

## MX210 Series

The Ethernet I/O-Modules of the MX210 series are available in different variants depending on the combination of the number, type, and properties of their inputs and outputs. The MX210 series includes modules featuring high-frequency inputs of up to 100 kHz for high-speed counting.

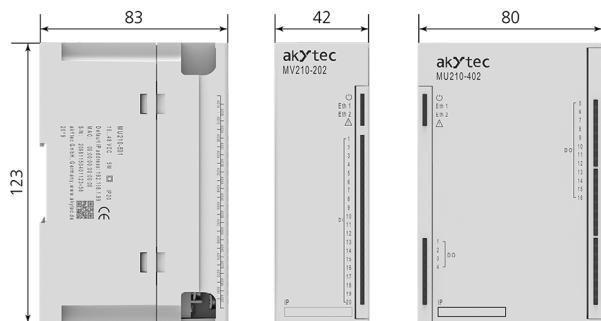
Each module of this series has two built-in Ethernet ports. This allows interconnection of these devices according to the daisy chain connection, which stands out by simplicity and scalability. The two Ethernet ports are bypass-capable, meaning that the data transfer is not interrupted even if one of the modules fails.

Any MX210 extension module can simultaneously communicate with up to 4 TCP clients, which facilitates cabling and configuring of the control system.

### Functions and features:

- Up to 32 DI / 16 DO | up to 8 AI / 8 AO
- A wide range of various digital and analog inputs and outputs
- Network status diagnostics
- Supported protocols: Modbus TCP, MQTT, SNMP, SNTP
- 2-port Ethernet Switch (LAN bypass)
- Daisy-Chain Wiring
- Alarm signals
- Real-time clock
- Data logging
- Group configuration of multiple modules
- Easy mounting and connection
- Free of charge configuration tool

### Dimensions:



Modbus TCP



2 Ethernet ports



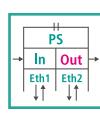
Daisy-Chain Wiring with LAN bypass



USB interface



Galvanic isolation



Data logging



DIN rail mounting



Wall mounting



Ambient temperature



Free software included



**Overview table:**

Module	Digital inputs	Digital outputs	Analog inputs	Analog outputs	Properties
<b>Input modules</b>					
MV210-101			8		Inputs: RTD, TC, 0-5 mA, 0(4)-20 mA, 0-1 V, 0...(2)5 kohm
MV210-202	20				Inputs: switch contacts, NPN/PNP sensors, pulse counters (24 V DC external power supply, measuring frequency up to 100 kHz)
MV210-204	20				Inputs: switch contacts (no external power supply required), NPN sensors, pulse counters (24 V DC external power supply, measuring frequency up to 400 Hz)
MV210-212	32				Inputs: switch contacts, NPN/PNP sensors, pulse counters (24 V DC external power supply, measuring frequency up to 100 kHz)
MV210-214	32				Inputs: switch contacts (no external power supply required), NPN sensors, pulse counters (24 V DC external power supply, measuring frequency up to 400 Hz)
MV210-221	15				6 inputs: switch contacts (no external power supply required), NPN sensors, pulse counters (24 V DC external power supply, measuring frequency up to 400 Hz). 9 inputs: AC 230V
<b>Combined I/O-Modules</b>					
MK210-311	6	8			Inputs: switch contacts (no external power supply required), NPN sensors; Outputs: relays (NO), 5 A at 250 VAC, cos > 0.4 or 3 A at 30 VDC
MK210-312	12	4			Inputs: switch contacts (24 V DC external power supply), NPN/PNP sensors; Outputs: relays (NO), 5 A at 250 VAC, cos > 0.4 or 3 A at 30 VDC
<b>Output modules</b>					
MU210-401		8			Outputs: relays (NO) 5 A at 250 VAC, cos > 0.4 or 3 A at 30 VDC
MU210-402		16			Outputs: relays (NO) 5 A at 250 VAC, cos > 0.4 or 3 A at 30 VDC
MU210-502				6	Outputs: 0(4)...20 mA, 0...(1)10 V, accuracy 0.5 %

**Technical data:**

<b>Supply</b>	
Power supply	24 (10...48) V DC
<b>Communication</b>	
Interface	Ethernet 10/100 Mbps
Protocol	Modbus TCP, MQTT, SNMP, SNTP
Configuration	USB 2.0 (USB micro), Ethernet 10/100 Mbps
<b>Environment</b>	
Ambient temperature	-40...+55 °C
Storage temperature	-25...+55 °C
Humidity	up to 80%, non-condensing
IP Code	IP20
Appliance class	II

**Analog input module**  
**MV210-101**



- 8AI**
- 4-20 mA**
- TC**
- RTD**

**Digital input module**  
**MV210-202**



- 20 DI**
- NPN**
- PNP**
- FAST**

<b>Analog inputs</b>	8
<b>ADC resolution</b>	16 bit
<b>Input signals</b>	
Resistance thermometer	Pt50, Pt100, Pt500, Pt1000 Ni100, Ni500, Ni1000
Thermocouple	A, J, N, K, S, R, B, T
Position encoder	0-2(5) kohm
Standard signal	-1...1 V, -50...+50 mV, 0-5 mA, 0-20 mA, 4-20 mA

