ioThinx

Tailor-made for IIoT applications, the compact, intelligent, and secure ioThinx 4500 Series advanced modular controllers and remote I/Os provide I/O-to-cloud connectivity and IT/OT protocol convergence.

Cloud Connectivity

Cybersecurity

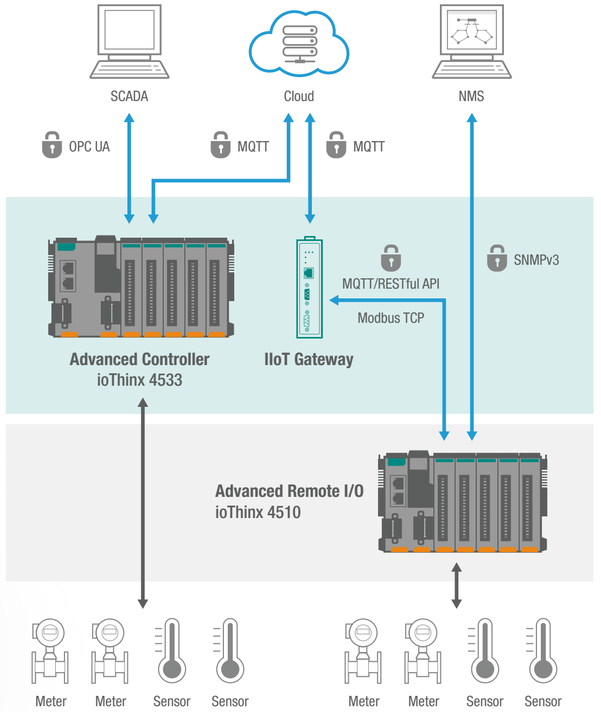
Tool-free Installation and Removal

"The excellent innovation of the ioThinx 4500 Series is based on its simple yet smart installation principle, which saves a lot of time and effort."

Red Dot Award Jury, Product Design 2019

reddot award 2019
winner industrial design

Moxa's ioThinx 4500 Series products are IIoT-ready modular controllers and I/Os featuring programming capability, cloud connectivity, high computing power, and a system-wide cybersecurity design. The ioThinx Series is specifically designed for Industrial IoT applications to deploy your I/O data to the cloud effortlessly and securely. The ioThinx 4500 Series consists of the ioThinx 4533 advanced modular controller and the ioThinx 4510 IIoT-ready remote I/O. Refer to the suggested appliction structure below:



ioThinx 4533 Advanced Modular Controller

CPU	NXP i.MX7D 1GHz
Power Inputs	System Power: 12 to 48 VDC; Field Power: 12/24 VDC
Expansion Modules	64
Operating System	Linux kernel 4.4 (CIP, PREEMPT_RT), Debian 9
Memory	512 MB DDR3
Storage (pre-installed)	8 GB eMMC
Programming Language	C/C++, Python
Operating Temperature	Standard Models: -20 to 60°C (-4 to 140°F); Wide Temp. Models: -40 to 75°C (-40 to 167°F)

Cloud Connectivity

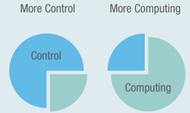
Save field-site data to the cloud with the built-in Azure/AWS/Alibaba SDK library. In addition, streamline your operations with OPC UA to SCADA capability.

Programming Language

Supports a variety of programming languages, including:
- Python
- C/C++
- Node-Red

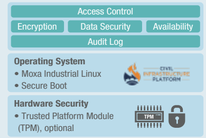
Precision Control

Achieve control and computing balance in one device by using a real-time OS to prioritize application settings.



System-wide Cybersecurity Design

Systematic Security Protection to help users mitigate cybersecurity threats.



ioThinx 4510 Advanced Modular Remote I/O

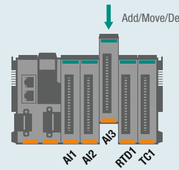
Power Inputs	System Power: 12 to 48 VDC; Field Power: 12/24 VDC
Expansion Modules	32
IT Protocols	SNMPv1/v2c/v3, RESTful API, MQTT
OT Protocols	Modbus/TCP Server (slave)
Gateway Function	Modbus/RTU Master to Modbus/TCP, SNMP, RESTful API, MQTT
Operating Temperature	Standard Models: -20 to 60°C (-4 to 140°F); Wide Temp. Models: -40 to 75°C (-40 to 167°F)

Cloud Connectivity

The ioThinx 4510 Series supports MQTT protocols that can be connected to the cloud with a reasonable number of mouse clicks. If you are using a web HMI or NMS for data supervision on a private cloud, you can make the connection using a RESTful API or SNMP, respectively.

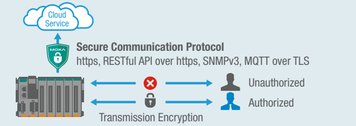
Auto Reconfiguration

You only need to make a few simple changes, with no reconfiguration effort required. Simply fine tune the modules you want to change, and keep the others as is.



Cybersecurity

The ioThinx 4510 Series is compliant with IEC 62443 level 1.



Confidentiality
- Authentication: Account management, Login Policy, Session Management

Integrity
- Access Control: Role-based access control, IP-based whitelist

Availability
- Interface protection: Network port protection, service disabled by default

45MR Modules for the ioThinx 4500 Series

	45MR-1600(-T)	45MR-1601(-T)	45MR-2600(-T)	45MR-2601(-T)	45MR-2606(-T)	45MR-2404(-T)	45MR-3800(-T)	45MR-3810(-T)	45MR-4420(-T)	45MR-6600(-T)	45MR-6810(-T)
Digital Inputs	16 (PNP)	16 (NPN)	–	–	8 (PNP)	–	–	–	–	–	–
Digital Outputs	–	–	16 (sink)	16 (source)	8 (source)	–	–	–	–	–	–
Relays	–	–	–	–	–	4 (Form A)	–	–	–	–	–
Analog Inputs	–	–	–	–	–	–	8 (0/4-20 mA)	8 (-10/0-10 V)	–	–	–
Analog Outputs	–	–	–	–	–	–	–	–	4 (0/4-20 mA, 0-10 V)	–	–
RTDs	–	–	–	–	–	–	–	–	–	6	–
Thermocouples	–	–	–	–	–	–	–	–	–	–	8
Operating Temp.	Standard Models: -20 to 60°C (-4 to 140°F); Wide Temp. Models (-T): -40 to 75°C (-40 to 167°F)										

Please visit our website for the most up-to-date product information.