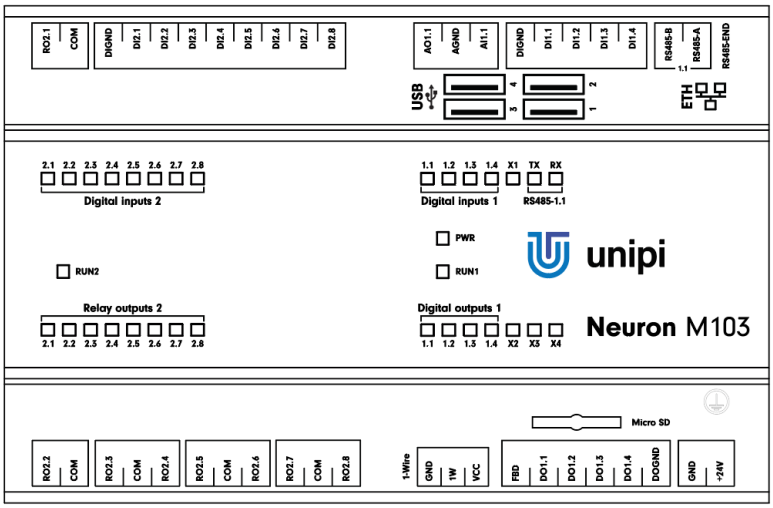
unipi technology

Product datasheet
Product code: 2016010-1

Unipi Neuron M103

PRODUCT DESCRIPTION

Unipi Neuron M103 is a programmable logic controller designed for automation, control, regulation and monitoring. The M103 is an entry model of the Neuron M line and features a basic set of digital, relay and analog I/Os suitable for a wide range of applications. The controller is also equipped with a single RS485 serial interface and a 1-Wire interface for connection of digital temperature or humidity sensors.



COMPUTING MODULE

Raspberry Pi 3 Model B
(quad-core 1.2 GHz CPU, 1 GB RAM)

FEATURES

Inputs/outputs

12 × digital input incl. counter
4 × digital output
8 × relay output
1 × analog input
1 × analog output

Software

- Powered by OS Linux
- Mervis – IDE (IEC 61131-3), HMI editor, proxy server, cloud database, SCADA, a wide range of supported protocols
- Commercial solutions– CODESYS, REXYGEN
- Open-source solutions – Node-RED, openHAB, Homebridge, FHEM, PiDome, DomotiGa, Domoticz, Pimatic and many others
- Custom SW implementation – EVOK open API, Modbus TCP interface, SysFS

FUNCTIONALITY

Smart home control (lighting, doors, smart locks, irrigation etc.), automation, remote online supervision, monitoring and regulation, HVAC control, SCADA, sensors, IoT/IIoT

Communication interfaces

1 × RS485
1 × 1-Wire bus
1 × 100Mbit Ethernet
4 × USB 2.0

Other features

- Built-in webserver
- Special functions – Direct Switch, MasterWatchdog, user LEDs
- Durable aluminium chassis (IP20)
- Available in an OEM variant
- Custom development available (IQRF, LoRa, wM-Bus, ZigBee, EnOcean and more)

Unipi Neuron M103

- **Communication**

Ethernet	1 × 100 Mbit Ethernet
Serial/bus channels	1 × RS485, 1 × 1-Wire
RS485 transmission speed	134 baud .. 115 200 baud
RS485 galvanic isolation	Yes
RS485 biasing resistors	Yes, 560 Ω
RS485 terminating resistor	Builtin attachable, 120 Ω
1-Wire galvanic isolation	Yes
1-Wire output voltage Vcc	5 V
1-Wire max. current Vcc	50 mA
1-Wire connector	3 × pole, max. 1.5 mm²
WiFi	IEEE 802.11b/g/n
Bluetooth	4.2, Low Energy (BLE)
WiFi/Bluetooth antenna	Internal
USB	4 × USB 2.0

- **Digital inputs**

Nr. of inputs × groups	4 × 1, 8 × 1
Common connector	DIGND
Galvanic isolation	Yes
Functions of inputs	Counter (w/o memory), signalization, Direct Switch
Max. frequency of counter input signal	10 kHz
Input voltage of log. 0	Max. 3 V DC
Input voltage of log. 1	Min. 7 V DC
Max. input voltage	35 V DC
Input resistance	6 200 Ω
Delay 0–>1/1–>0	20 µs / 60 µs

- **Digital outputs**

Nr.of outputs × groups	4 × 1
Common connector	DOGND
Galvanic isolation	No
Type of output	NPN transistor (open collector)
Optional functions	PWM
Switchable voltage	5–50 V DC
Switchable current continual/pulse	750 mA / 1 A
Max. total current DO 1.1–1.4	1 A
PWM max. frequency	200 kHz
PWM max. resolution	16 bits

- **Relay outputs**

Nr.of outputs × groups	1 × 2, 2 × 3
Galvanic isolation	Yes
Type of contact	Normally open (SPST)
Switchable voltage	250 V AC / 30 V DC
Switchable current	5 A
Short time overvoltage	5 A
Current via common conn.	10 A
Time to switch on/off	10 ms
Mechanical lifetime	5 000 000 cycles
Electrical lifetime	100 000 cycles
Protection against shortage	No
Inductive load protection	Not included
Isolation voltage	4 000 V AC

- **Analog inputs**

Nr.of inputs × groups	1 × 1
Common connector	AGND
Available functions	0–10 V 0–20 mA
Galvanic isolation	No
Resolution	12 bits
Conversion speed	10 µs
Input resistance	66 kΩ – U 100 Ω – I
Resistance measurement method	–

- **Analog outputs**

Nr. of outputs × groups	1 × 1
Common connector	AGND
Available functions	AO 0–10 V / 0–20 mA Resistance measurement: 0–2 kΩ Pt/Ni1000)
Galvanic isolation	No
Max. voltage/current	10 V / 20 mA
Resolution	12 bits
Conversion speed	1 ms
Resistance measurement method	2wire

- **Power supply**

Rated voltage - SELV	24 V DC
Power consumption	Typ. 5 W Max. 14 W
Reverse polarity protection	Yes

- **Installation and operating conditions**

Operating conditions	0 °C .. + 55 °C, relative humidity 10 % .. 95 %, without aggressive substances, condensing vapour and fog
Storing conditions	- 25 °C .. + 70 °C, relative humidity 10 % .. 95 %, without aggressive substances, condensing vapour and fog
Degree of protection IP (IEC 529)	IP 20
Operation position	Horizontal
Installation	On 35mm DIN rail into distribution box (holder included)
Connection	Pluggable terminal blocks
Wire gauge	Max. 2.5 mm²

- **Dimensions and weight**

Dimensions	140 × 90 × 60 mm
Weight	325 g

- **Standards compliance**

IEC 60950-1: 2005(ed.2)
EN 62311: 2008
EN 60730-1 ed.3:2012
EN 301 489-1
EN 301 487-17 Ver. 3.1.1
EN 300 328 Ver 2.1.1
EN 301 893 V2.1.1
RoHS
WEEE