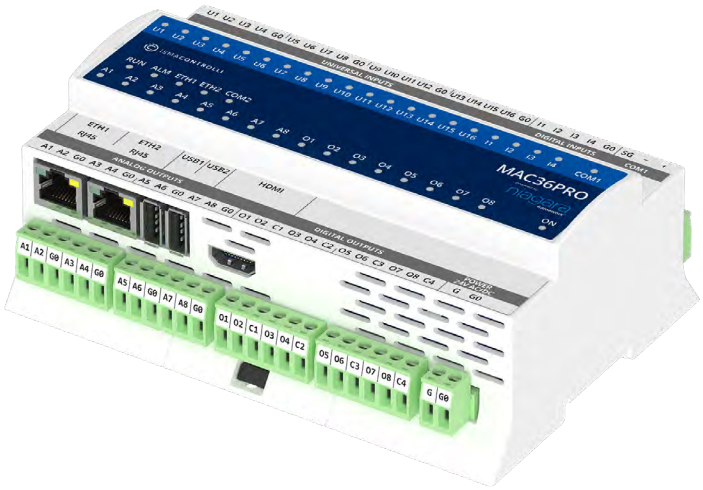
MAC36PRO

Next-gen Hybrid IoT Controller

MODEL	DESCRIPTION
iSMA-B-MAC36PRO	Next-gen Hybrid IoT Controller powered by Niagara Framework
iSMA-B-MAC36PRO-RS	Next-gen Hybrid IoT Controller powered by Niagara Framework, with 2 RS485 ports
iSMA-B-MAC36PRO-M	Next-gen Hybrid IoT Controller powered by Niagara Framework, with M-Bus interface



powered by niagara framework®

APPLICATION AND USE

iSMA-B-MAC36PRO is a family of next generation Master Application Controllers. This advanced iteration boasts a major upgrade with a powerful Quad-Core 1.6 Ghz processor, doubled RAM and storage capacity, and an efficient visualization system with local HDMI output. The onboard USB1(host) supports keyboard and mouses, touchscreen and expansion modules, including an LTE modem and USB2(OTG) IP over USB to facilitate local programming. MAC36PRO powered by Niagara Framework allows to take advantage of all the functionality of the Niagara Framework, enhancing its potential with the capabilities of this innovative controller. This controller is extremely versatile, offering a set of onboard I/Os consisting of 16 UI, 8 AO, 4 DI, and 8 DO, making it adaptable to a wide range of applications. Among its various functions, the iSMA-B-MAC36PRO excels in control, data logging, alarming, scheduling, integration and visualization.
To allow IP connectivity there are 2 Fast Ethernet ports that can operate as two independent ports. Built-in RS485 interface can be used to expand the number of I/O by connecting multiprotocol I/O modules or to integrate with other subsystems. There are two more hardware versions of the controller with the second RS485 port or M-Bus interface available.
The iSMA-B-MAC36PRO provides a rich graphical interface to be displayed on a standard web browser or an external display connected to a built-in HDMI and USB port (touchscreen support).

FEATURES

- Niagara 4.10.U7 and up*
- Powerful Quad-Core 1.6 Ghz processor
- 64-bit iSMA OS (Linux)
- Local visualisation and control with HDMI output
- 36 inputs and outputs: 16 UI, 8 AO, 4 DI, and 8 DO
- Real-time programming
- 2 Fast Ethernet (independent)
- RS485 port (opto-isolated)
- Second RS485 port (opto-isolated, optional hardware version)
- M-Bus interface (optional hardware version)
- LTE 4G support
- 2 USB ports (touchscreen, mouse, keyboard, and other supported external peripherals)
- IP over USB through the USB 2 port
- Built-in web server provides graphical user interface and device management for seamless pre-commissioning
- 16 GB micro SD card for system and user
- Hardware replacement by SD card
- Wireguard VPN client for remote connection
- Niagara Cloud Suite support for Remote, Recover, and Data services
- Expandable with a wide range of Multiprotocol I/O Modules

* Supported versions of Niagara are listed in detail in the product's Release Notes.

