

# **ioThinX 4500 Series (45MR) Modules Quick Installation Guide**

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**Version 1.7, March 2024**

**Technical Support Contact Information**  
**[www.moxa.com/support](http://www.moxa.com/support)**

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**P/N: 1802045001016**



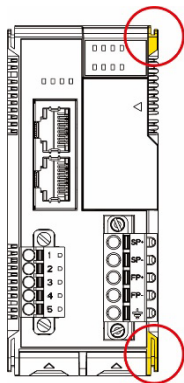
## Package Checklist

- 1 x ioThinx 4500 (45M) module
- 1 x quick installation guide (printed)

## Installation

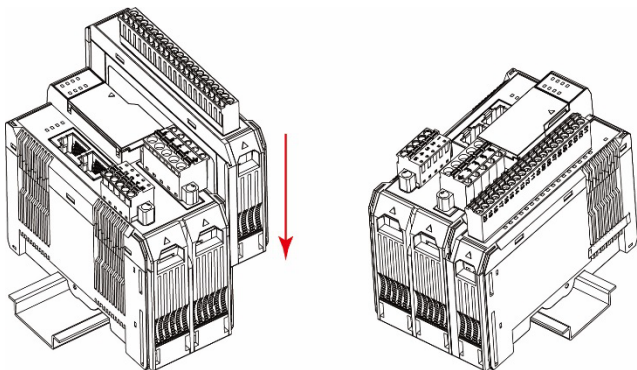
### Installing a 45M Module on a DIN Rail

**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:** Align the 45M module side by side with the head/CPU module and then push the 45M module until it touches the DIN rail.

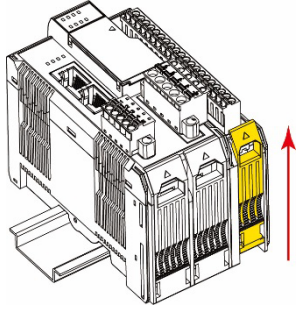
Next, apply more force until the module clips to the DIN rail.



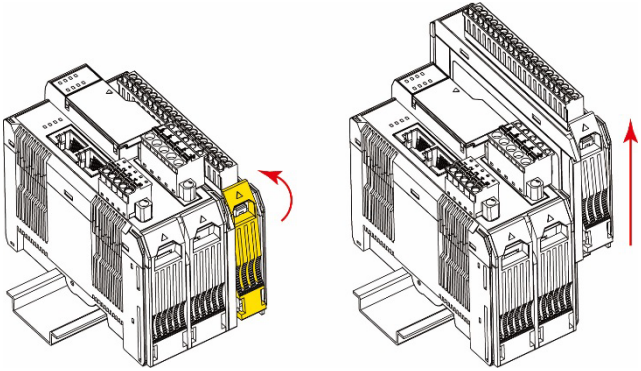
**NOTE** After the module is firmly attached to the DIN rail, the module connections to the internal bus will be established.

## Removing a 45M Module from a DIN Rail

**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 to the internal bus will be disconnected when the 45MR module is removed..

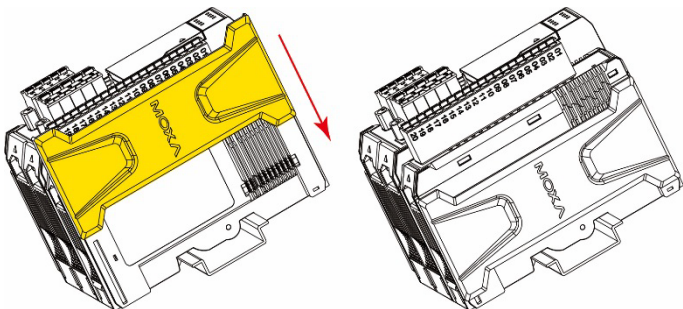


### **WARNING**

Ensure that the power is off before removing modules to avoid damaging the equipment.

## Installing the Covers on the First and Last Module

Attach the covers to the first and last module to cover the modules' contacts.



