

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.

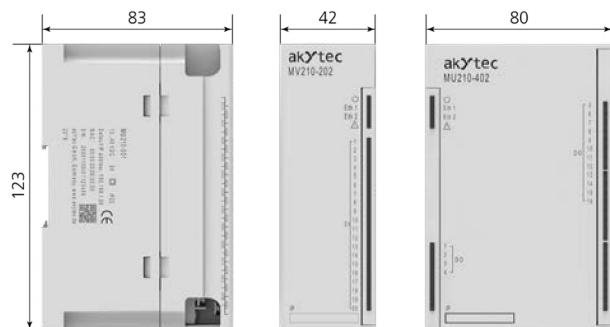
Each module of this series has two built-in Ethernet ports. This allows interconnection of these devices according to the daisy chain connection, which stands out by simplicity and scalability. The two Ethernet ports are bypass-capable, meaning that the data transfer is not interrupted even if one of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



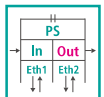
Daisy-Chain Wiring with LAN bypass



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
Input modules					
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
Combined I/O-Modules					
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
Output modules					
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
MU210-410		16			Outputs: transistors (PWM up to 60 kHz) High-side switch - 0.8A High- or low-side switch - 0.1A
MU210-501			8		Outputs: 0(4)...20 mA, 0...(1)10 V, accuracy 0.25 %

Technical data:

Supply	
Power supply	24 (10...48) V DC
Communication	
Interface	Ethernet 10/100 Mbps
Protocol	Modbus TCP, MQTT, SNMP, SNTIP
Configuration	USB 2.0 (USB micro), Ethernet 10/100 Mbps
Environment	
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



8 AI

4-20
mA

TC

RTD

Analog inputs	8
ADC resolution	16 bit
Input signals	
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

Digital input module MV210-202



20 DI

NPN

PNP

FAST

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

Digital input module MV210-204



20 DI

NPN

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

Digital input module MV210-212



32 DI

NPN

PNP

FAST

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

Digital input module MV210-214



32 DI

NPN

Digital input module MV210-221



15 DI

NPN

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

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

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

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

Digital output module MU210-401



8DO

RELAY

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

Digital output module MU210-402



16DO

RELAY

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

Digital output module MU210-410



16DO



FAST

Digital outputs	16
Output signal	Transistor output
Power consumption, max.	5 W
Permissible load	100 mA / 800 mA, 10...36 V DC
Pulse frequency, max.	60 kHz / 10kHz
Pulse length, min.	10 µs / 1 µs

Analog output module MU210-501



8AO

4-20
mA

0-10V

Analog outputs	8
Type	0(4)-20 mA, 0-1(10) V
Accuracy	± 0.25 %
Power consumption, max.	5 W
DAC resolution	12 bits

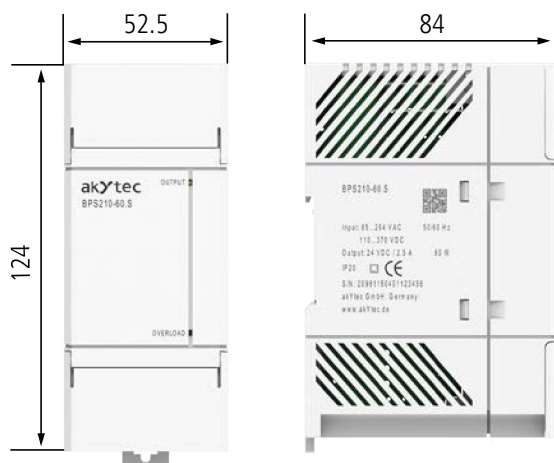
BPS210-60.S

The BPS210-60.S is a two phase power supply unit with an integrated output-relay fit for the demanding solutions. It offers maximum functionality for applications in complex systems and machines. The power supply steps down the voltage from 230V AC to 24V DC. Output voltage can be adjusted with a trimmer (+8%). Thanks to the extremely space-saving narrow design, they are particularly suitable for industrial applications in switch boxes or in small control cabinets. To increase the output power, several power supply units of the same type can be connected in parallel. Warning! Improper use can lead to hazards such as short circuit, fire, electric shock, etc.

Functions and features:

- Relay output for alarm
- Parallel connection (for power redundancy).
- Adjusting output voltage ($\pm 8\%$)
- High stability of output voltage (permissible variation less than 2 %)
- Minimum ripple (0.5%)
- Voltage and current output limit
- Overvoltage and surge protection
- Overload, short circuit and overheat protection
- Universal AC/DC input voltage range

Dimensions:



Input signal

85...264
VAC
110...370
VDC

Output signal

24 V DC
2.5A

1 Relay output

1DO

Power backup



Adjusting output voltage

$\pm 8\%$

Output current limitation



Galvanic isolation



DIN rail mounting



Wall mounting



Ambient temperature

+70°C
-40°C

Technical data:

Output	
Rated output voltage	24 V DC
Rated output current	2.5 A
Rated output power consumption	60 W
Output voltage adjustment	±8 %
Pulse voltage alteration, max.	120 mV
Input	
Output voltage limits	
AC	85...264 V, 45...65 Hz 85...264 V, 45...65 Hz
DC	110...370 V
Current consumption	1.25 A
Inrush current	36 A
Efficiency	85%
ADC resolution	12 bit
Protection	
Output current limit	104 ... 116% of rated current
Output voltage limit	150% of rated voltage
IP Code	IP20
Environmental conditions	
Ambient temperature	-40...+70 °C
Transportation and storage	-40...+50 °C
Enclosure	
Weight	max. 0.5 kg

Backup: