ioThinx 4530 Series
Quick Installation Guide

Version 1.2, December 2019

MOXA®

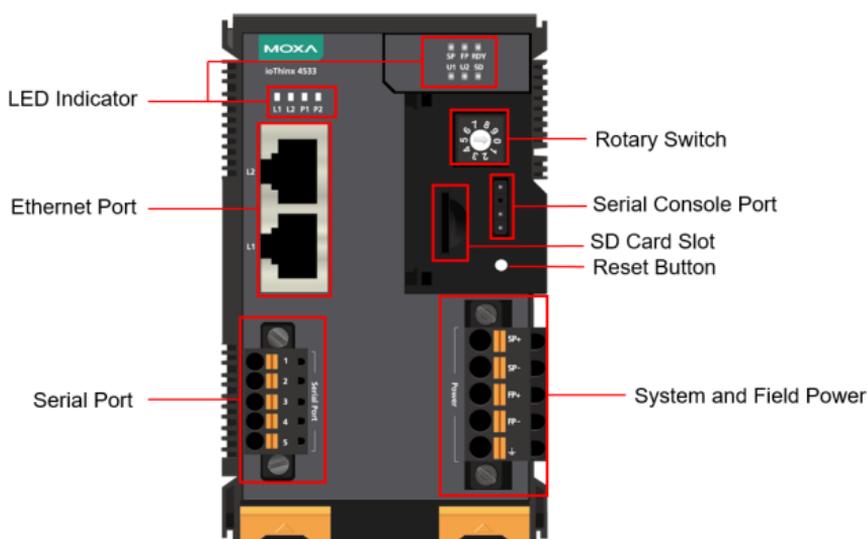**P/N: 1802045300003**

Introduction

The ioThinx 4530 Series is an advanced modular controller with a unique hardware and software design that makes it ideal for a variety of industrial data acquisition applications.

> ### ⚠️ ATTENTION
>
> If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired. The manufacturer is not responsible for accidents caused by improper use of the equipment.

Appearance (ioThinx 4533)

- LED Indicator
- Ethernet Port
- Serial Port
- Rotary Switch
- Serial Console Port
- SD Card Slot
- Reset Button
- System and Field Power

Package Checklist

- 1 x ioThinx 4530 Series product
- 1 x quick installation guide (printed)
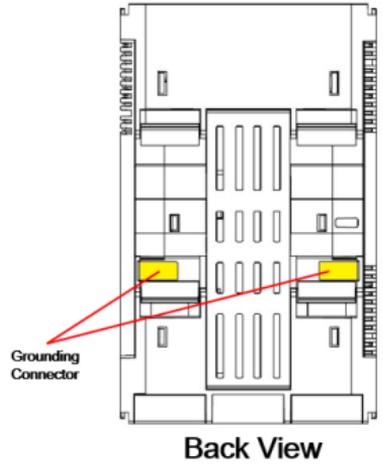- 2 x side cover plate

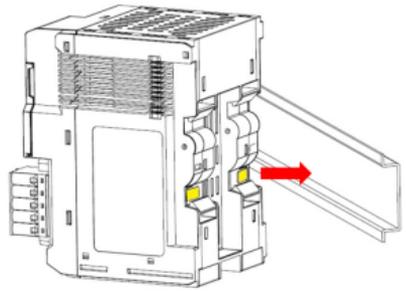## Installation

Connecting the System Power

Connect your 12 to 48 VDC power source to the SP+ and SP- terminals on the ioThinx 4530 Series' terminal block.

12 to 48 VDC

Front View
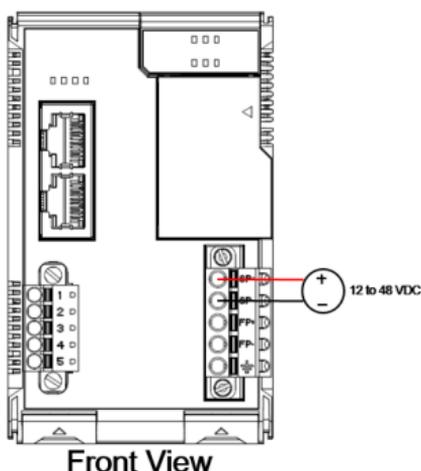
The system grounding connectors are located on the back of the unit, as shown in the diagram.
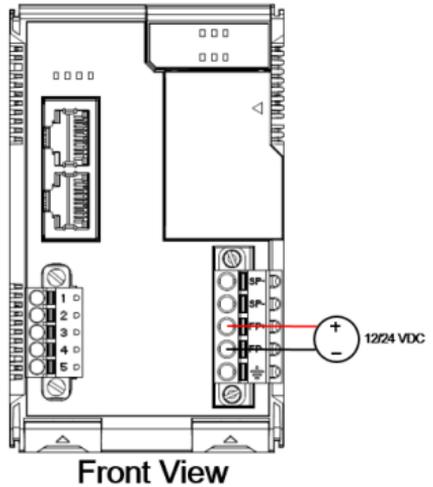
Back View

The grounding connectors will contact the DIN rail when the product is attached to it.

Connecting the Field Power

The ioThinx 4530 Series can receive field power through a 12/24 VDC power input. Field power can be used to supply power for some types of I/O modules, such as digital input and analog output modules.

12/24 VDC

Front View

Connecting the Field Power Ground

Connect the Field Ground pin ($\perp$)
to the field power ground.

Front View
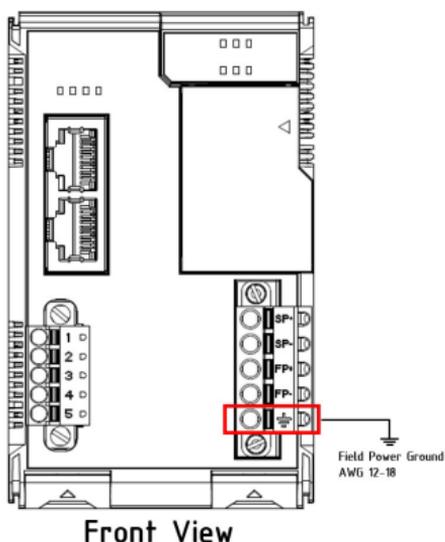
Connecting to the Network

Ethernet Communication

The ioThinx 4530 Series is equipped with two RJ45 LAN ports with two
MAC addresses. Connect a network Ethernet cable to either port to
provide an Ethernet connection to the unit.

Serial Communication

The ioThinx 4530 Series is equipped with a 3-in-1 serial interface that
supports either 1 RS-232 port, 1 RS-422 port, or 2 RS-485 ports. Refer
to the pin assignment table below for details.

Front View
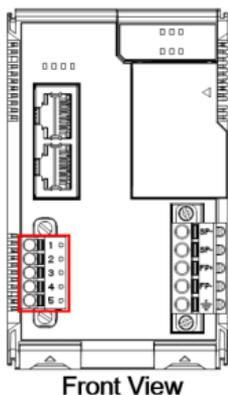
| PIN	RS-232 (P1)	RS-422 (P1)	RS-485 (P1/P2)
1	TXD	TXD+	DATA 1+
2	RXD	TXD-	DATA 1-
3	RTS	RXD+	DATA 2+
4	CTS	RXD-	DATA 2-
5	GND	GND	GND

45M Module Wiring

For more detailed information about 45M module wiring, additional
ioThinx 4530 Series documentation can be downloaded from the Moxa
website.

Installing the System on a DIN Rail

Reserve at least 55 mm of space above the DIN rail to ensure that there is enough room to install the unit.

Step 1: Hook the top mounting clip of the unit onto the DIN rail and then rotate the unit downwards until the bottom mounting clip comes in contact with the DIN rail.
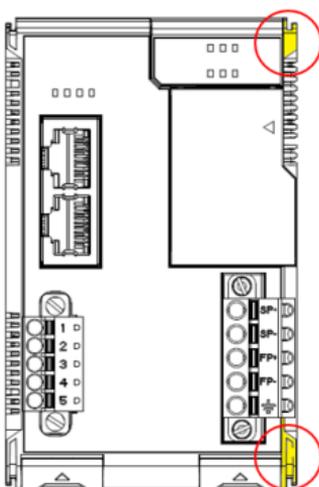
Reserve 55 mm space above DIN-rail
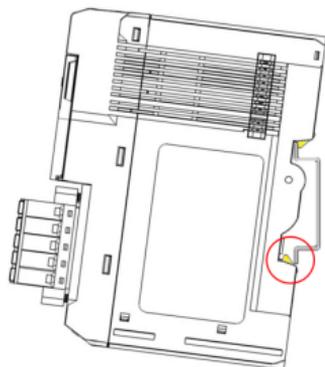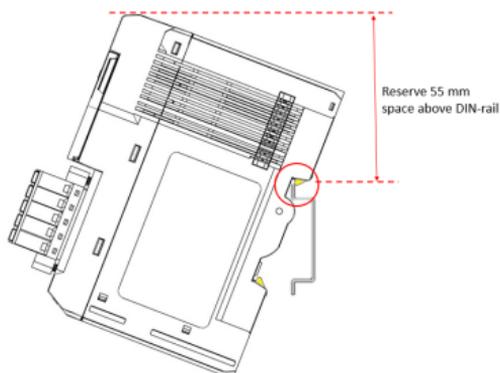
Step 2: Push the unit towards the DIN rail until the mounting clip snaps into place.
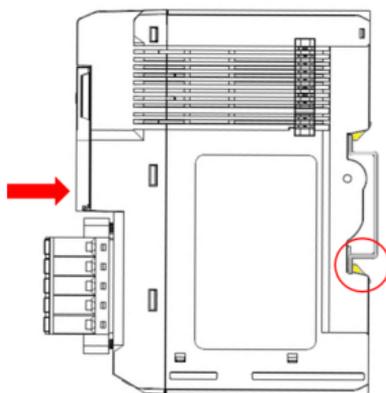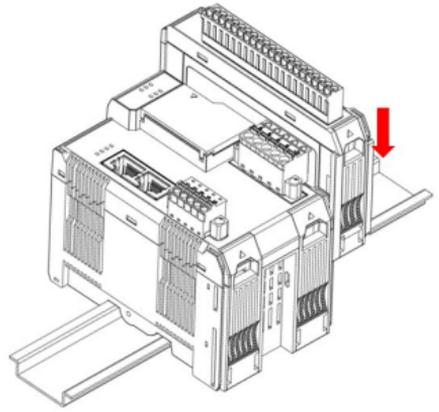
Installing a 45M Module on a DIN Rail

Step 1: Align the 45M module side by side with the head/CPU module, making sure that the upper and lower rails are hooked together.

Step 2: Push the 45M module until it touches the DIN rail. Next, apply more force until the module clips to the DIN rail.

NOTE After the module is firmly attached to the DIN rail, the connections between the module and the internal bus will be established.

Removing a 45M Module from a DIN Rail
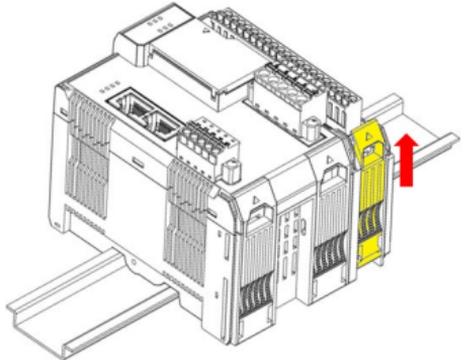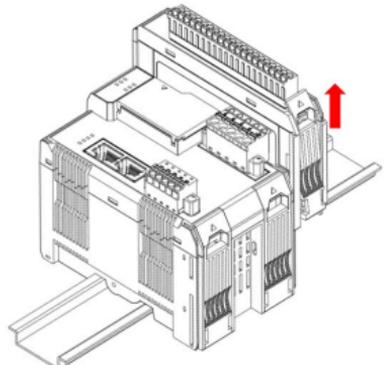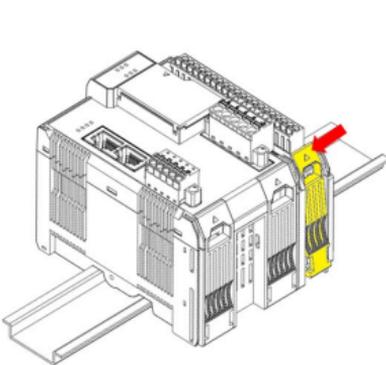
⚠️ **WARNING**

Be sure the power is off before removing modules to avoid damaging the equipment.

