**Unipi Neuron L503**

**PRODUCT DESCRIPTION**
Unipi Neuron L503 is a programmable logic controller (PLC) designed for automation, control, regulation and monitoring. The L503 is an intermediate model of the Neuron 500 line focused on a higher number of analog I/O, but also features a high 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.

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

**FEATURES**
Inputs/outputs
- 24 × digital input incl. counter
- 4 × digital output
- 19 × relay outputs
- 5 × analog inputs
- 5 × analog outputs

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
- Opensource 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**
- 2 × RS485
- 1 × 1-Wire bus
- 1 × 10/100Mbit 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, wMBus, ZigBee, EniOcean and more)
Unipi Neuron L503

• 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 Built-in attachable, 120 Ω
  I-Wire galvanic isolation Yes
  I-Wire output voltage Vcc 5 V
  I-Wire max. current Vcc 50 mA
  I-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 3 × 2, 4 × 3, 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 D→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 × 3, 2 × 8
  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
  Galvanic isolation No
  Conversion speed 10 μs
  Input resistance 66 kΩ — U
  Resistance measurement method —

• Analog outputs
  Nr. of outputs × groups 1 × 1
  Common connector AGND
  Available functions AO 0–10 V / 0–20 mA
  Galvanic isolation No
  Conversion speed 1 ms
  Resolution 12 bits
  Resistance measurement method 2wire

• Power supply
  Rated voltage - SELV 24 V DC
  Power consumption Typ. 8 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 210 × 90 × 60 mm
  Weight 546 g

• Standards compliance
  EN ISO 16484-2
  EN 60730-1
  EN 60335-1