

# ioThinx 4500 Series (45ML) Modules

Communication modules for the ioThinx 4500 Series



## Features and Benefits

- Communication modules include the serial interface
- Easy tool-free installation and removal
- Wide operating temperature model available: -40 to 75°C (-40 to 167°F)

## Certifications

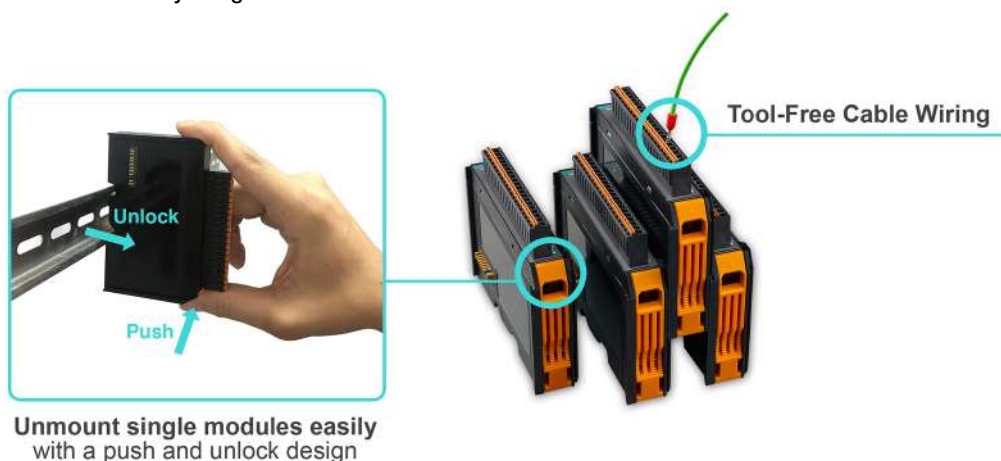


## Introduction

The 45ML series includes serial interface modules that can be used with the ioThinx 4500 Series head/CPU module, which has the communication bus installed on the left side. With its unique mechanical design, hardware installation and removal can be done easily without tools, greatly reducing the amount of time required to set up and replace the modules.

## Easy Tool-Free Installation and Removal

The ioThinx 4500 Series has a unique mechanical design that reduces the amount of time required for installation and removal. In fact, screwdrivers and other tools are not required for any part of the hardware installation, including mounting the device on a DIN-rail, as well as connecting the wiring for both communication and I/O signal acquisition. Furthermore, no tools are required to remove the ioThinx from a DIN-rail. Removing all of the modules from a DIN-rail is also easy using the latch and release tab.



## Specifications

### Input/Output Interface

Isolation	3k VDC or 2k Vrms
-----------	-------------------

### Serial Interface

Connector	Spring-type Euroblock terminal
No. of Ports	45ML-5401 Series: 4
Serial Standards	45ML-5401 Series: RS-232, RS-422, RS-485-2w

Baudrate	45ML-5401 Series: 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps
Data Bits	45ML-5401 Series: 7, 8
Stop Bits	45ML-5401 Series: 1, 2
Parity	45ML-5401 Series: Even, None, Odd
Flow Control	45ML-5401 Series: RTS/CTS (RS-232 only), XON/XOFF
Pull High/Low Resistor for RS-485	45ML-5401 Series: 10 kilo-ohm
RS-485 Data Direction Control	45ML-5401 Series: ADDC® (automatic data direction control)

### Serial Signals

RS-232	TxD, RxD, RTS, CTS, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND

### Power Consumption

System Power	45ML-5401 Series: 74.1 mA @ 12 VDC 45ML-5401 Series: 37.05 mA @ 24 VDC
Field Power	45ML-5401 Series: 140.4 mA @ 12 VDC 45ML-5401 Series: 59.8 mA @ 24 VDC

### Physical Characteristics

Housing	Plastic
Dimensions	26.4 x 99 x 65.5 mm (1.04 x 3.9 x 2.58 in)
Weight	45ML-5401 Series: 115 g (0.254 lb)
Installation	DIN-rail mounting
Wiring	Serial cable, 18 to 24 AWG
Strip Length	Serial cable, 9 to 10 mm

### Environmental Limits

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 (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Altitude	Up to 2000 m <sup>1</sup>