DEDICATED SOFTWARE

iC Niagara Expansion Pack - a comprehensive solution for expanding the Niagara Framework environment with iSMA CONTROLLI Niagara software and MAC36 support packages

iC Workbench - iC Niagara Workbench is a powerful programming and management tool designed for the Niagara Framework that includes dedicated iSMA CONTROLLI utilities, modules, drivers, and graphics packages. It provides a user-friendly interface for creating, configuring, and maintaining automation and control systems in commercial buildings

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

DESCRIPTION		MAC36PRO
Power supply	Voltage	24 V AC/DC ± 20%
Universal inputs	Number of inputs	16
	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	4
	Type	Dry contact or fast pulse counter
	Maximum input frequency	100 Hz saved on SD card memory
Analog outputs	Number of outputs	8
	Voltage range	0-10 V DC
	Maximum current load	20 mA
	Resolution	12-bit
	Accuracy	±0.5%
Digital outputs	Number of outputs	8
	Resistive load (AC1)	3 A at 230 V AC or 3 A at 30 V DC
M-Bus (optional)	Voltage	30 V
	Maximum current load	30 mA
	Number of devices	Up to 20
	Baud rate	300-19200
	Maximum cable length	350 m
	Niagara support	From N4.10U6 (4.10.6.18)
COM1	RS485 interface	Up to 128 devices
		Half-duplex, opto-isolated
	Communication protocol	Modbus RTU/ASCII, BACnet MS/TP
	Ports	Screw connector
	Baud rate	2400-115200
	Address	1 to 247
COM2 (optional)	RS485 interface	Up to 128 devices
		Half- duplex, opto-isolated
	Communication protocol	Modbus RTU/ASCII, BACnet MS/TP
	Ports	Screw connector
	Baud rate	2400-115200
	Address	1 to 247

DESCRIPTION		MAC36PRO
ETH1/ETH2	Ethernet interface	2 Fast Ethernet, independent mode
	Baud rate	10/100 Mb/s
USB1	USB 2.0	Host
USB2	USB 2.0	OTG
HDMI	HDMI 1.4 output	Standard type A
SD card	microSD card slot	Slot for the dedicated card iSMA-B-SD-PRO
Ingress protection	IP rating	IP 20 for indoor installation
Temperature	Storage	-40°C to +85°C (-40°F to +185°F)
	Operating	0°C to +50°C (32°F to 122°F) 0°C to +40°C (32˚F to 104˚F) with active HDMI output
Humidity	Relative	5 to 95% RH (without condensation)
Screw connectors	Type	Removable screw terminals
	Maximum cable size	2.5 mm^2 (18...12 AWG)
Housing	Material	UL approved, self-extinguishing plastic (PC/ABS)
	Mounting	DIN (DIN EN 50022 norm)
Dimensions	Width	111.40 mm/4.38 in
	Length	160.20 mm/6.30 in
	Height	62.00 mm/2.44 in

ACCESSORIES

iSMA-B-SD-PRO-16G	Industrial grade 16 GB micro SD card dedicated for iSMA-B-MAC36PRO controllers. Stores the system data, user data and licenses. Required for the operation of the controller.
iSMA-D-PA-USB	USB-A to USB-A cable, length: 1 m (3.3 ft). Allows a local access and programming of the MAC36PRO via USB2.
LTE-DIN-EXT-SET	LTE USB Modem Extension Set including an LTE USB modem with a 1 m USB-A cable, an LTE antenna with a magnetic mount, and accessories for DIN rail mounting.

STANDARD SOFTWARE MODELS

iSMA-B-MAC36PRO-L-50	Niagara Core License for iSMA-B-MAC controllers - up to 3 devices*/50 Niagara proxy points (requires iSMA-B-MAC-50-M0 maintenance)
iSMA-B-MAC36PRO-L-100	Niagara Core License for iSMA-B-MAC controllers - up to 5 devices*/100 Niagara proxy points (requires iSMA-B-MAC-100-M0 maintenance)
iSMA-B-MAC36PRO-L-250	Niagara Core License for iSMA-B-MAC controllers - up to 5 devices*/250 Niagara proxy points (requires iSMA-B-MAC-250-M0 maintenance)
iSMA-B-MAC36PRO-L-500	Niagara Core License for iSMA-B-MAC controllers - up to 10 devices*/500 Niagara proxy points (requires iSMA-B-MAC-500-M0 maintenance)
iSMA-B-MAC36PRO-L-1250	Niagara Core License for iSMA-B-MAC controllers - up to 25 devices*/1250 Niagara proxy points (requires iSMA-B-MAC-1250-M0 maintenance)
iSMA-B-MAC36PRO-L-2500	Niagara Core License for iSMA-B-MAC controllers - up to 50 devices*/2500 Niagara proxy points (requires iSMA-B-MAC-2500-M0 maintenance)
iSMA-B-MAC36PRO-L-5000	Niagara Core License for iSMA-B-MAC controllers - up to 100 devices*/5000 Niagara proxy points (requires iSMA-B-MAC-5000-M0 maintenance)