Step 1: Use your finger to lift the release tab on the lower part of the module.

Step 2: Push the top of the release tab to latch it, and then pull the module out.

NOTE Electrical connections for the internal bus will be disconnected when the 45M module is removed.

Installing Covers on the First and Last Modules

Attach the covers to the first and last module to protect the modules' contacts.
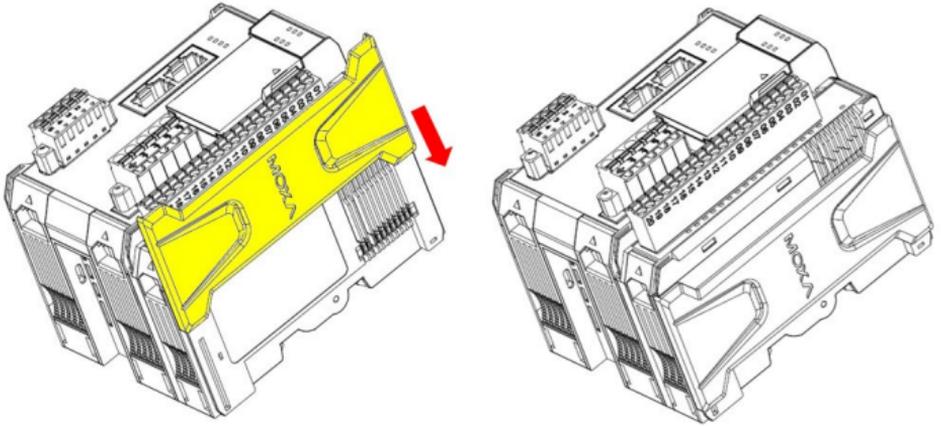
> ⚠ **NOTICE**
>
> Be sure to attach the covers to provide protection against electrostatic discharge.

Horizontal Installation

Before installing the device, make sure there is enough space between the device and nearby items (walls, other devices, etc.) to ensure proper heat dissipation.

To ensure that the device works properly, we suggest reserving at least 30 mm of space on each of the four sides, as shown in the figure.
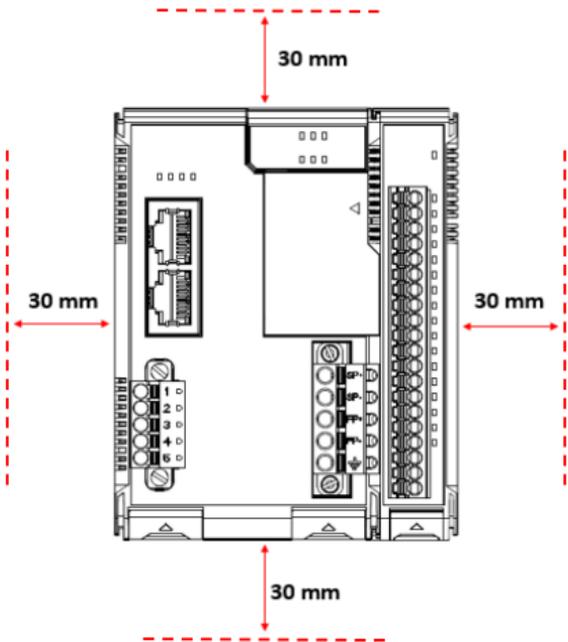
> ⚠ **CAUTION**
>
> Do not install the device vertically. If the device is installed vertically, the fanless heat dissipation design will not perform as intended.

LED Indicators

Label	Usage	Qty	Color	Action
SP	System Power	1	Green	On: Power on Off: Power off
FP	Field Power	1	Green	On: Power on Off: Power off
RDY	System (kernel)	1	Green/Red	Green: System ready Green (blinking): System is booting up Red: System error, or executing factory default Red (blinking): Triggering factory default, or upgrading the firmware
U1/U2	User defined	1 of each	Green/Red	User-defined
SD	microSD card	1	Green	Green: SD card is inserted OFF: SD card is being accessed
L1/L2	Ethernet	1 of each	Green/Amber	Green: 100Mb Amber: 10Mb Blinking: Data is being transmitted Off: Inactive
P1/P2	Serial	1 of each	Green/Amber	Green: Tx Amber: Rx Blinking: Data is being transmitted Off: Inactive

Connecting to the ioThinx 4530 Series Controller

Use the following configuration information to log in to the ioThinx 4530 Series controller:

Port	Default IP	Subnet Mask
LAN1	192.168.127.254	255.255.255.0
LAN2	192.168.126.254	255.255.255.0

- Username: moxa
- Password: moxa

NOTE Be sure to configure the host PC's IP address to use the same subnet as the unit. For example, 192.168.127.253 for LAN1 port.

Loading the Factory Default Settings

1. Power off the device.
2. Press and hold the reset button; while holding the reset button:
   a. Power on the device; the RDY LED will blink green while the device is booting up.
   b. After the device has booted up, the RDY LED will blink red; continue holding the reset button until the RDY LED stops blinking.
3. Release the reset button to load the factory default settings.

> **NOTE** It should take about 20 seconds from the time the RDY LED starts blinking green until it stops blinking red.
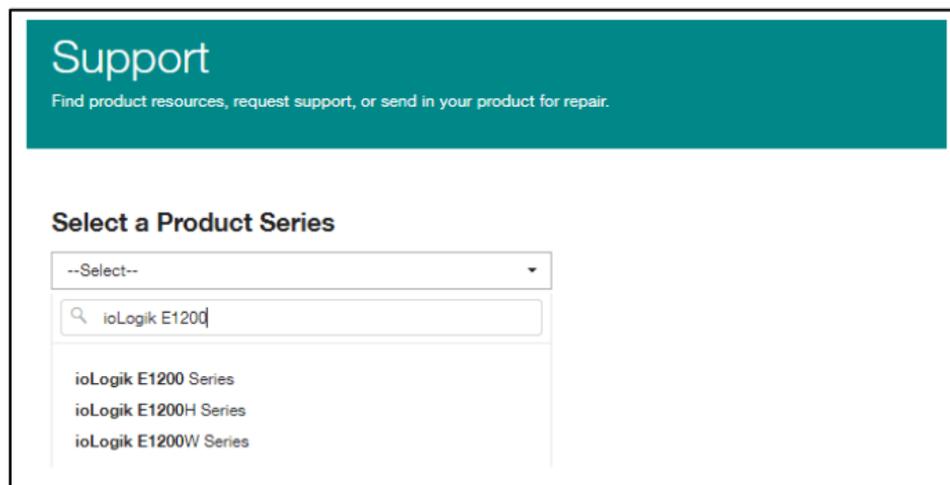
How to Download the Software

Related software packages can be downloaded from the Moxa website.

Step 1: Go to the following address:
https://www.moxa.com/en/support

Step 2: Select a product list from the drop-down box or type the model name in the search box. In the following screenshot, the ioLogik E1200 Series is used to illustrate.

Step 3: Go to the Software & Documentation page to download the latest software for the product.

Specifications

Input Current	System Power: 1.94 A (Max.)
	Field Power: 2 A (Max.)
Input Voltage	System Power: 12 to 48 VDC
	Field Power: 12/24 VDC
Operating Temperature	Standard Models:
	-20 to 60°C (-4 to 140°F)
	Wide Temp. Models:
	-40 to 75°C (-40 to 167°F)
Storage Temperature	-40 to 85°C (-40 to 185°F)

Attention

1. This device is only for indoor use in environments with pollution degree 2.
2. This device has field power ground and two ground pins on the back of the device. For surge protection, connect the field power ground pin to your field power ground and connect the DIN rail to earth ground. See pages 3 and 4 for location and wiring information.
3. Cables rated for a minimum temperature of 105°C must be used for the Power Supply Terminal.
4. We suggest using the following cable types for wiring:
    - ioThinx 4530 Series:
      > AWG 12 to 16 for power connections
      > AWG 16 to 28 for serial connections
      > AWG 12 to 18 for field power ground connections
    - 45MR-7210:
      > AWG 12 to 16 for power connections
    - 45MR-2600/2601/2606 Digital Output Terminals:
      > AWG 16 to 18
    - 45MR-2404 Relay Output Terminal:
      > AWG 16 to 18
    - All other 45MR modules:
      > AWG 16 to 24