<b>Digital inputs</b>	20
<b>Input signals</b>	Switch contact, NPN/PNP
<b>Power consumption, max.</b>	5 W
<b>Pulse frequency, max.</b>	100 kHz
<b>Pulse length, min.</b>	5 µs (1-8 DI) 1 ms (9-20 DI)
<b>Integrated voltage source</b>	24±3 V
<b>Logical „1“, min</b>	5.5 mA (8.8...30.0 V)
<b>Logical „0“, max</b>	1.2 mA (0.0...6.1 V)

**Digital input module**  
**MV210-204**



- 20 DI**
- NPN**

**Digital input module**  
**MV210-212**



- 32 DI**
- NPN**
- PNP**
- FAST**

<b>Digital inputs</b>	20
<b>Input signals</b>	Switch contact, NPN
<b>Power consumption, max.</b>	5 W
<b>Pulse frequency, max.</b>	400 Hz
<b>Pulse length, min.</b>	1 ms
<b>Integrated voltage source</b>	no external power supply required 24±3 V (only for NPN inputs)
<b>Lead resistance, max.</b>	100 ohm

<b>Digital inputs</b>	32
<b>Input signals</b>	Switch contact, NPN/PNP
<b>Power consumption, max.</b>	9 W
<b>Pulse frequency, max.</b>	100 kHz
<b>Pulse length, min.</b>	5 µs (1-8 DI) 1 ms (9-32 DI)
<b>Integrated voltage source</b>	24±3 V
<b>Logical „1“, min</b>	5.5 mA (8.8...30.0 V)
<b>Logical „0“, max</b>	1.2 mA (0.0...6.1 V)

**Digital input module  
MV210-214**



**32 DI**  
**NPN**

**Digital input module  
MV210-221**



**15 DI**  
**NPN**

I/O-MODULES

<b>Digital inputs</b>	32
<b>Input signals</b>	Switch contact, NPN
<b>Pulse frequency, max.</b>	400 Hz
<b>Pulse length, min.</b>	1 ms
<b>Integrated voltage source</b>	no external power supply required 24±3 V (only for NPN inputs)
<b>Lead resistance, max.</b>	100 ohm

<b>Digital inputs</b>	9+6
<b>Input signals</b>	230 V AC signals + dry contact NPN
<b>Pulse frequency, max.</b>	400 Hz
<b>Pulse length, min.</b>	1 ms
<b>Integrated voltage source</b>	no external power supply required 24±3 V (only for NPN inputs)
<b>Lead resistance, max.</b>	100 ohm

**Digital I/O module  
MK210-311**



**6 DI**  
**8 DO**  
**NPN**

**Digital I/O module  
MK210-312**



**12 DI**  
**NPN**  
**PNP**  
**4 DO**

<b>Digital inputs</b>	6
<b>Input signal</b>	Switch contact, NPN
<b>Pulse length, min.</b>	1 ms
<b>Integrated voltage source</b>	24±3 V (only for NPN inputs)
<b>Lead resistance, max.</b>	100 ohm
<b>Digital outputs</b>	8
<b>Type</b>	Relay output (NO)
<b>Permissible load</b>	5 A, 250 V AC; 3 A, 30 V DC

<b>Digital inputs</b>	12
<b>Input signal</b>	Switch contact, NPN/PNP
<b>Pulse frequency, max.</b>	100 kHz
<b>Pulse length, min.</b>	5 µs (1-8 DI) 1 ms (9-12 DI)
<b>Logical „1”, min</b>	5.5 mA (8.8...30.0 V)
<b>Logical „0”, max</b>	1.2 mA (0.0...6.1 V)
<b>Digital outputs</b>	4
<b>Type</b>	Relay output (NO)
<b>Permissible load</b>	5 A, 250 V AC; 3 A, 30 V DC

**Digital output module**  
**MU210-401**



8 DO

RELAY

**Digital output module**  
**MU210-402**



16 DO

RELAY

<b>Digital outputs</b>	8
<b>Output signal</b>	Relay output (NO)
<b>Power consumption, max.</b>	6 W
<b>Permissible load</b>	5 A, 250 V A; 3 A, 30 V DC;
<b>Pulse frequency, max.</b>	1 Hz
<b>Pulse length, min.</b>	50 ms

<b>Digital outputs</b>	16
<b>Output signal</b>	Relay output (NO)
<b>Power consumption, max.</b>	9 W
<b>Permissible load</b>	5 A, 250 V A; 3 A, 30 V DC;
<b>Pulse frequency, max.</b>	1 Hz
<b>Pulse length, min.</b>	50 ms

**Analog output module**  
**MU210-502**



6 AO

4-20 mA

0-10V

<b>Analog outputs</b>	6
<b>Type</b>	0(4)...20 mA, 0...10 V
<b>Accuracy</b>	±0.5%
<b>Power consumption, max</b>	5 W