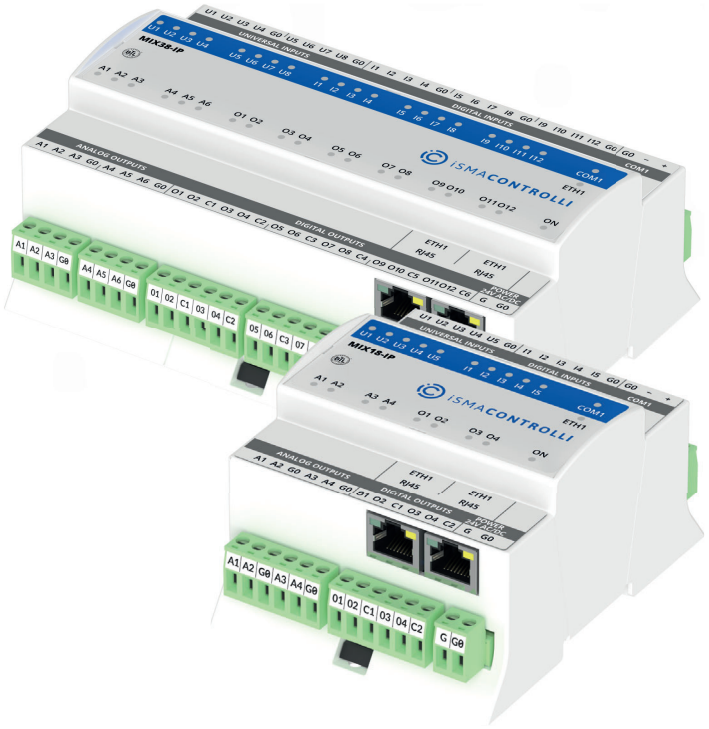
MIX-IP Series

Multiprotocol I/O Modules

MODEL	DESCRIPTION
iSMA-B-MIX38-IP	I/O module with 8 universal inputs, 12 digital inputs, 6 analog outputs, 12 digital outputs, BACnet IP and Modbus TCP/IP communication
iSMA-B-MIX18-IP	I/O module with 5 universal inputs, 5 digital inputs, 4 analog outputs, 4 digital outputs, BACnet IP and Modbus TCP/IP communication



APPLICATION AND USE

Multiprotocol I/O modules of the MIX-IP series are designed to create distributed control systems by extending the capabilities of building controllers like MAC36NL, iSMA-B-J8, or AAC20 with inputs and outputs, using an IP connection and open communication protocols, BACnet IP and Modbus TCP/IP. All the MIX series modules are equipped with the types of I/Os most commonly used in building automation (MIX of all types of I/Os in one unit). The factory-equipped, most popular open communication protocols, Modbus and BACnet, are selected using a DIP switch. Modules in the MIX-IP series are equipped with two Fast Ethernet interfaces working in a switch mode, allowing for a daisy chain connection of multiple units. Additional RS485 interface has an added functionality, the Modbus TCP/IP to Modbus RTU/ASCII gateway, enabling the connection of additional modules/devices, which communicate as servers (slaves) on the serial bus. The Modbus gateway functionality is active both when the module is operating in the Modbus and BACnet mode. The MIX-IP modules, communicating either in Modbus or BACnet, are always client (master) units on the network. One major advantage of supporting the modules with open communication standards is the versatility to install them in both new and completed installations, as part of an existing BMS. The modules are addressed using rotary switches, which facilitates and accelerates the process of commissioning the system. Built-in mini USB allows for the initial configuration of the unit without a power supply.

FEATURES

- Mix of all I/O types
- BACnet IP and Modbus TCP/IP protocols, selected with a DIP switch
- Built-in Modbus TCP/IP to Modbus RTU/ASCII gateway
- 2 Fast Ethernet ports with a built-in switch
- Digital inputs work as fast counters up to 100 Hz
- Universal inputs have 16-bit resolution, which increases the accuracy of measurement
- Wide range of supported temperature sensors in Celsius and Fahrenheit degrees (NTC, PT1000, etc.)
- Automatic detection of a signal type of universal inputs
- Digital outputs 230 V AC max. 3 A allow for a direct control without additional relays
- Analog outputs with max. 20 mA load per channel (60 mA maximum total load) allow for direct control of relays (12 V DC) or SSR with PWM support
- LEDs indicate the status of inputs and outputs
- Simple and fast addressing 0-99 using rotary switches
- UL listed
- BTL certified

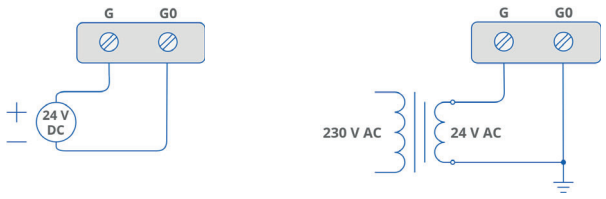
The performances stated in this sheet can be modified without any prior notice.

DESCRIPTION		MIX-IP I/O MODULES	
Power supply	Voltage	24 V AC/DC ± 20%	
Universal inputs	Number of inputs	8 (MIX38-IP), 5 (MIX18-IP)	
	Voltage input	Voltage measurement: 0-10 V DC Input impedance: 100 kΩ Measurement accuracy: ±0.1% Measurement resolution: 3 mV at 12-bit and 1 mV at 16-bit	
	Current input	Current measurement: 0-20 mA Required external resistor: 200 Ω Measurement accuracy: ±1.1% Measurement resolution: 15 µA at 12-bit and 5 µA at 16-bit	
	Digital input	Output current ~1 mA	
	Resistance input	Measurement of resistance: 0-1000 kΩ Measurement resolution for 20 kΩ load: 20 Ω at 12-bit and 1 Ω at 16-bit Measurement resolution for PT1000 and NI1000: 0.1 Ω at 16-bit Resistance measurement method: voltage divider	
	Temperature input	Measurement with attached RTDs (resistance temperature detectors) Accuracy: ±0.1˚C The PT1000 and NI1000 sensors use 16-bit resolution	
	Measurement resolution	12-bit (default), 16-bit	
	Processing time	10 ms/channel at 12-bit 140 ms/channel at 16-bit	
Digital inputs	Number of inputs	12 (MIX38-IP), 5 (MIX18-IP)	
	Type	Dry contact or fast pulse counter	
	Maximum input frequency	100 Hz saved in the EEPROM memory	
Analog outputs	Number of outputs	6 (MIX38-IP), 4 (MIX18-IP)	
	Voltage range	0-10 V DC	
	Maximum load current	20 mA	
	Resolution	12-bit	
	Accuracy	±0.5%	
Digital outputs	Number of outputs	12 (MIX38-IP), 4 (MIX18-IP)	
	Maximum loads:	UL compliant ratings	Maximum ratings
	Resistive load (AC1)	3 A at 24 V AC, 3 A at 30 V DC	3 A at 230 V AC, 3 A at 30 V DC
	Inductive load (AC3)	8 VA at 24 V AC, 30 W at 30 V DC	75 VA at 230 V AC, 30 W at 30 V DC
COM1	RS485 interface	Up to 128 devices	
		Half-duplex	
	Communication protocol	Modbus RTU/ASCII, BACnet MS/TP	
	Ports	Screw connector	
	Baud rate	2400-115200	
	Address	0-99 set by a rotary switch	
ETH1	Ethernet interface	1 Fast Ethernet with a switch mode	
	Communication protocol	Modbus TCP/IP, BACnet IP	
	Ports	2 RJ45	
	Baud rate	10/100 Mb/s	
USB1	USB 2.0	mini USB type B	
Ingress protection	IP rating	IP 40 for indoor installation	
Temperature	Storage	-40°C to +85°C (-40°F to +185°F)	
	Operating	-10°C to +50°C (14°F to 122°F)	
Humidity	Relative	5 to 95% RH (without condensation)	
Screw connectors	Type	Removable screw terminals	
	Maximum cable size	2.5 mm^2 (18...12 AWG)	

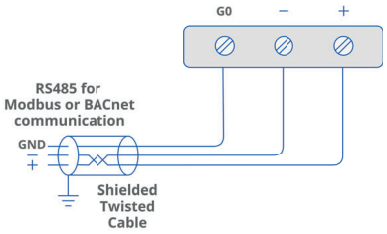
DESCRIPTION		MIX-IP I/O MODULES	
Housing	Material	Self-extinguishing plastic (PC/ABS)	
	Mounting	DIN (DIN EN 50022 norm)	
Dimensions	Module:	MIX38-IP	MIX18-IP
	Width	160.20 mm/6.31 in	87.80 mm/3.46 in
	Length	111.40 mm/4.39 in	111.40 mm/4.39 in
	Height	62.00 mm/2.44 in	62.00 mm/2.44 in

WIRING DIAGRAMS

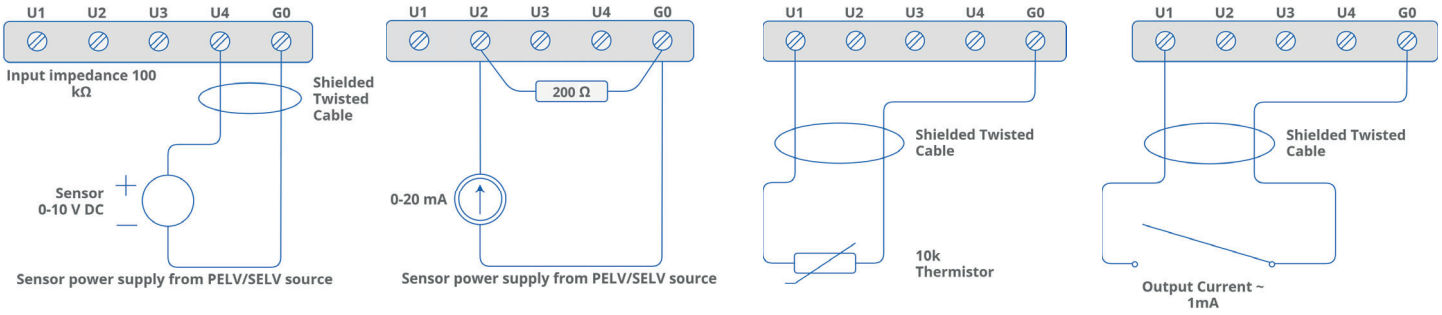
Power Supply



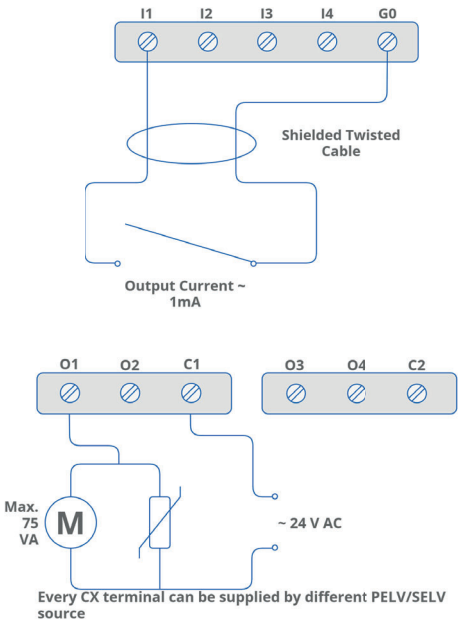
Communication



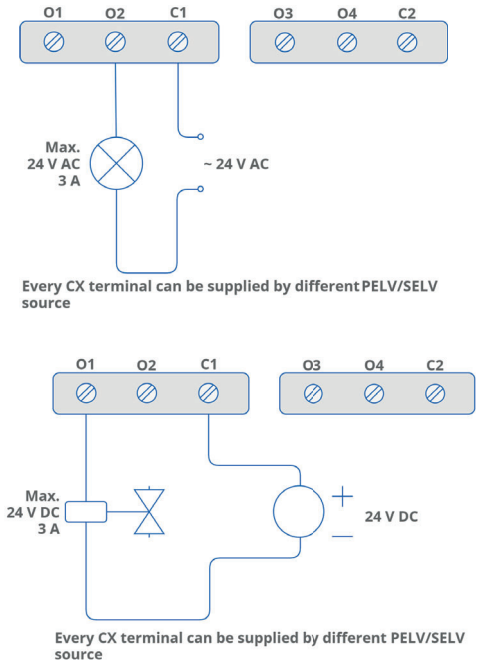
Universal Inputs



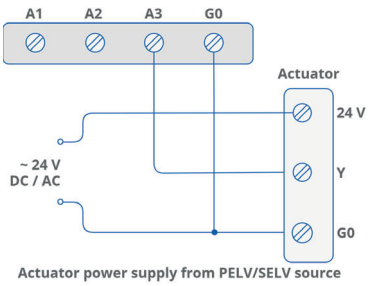
Digital Inputs

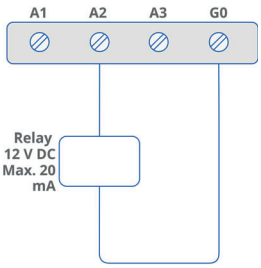


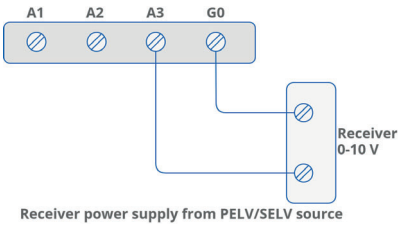
