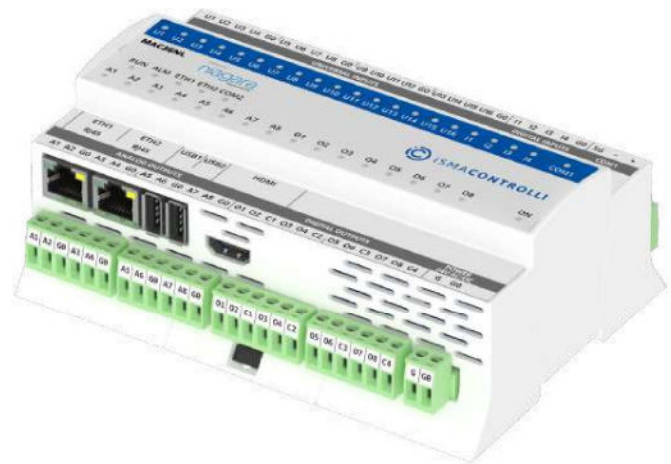


MAC36NL



Hybrid IoT Controller

| MODEL | DESCRIPTION |
|-------------------|--|
| iSMA-B-MAC36NL | Hybrid IoT Controller powered by Niagara Framework |
| iSMA-B-MAC36NL-RS | Hybrid IoT Controller powered by Niagara Framework, with 2 RS485 ports |
| iSMA-B-MAC36NL-M | Hybrid IoT Controller powered by Niagara Framework, with M-Bus interface |



APPLICATION AND USE

iSMA-B-MAC36NL is a compact Master Application Controller with built-in different types of I/O, powered by Niagara Framework. Using the specific local I/O set (16 UI, 8 AO, 4 DI, and 8 DO) allows users to use the device in different applications. The controller provides 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 iSMA-B-MINI or iSMA-B-MIX series 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.

iSMA-B-MAC36NL 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 4.4 and up
- 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)
- 2 USB ports (touchscreen, mouse, keyboard support)
- 16 UI, 8 AO, 4 DI, and 8 DO
- HDMI to connect an external display
- Built-in web server provides graphical user interface available from a web browser level
- SD card to collect real-time data, history, and alarms
- Hardware replacement by SD card

TECHNICAL SPECIFICATION

| DESCRIPTION | | MAC36NL |
|------------------|------------------|--|
| Power supply | Voltage | 24 V AC/DC \pm 20% |
| Universal inputs | Number of inputs | 16 |
| | Voltage input | Voltage measurement: 0-10 V DC Input impedance: 100 k Ω Measurement accuracy: \pm 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: \pm 1.1% Measurement resolution: 15 μ A at 12-bit and 5 μ A at 16-bit |

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

| DESCRIPTION | | MAC36NL |
|--------------------|-------------------------|--|
| Universal inputs | 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 RTDS (Real Time Digital Simulator) attached 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 N4.8 (1147) |
| 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 |
| 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-NL |
| 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) |
| Humidity | Relative | 5 to 95% RH (without condensation) |

| DESCRIPTION | | MAC36NL |
|------------------|--------------------|--|
| 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-NL SD card dedicated for iSMA-B-MAC36NL controllers. Used to store and move configuration files and licenses. Required to run the controller.

STANDARD SOFTWARE MODELS

iSMA-B-MAC-L-100 Niagara Core License for iSMA-B-MAC controllers - up to 5 devices*/100 Niagara proxy points (requires iSMA-B-MAC100-M0 maintenance)

iSMA-B-MAC-L-250 Niagara Core License for iSMA-B-MAC controllers - up to 5 devices*/250 Niagara proxy points (requires iSMA-B-MAC250-M0 maintenance)

iSMA-B-MAC-L-500 Niagara Core License for iSMA-B-MAC controllers - up to 10 devices*/500 Niagara proxy points (requires iSMA-B-MAC500-M0 maintenance)

iSMA-B-MAC-L-1250 Niagara Core License for iSMA-B-MAC controllers - up to 25 devices*/1250 Niagara proxy points (requires iSMA-B-MAC1250-M0 maintenance)

ADDITIONAL CAPACITY OPTIONS

iSMA-B-MAC-L-AD-50 Additional 50 proxy points/up to 5 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.

iSMA-B-MAC-L-AD-100 Additional 100 proxy points/up to 5 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.

iSMA-B-MAC-L-AD-500 Additional 500 proxy points/up to 10 devices* capacity pack purchased in conjunction with initial core software. Includes standard open drivers.

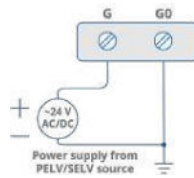
iSMA-B-MAC-L-UP-50 Additional 50 proxy points/up to 5 devices* capacity pack purchased after initial purchase of core software.

iSMA-B-MAC-L-UP-100 Additional 100 proxy points/up to 5 devices* capacity pack purchased after initial purchase of core software.

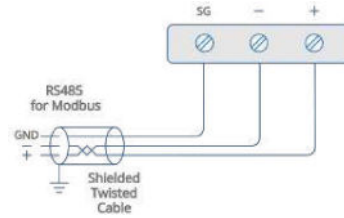
iSMA-B-MAC-L-UP-500 Additional 500 proxy points/up to 10 devices* capacity pack purchased after initial purchase of core software.

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

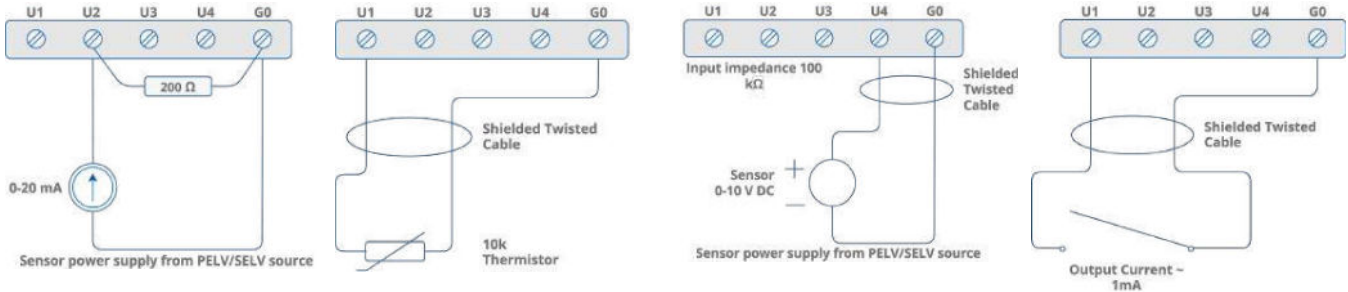
Power Supply



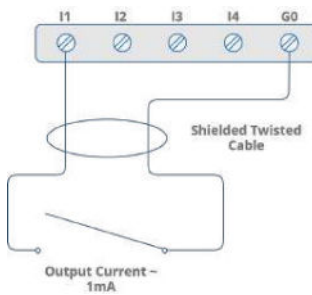
Communication



Universal Inputs



Digital Inputs

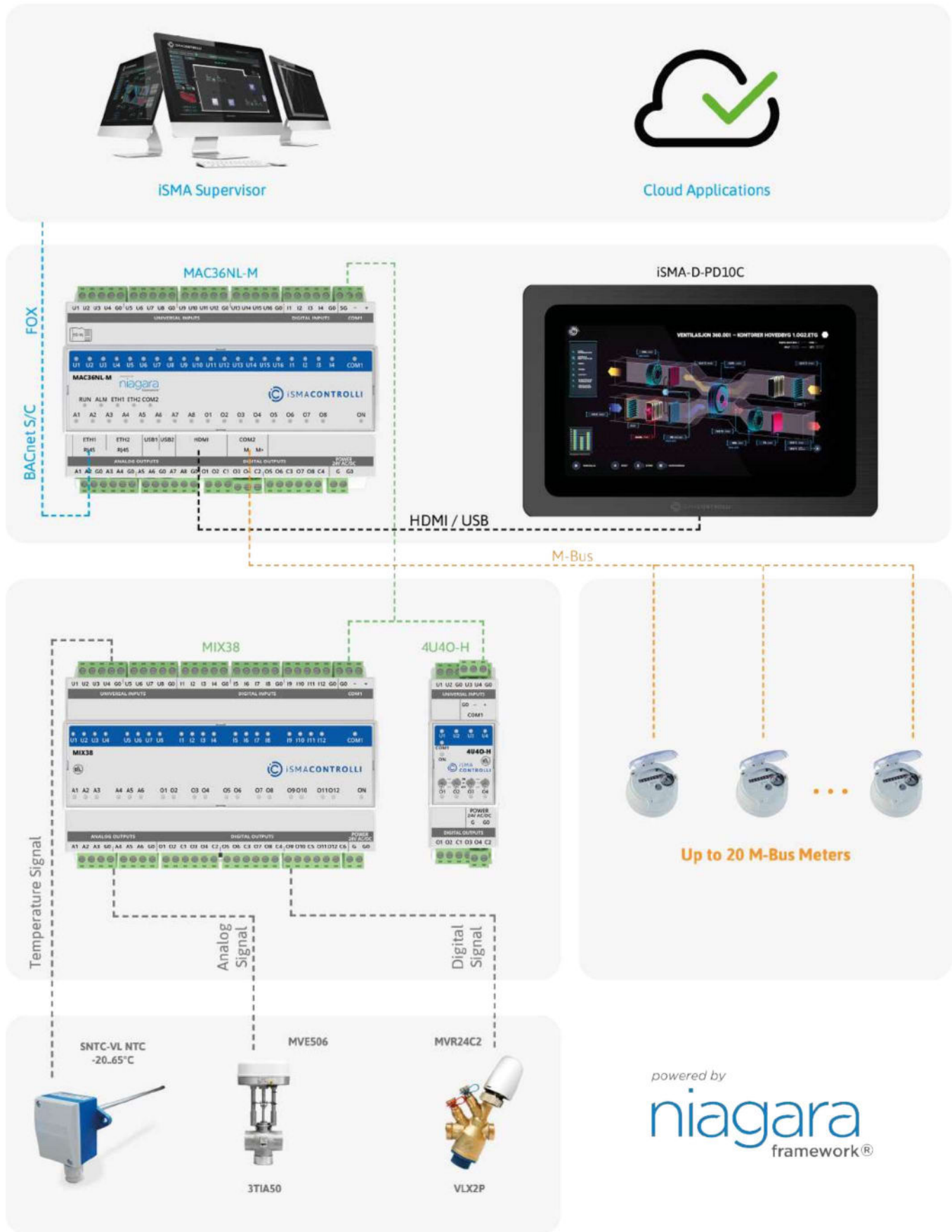


Analog Outputs

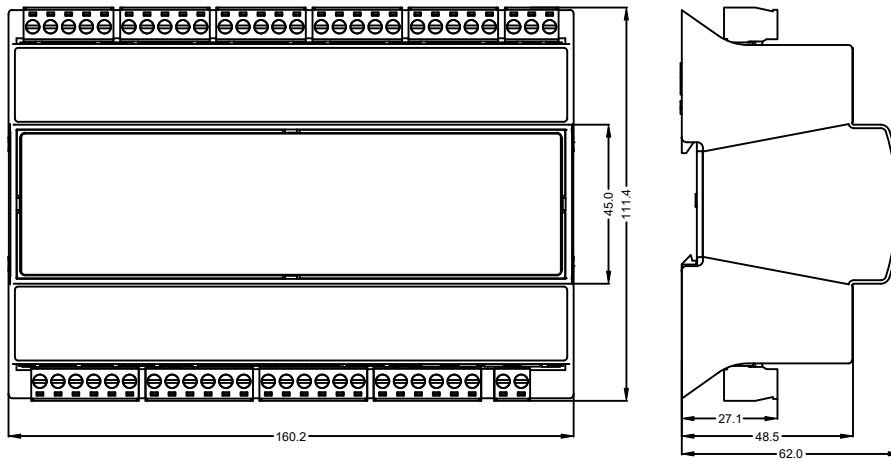


Digital Outputs





MAC36NL



MAC36NL-RS / MAC36NL-M