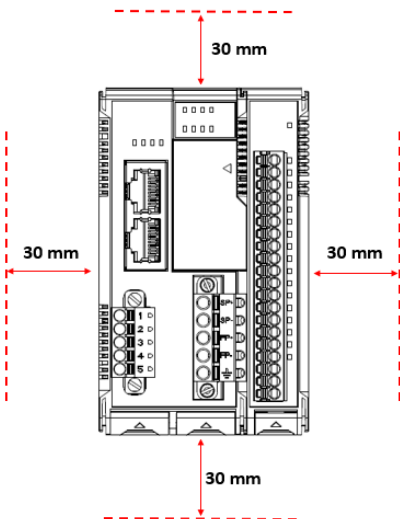
### NOTICE

Covers must be installed on the first and last modules to protect the device from 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 the amount of space indicated in the adjacent 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

Labeling	Indication	Description
Status	Status	Green: Module ready Green Slow Blinking: Booting up Green Fast Blinking: Locating Red: Module error Red Slow Blinking: Upgrading firmware Red Fast Blinking: Safe mode (output module only) Off: Power off
I/O Channel	Channel Status	Please refer to the ioThinX 4500 Series User's Manual

## Module Configuration

Please refer to the ioThinX 4500 Series User's Manual.

## Specifications

Input Current	Varies per module; please refer to the datasheet
Input Voltage	System power: <ul style="list-style-type: none"> <li>45 MR Series except 45MR-7210): 3.3 VDC, internal bus via the ioThinX 4510/4533,</li> <li>45MR-7210: 12 VDC to 48 VDC</li> </ul> Field Power: <ul style="list-style-type: none"> <li>12/24 VDC, via the ioThinX 4510/4533, 45MR-7210</li> <li>DO modules (45MR-2600/2601/2606) must use an external power supply for field power</li> </ul>
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)

## Hazardous Locations Information

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**Ex ec IIC T4 Gc**

**UL 20 ATEX 2412X**

Compliant Models 45MR-1600(-T), 45MR-1601(-T), 45MR-2600(-T), 45MR-2601(-T), 45MR-2606(-T), 45MR-3800(-T), 45MR-3810(-T), 45MR-6600(-T), 45MR-6810(-T), 45MR-7820(-T), 45MR-4420(-T), 45MR-7210(-T)

Standards EN IEC 60079-0:2018  
EN IEC 60079-7:2015 + A1:2018

Conductors suitable for the rated cable temperature  $\geq 120^{\circ}\text{C}$



**Ex ec nC IIC T4 Gc**

**UL 20 ATEX 2412X**

Compliant Model 45MR-2404(-T)  
Standards EN IEC 60079-0:2018  
EN IEC 60079-7:2015 + A1:2018  
EN IEC 60079-15:2019

Conductors suitable for the rated cable temperature  $\geq 120^{\circ}\text{C}$

Address of Manufacturer Moxa Inc.  
No. 1111, Heping Rd., Bade Dist., Taoyuan City  
334004, Taiwan

### **Special Conditions of Use**

1. The equipment shall only be used in an area with a pollution degree 2 or lower as defined in EN IEC 60664-1.
1. The equipment shall be installed in an enclosure that provides a minimum ingress protection of IP54 in accordance with EN IEC 60079-0.
2. The 45M has a ground pin on the back of the device. For surge protection, connect the DIN rail to earth ground.
3. Cables rated for a minimum temperature of  $120^{\circ}\text{C}$  must be used for the Power Supply Terminal.
4. We suggest using the following cable types for wiring:
  - 45MR-7210:
    - Wiring: AWG 12 to 18 for power connections (ferrule diameter: 2.053 to 1.024 mm)
    - Strip Length: 12 to 13 mm
  - 45MR-2600/2601/2606 Digital Output Terminals:
    - Wiring: AWG 18 to 22 (ferrule diameter: 1.024 to 0.644 mm)
    - Strip Length: 9 to 10 mm
  - 45MR-2404 Relay Output Terminal:
    - Wiring: AWG 18 (ferrule diameter: 1.024 mm)
    - Strip Length: 9 to 10 mm
  - All other 45MR modules:
    - Wiring: AWG 18 to 24 (ferrule diameter: 1.024 to 0.511 mm)
5. Terminal blocks do not accommodate more than one individual conductor per clamping point.



## **ATTENTION**

These devices are open-type devices that are to be installed in an enclosure only accessible with the use of a tool that is suitable for the environment.

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, and D or nonhazardous locations only.



## **WARNING—EXPLOSION HAZARD**

Do not disconnect the equipment unless the power has been removed or the area is known to be nonhazardous.

Substitution of any components may impair the suitability for Class I, Division 2.



## **WARNING**

The debug port and console port are FOR MAINTENANCE ONLY, NOT FOR USE IN HAZARDOUS LOCATIONS.