Digital Outputs



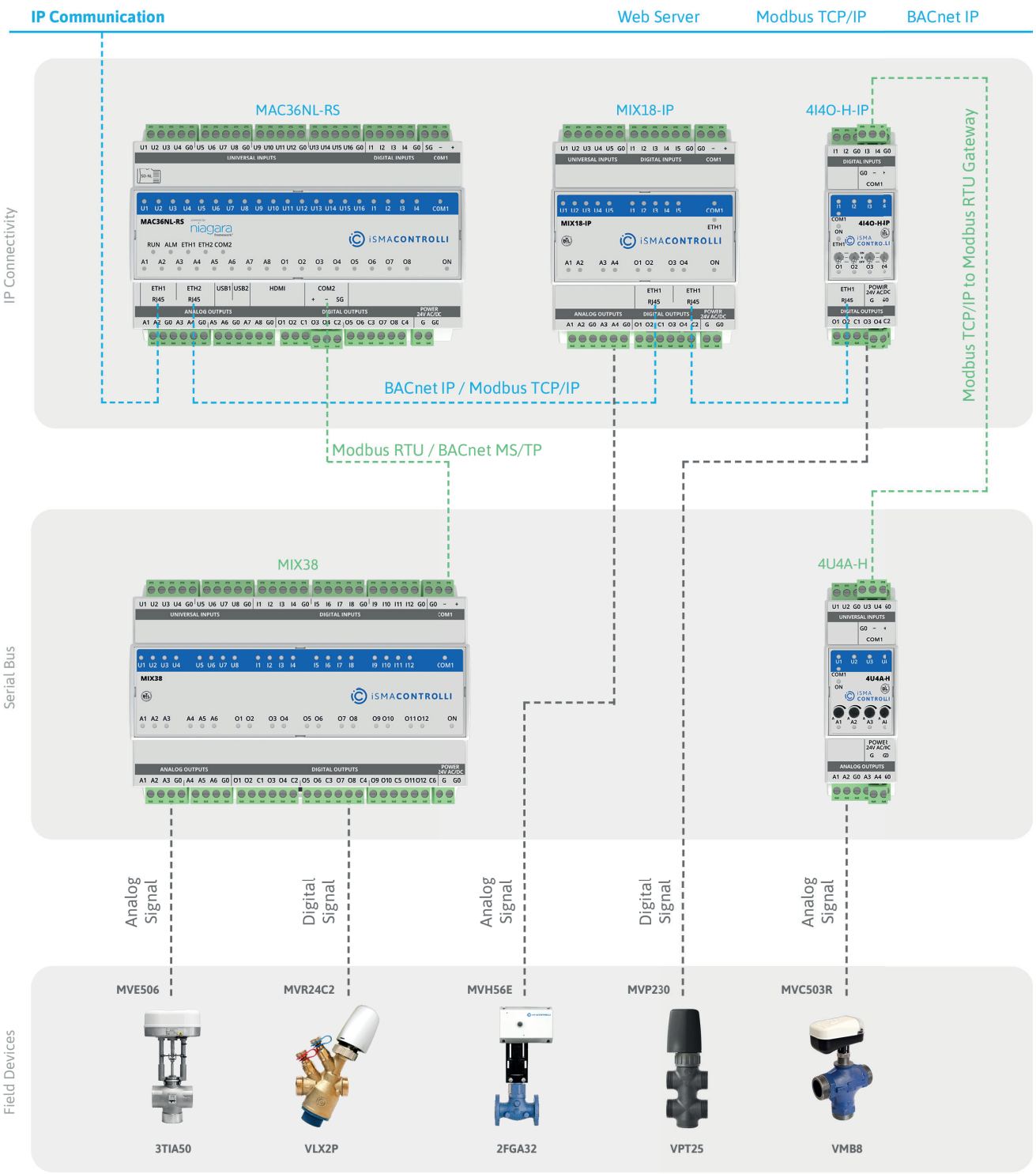
Analog Outputs







APPLICATION EXAMPLE

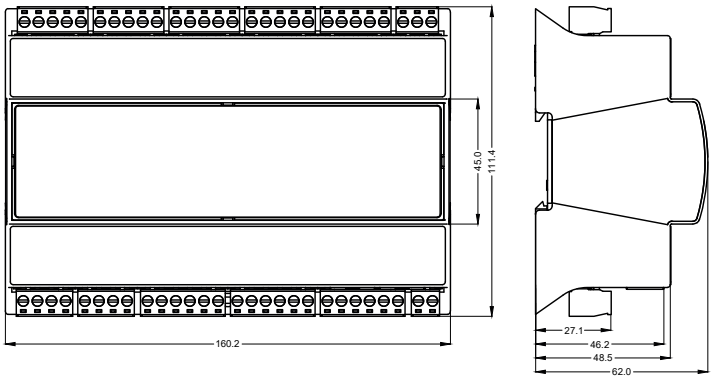
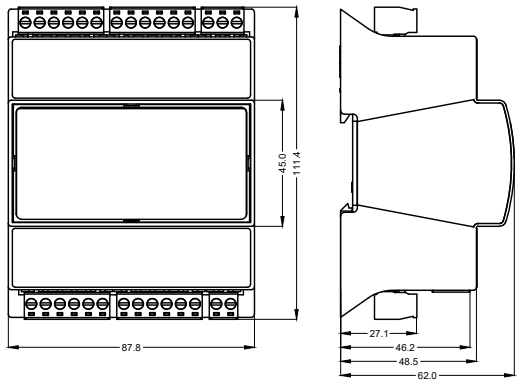


DEDICATED SOFTWARE

iSMA Configurator - configuration tool for non-programmable iSMA CONTROLLI devices

DIMENSIONS [mm]

MIX38-IP



MIX18-IP