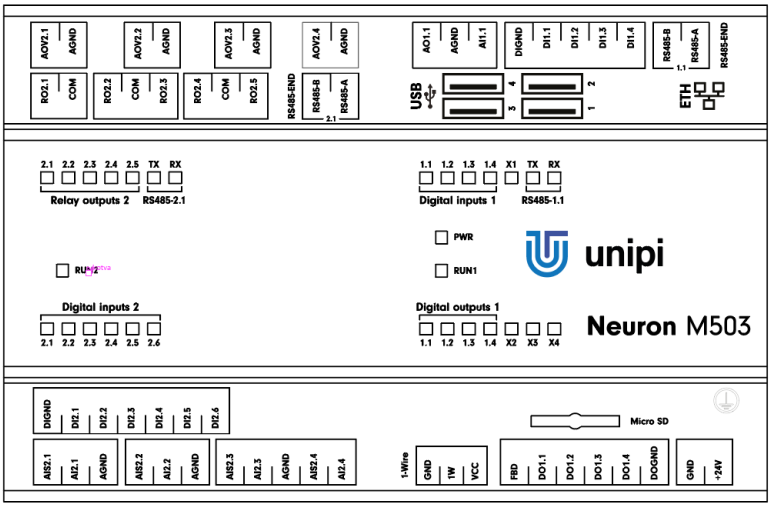
unipi technology

Product datasheet
Product code: 2016045-1

Unipi Neuron M503

PRODUCT DESCRIPTION

Unipi Neuron M503 is a programmable logic controller (PLC) designed for automation, control, regulation and monitoring. The M503 is an entry model of the Neuron 500 line focused on a higher number of analog I/O, but also features a sufficient number of all inputs/outputs available on Unipi products (digital, relay). That makes it suitable for complex projects including measurements and control of analog components. The controller is equipped with two RS485 serial interfaces a 1-Wire interface for connection of digital temperature or humidity sensors.



RPi 3

mervis software included

COMPUTING MODULE

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

FUNCTIONALITY

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

FEATURES

Inputs/outputs

10 × digital input incl. counter
4 × digital output
5 × relay output
5 × analog input
5 × analog output

Communication interfaces

2 × RS485
1 × 1-Wire bus
1 × 10/100Mbit Ethernet
4 × USB 2.0

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

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)

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Unipi Neuron M503

- **Communication**

Ethernet	1 × 10/100 Mbit Ethernet
Serial/bus channels	2 × RS485, 1 × 1-Wire
RS485 1.1, 2.1 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 mm^2
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, 6 × 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 × 1, 2 × 2
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	4 × 1
Common connector	AGND	AGND
Available functions	0–10 V 0–20 mA	0–10 V / 0–2.5 V 0–20 mA 0–1960 Ω 0–100 kΩ
Galvanic isolation	No	Yes
Resolution	12 bits	16 bits – U, I 24 bits – R
Conversion speed	10 µs	60 µs – U, I 400 ms – R
Input resistance	66 kΩ – U 100 Ω – I	44 kΩ – U 100 Ω – I
Resistance measurement method	–	2/3wire

- **Analog outputs**

Nr. of outputs × groups	1 × 1	4 × 1
Common connector	AGND	AGND
Available functions	AO 0–10 V / 0–20 mA Resistance measurement: 0–2 kΩ Pt/Ni1000)	0–10 V
Galvanic isolation	No	Yes
Max. voltage/current	10 V / 20 mA	12 bits
Resolution	12 bits	12 bits
Conversion speed	1 ms	300 µs
Resistance measurement method	2wire	–

- **Power supply**

Rated voltage - SELV	24 V DC
Power consumption	Typ. 6 W Max. 15 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 mm^2

- **Dimensions and weight**

Dimensions	140 × 90 × 60 mm
Weight	350 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