### Standards and Certifications

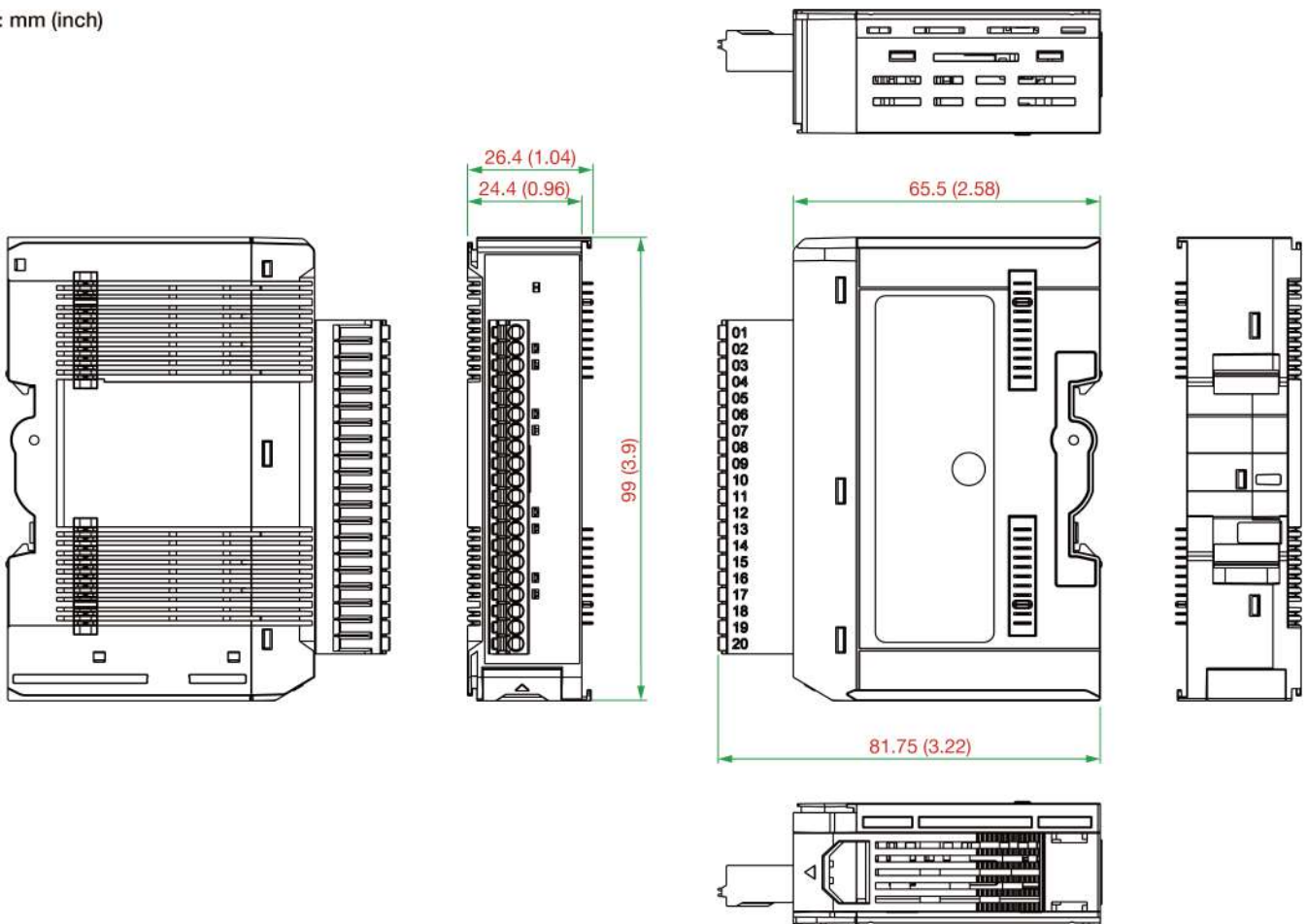
EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 3 V/m IEC 61000-4-4 EFT: Power: 1 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 2 kV; Signal: 1 kV IEC 61000-4-6 CS: 3 V IEC 61000-4-8 PFMF

1. Please contact Moxa if you require products guaranteed to function properly at higher altitudes.

Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6
<b>Declaration</b>	
Green Product	RoHS, CRoHS, WEEE
<b>MTBF</b>	
Time	45ML-5401 Series: 916,671 hrs
Standards	Telcordia SR332
<b>Warranty</b>	
Warranty Period	5 years
Details	See <a href="http://www.moxa.com/warranty">www.moxa.com/warranty</a>
<b>Package Contents</b>	
Device	1 x 45ML Series product
Installation Kit	1 x terminal block, 20-pin, 3.5 mm
Documentation	1 x quick installation guide 1 x warranty card

## Dimensions

Unit: mm (inch)



## Ordering Information

Model Name	Input/Output Interface	No. of Ports	Operating Temp.
45ML-5401	RS-232, RS-422, RS-485-2w	4	-20 to 60°C
45ML-5401-T	RS-232, RS-422, RS-485-2w	4	-40 to 75°C

© Moxa Inc. All rights reserved. Updated Jan 16, 2021.

This document and any portion thereof may not be reproduced or used in any manner whatsoever without the express written permission of Moxa Inc. Product specifications subject to change without notice. Visit our website for the most up-to-date product information.