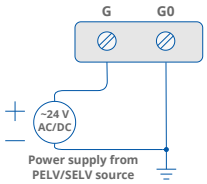
ADDITIONAL CAPACITY OPTIONS

iSMA-B-MAC36PRO-L-AD-50	Additional 50 proxy points/up to 1 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.
iSMA-B-MAC36PRO-L-AD-100	Additional 100 proxy points/up to 2 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.
iSMA-B-MAC36PRO-L-AD-500	Additional 500 proxy points/up to 10 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.
iSMA-B-MAC36PRO-L-AD-1250	Additional 1250 proxy points/up to 25 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.
iSMA-B-MAC36PRO-L-AD-2500	Additional 2500 proxy points/up to 50 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.

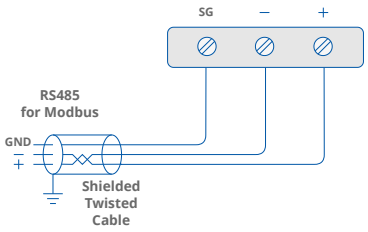
* Licensing of devices/points depends on the region. Please contact your authorized distributor for more information.

WIRING DIAGRAMS

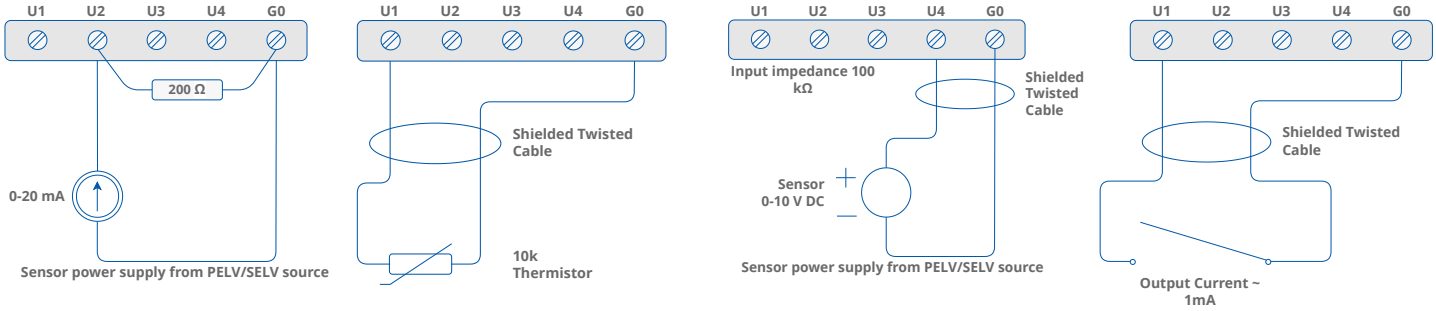
Power Supply



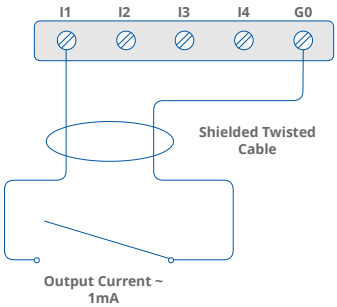
Communication



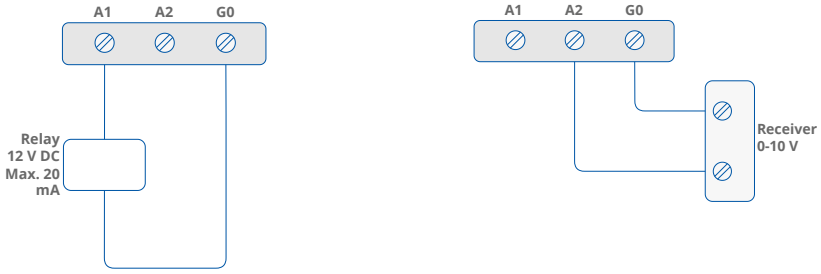
Universal Inputs



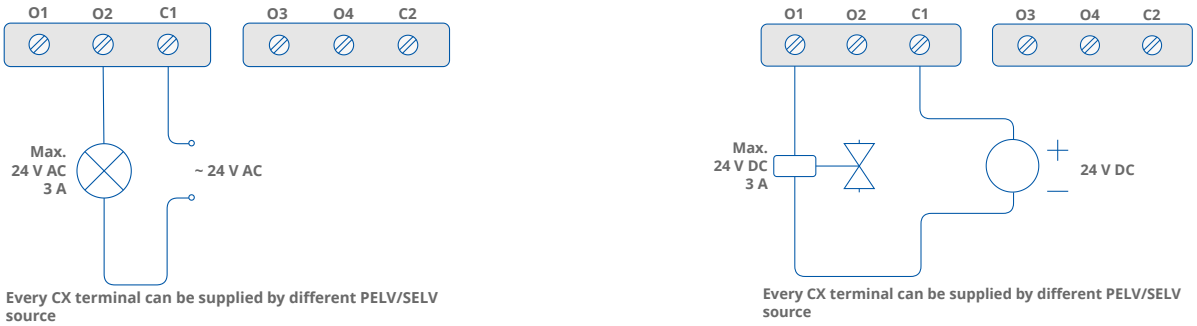
Digital Inputs



Analog Outputs



Digital Outputs





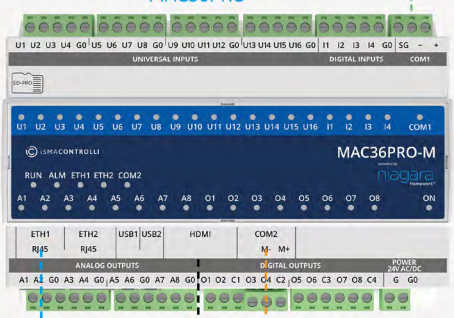
iSMA Supervisor

Cloud Applications

FOX

BACnet S/C

MAC36PRO



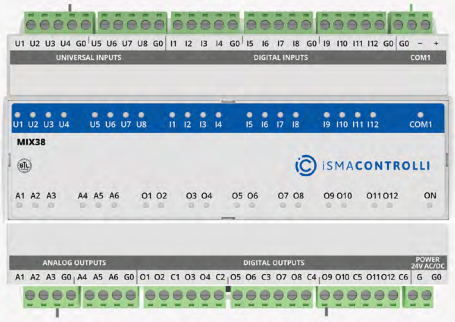
iSMA-D-PD10C



HDMI / USB

M-Bus

MIX38



4U4O-H





Up to 20 M-Bus Meters

Temperature Signal

Analog Signal

Digital Signal

SNTC-VL NTC
-20..65°C



MVE506



3TIA50

MVR24C2

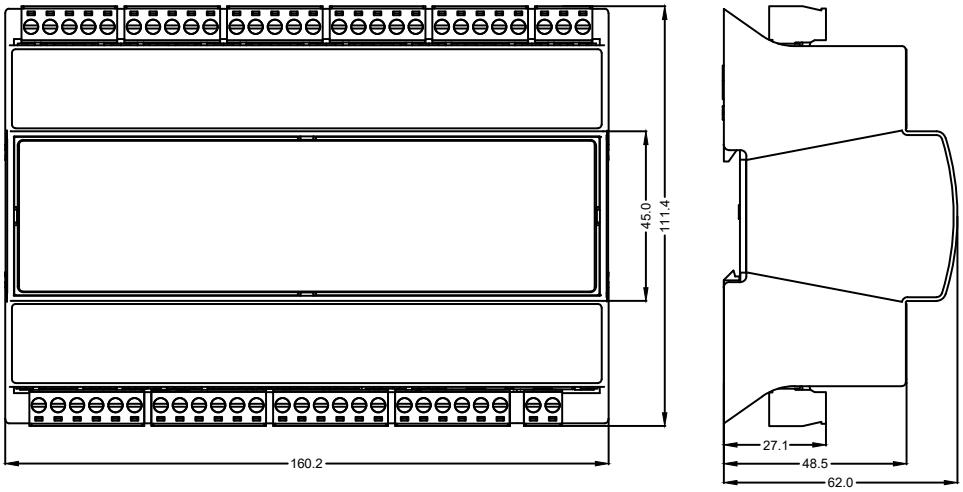


VLX2P

powered by niagara framework®

DIMENSIONS [mm]

MAC36PRO



MAC36PRO-RS / MAC36PRO-M

