each power supply to the FieldPoint bank. You should see the **POWER** and **STATUS** LEDs come on. After about 5 seconds, the **STATUS** LED begins flashing, one flash at a time. This indicates that the FP-1601 is ready to be configured. If the LEDs do not follow this sequence, refer to the *FP-1601 User Manual* troubleshooting appendix.



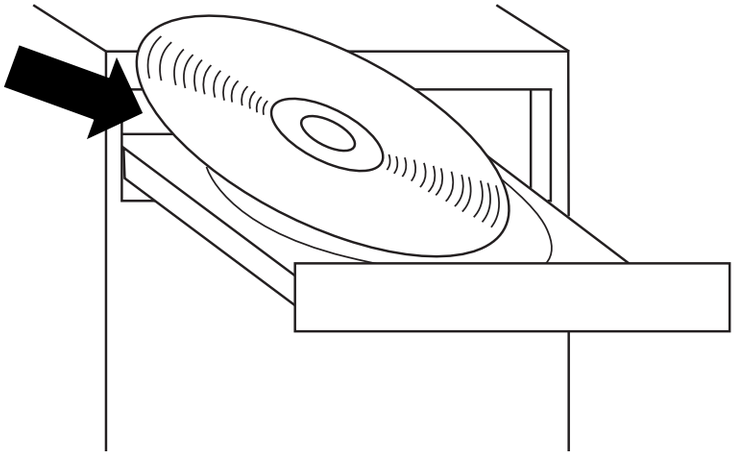
8 Install Software on the Host PC

A. Install the software packages you plan to use, such as LabVIEW, LabVIEW RT, Measurement Studio, VI Logger, or LabWindows™/CVI™, before you install the FieldPoint software. The FieldPoint software installation installs the LabVIEW VIs and examples and the LabWindows/CVI instrument driver only if it finds the corresponding development software installed.

B. Close all other applications.

C. Insert the National Instruments FieldPoint Software CD into the CD-ROM drive of your computer.

D. Follow the onscreen instructions to complete the installation.



NOTE If the setup does not launch automatically, select **Start»Run** from Windows, enter `d:\setup`, where `d` is the letter of the CD-ROM drive, and select **OK**.

9 Configure the FP-1601

Launch NI Measurement & Automation Explorer (MAX) to configure the FP-1601. For information about configuring the FP-1601 in software, refer to the *Measurement & Automation Explorer Help for FieldPoint* (**Start»Programs»National Instruments» FieldPoint»FieldPoint Help**).

Specifications

Network

Network interface . . . . . 10BaseT and 100BaseTX Ethernet
Compatibility. . . . . IEEE 802.3
Communications rate . . . . . 10 Mbps, 100 Mbps, autonegotiated
Maximum cabling distance . . . . . 100 m/segment
Maximum power supplied
to terminal bases. . . . . 9 W
Maximum number of banks . . . . . Determined by network topology

Power Requirements

Power supply range . . . . . 11–30 VDC
Recommended power supply
    FP-1601 with
    up to 5 modules . . . . . 15 W (FP-PS-4 or equivalent)
    FP-1601 with
    6 to 9 modules . . . . . 20 W
Power consumption . . . . . 4.5 W + 1.1(*I/O module power requirements*)

Physical Characteristics

Screw-terminal wiring . . . . . 16–26 AWG copper conductor wire with 7 mm (0.28 in.) of insulation stripped from the end
Torque for screw terminals . . . . . 0.5–0.6 N · m (4.4–5.3 lb · in.)
Weight. . . . . 235 g (8.3 oz)

Environmental

FieldPoint modules are intended for indoor use only. For outdoor use, they must be installed in a suitable sealed enclosure.

Operating temperature . . . . . –25 to 55 °C
Storage temperature . . . . . –55 to 85 °C
Humidity . . . . . 10 to 90% RH, noncondensing
Maximum altitude . . . . . 2,000 m
Pollution Degree 2

Safety

The FP-1601 is designed to meet the requirements of the following standards for safety and electrical equipment for measurement, control, and laboratory use:

- EN 61010-1, IEC 61010-1
- UL 3121-1, UL 61010C-1
- CAN/CSA C22.2 No. 1010.1

For UL and other safety certifications, refer to the product label or to `ni.com`.

Electromagnetic Compatibility

CE, C-Tick and FCC Part 15 (Class A) Compliant
Emissions . . . . . EN 55011 Class A at 10 m FCC Part 15A above 1 GHz
Immunity . . . . . EN 61326: 1997+A2:2001, Table 1



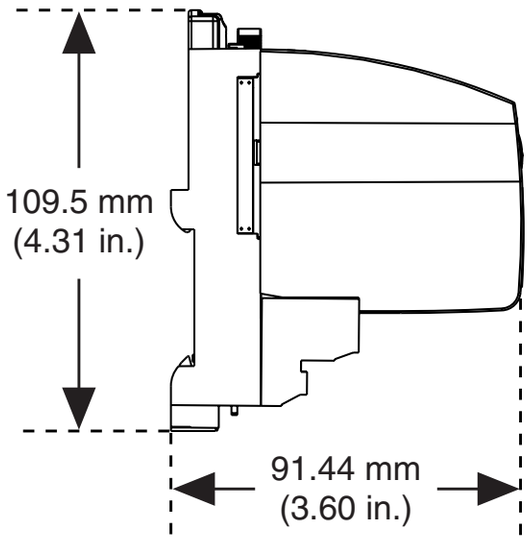
NOTE For EMC compliance, operate this device with shielded cabling.

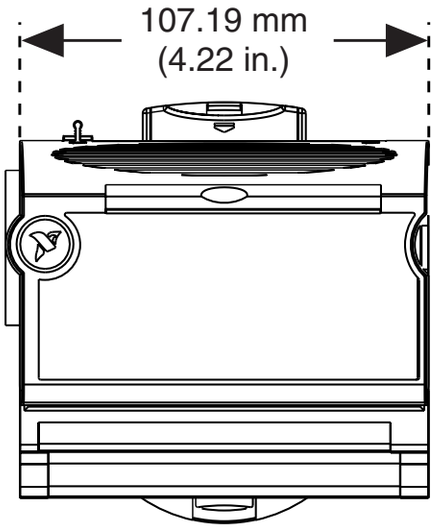
CE Compliance

This product meets the essential requirements of applicable European Directives, as amended for CE Marking, as follows:
Low-Voltage Directive (safety). 73/23/EEC
Electromagnetic Compatibility
Directive (EMC) 89/336/EEC

NOTE Refer to the Declaration of Conformity (DoC) for this product for any additional regulatory compliance information. To obtain the DoC for this product, click **Declarations of Conformity Information** at `ni.com/hardref.nsf/`.

Mechanical Dimensions







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