# Unipi Neuron L523

## PRODUCT DESCRIPTION
Unipi Neuron L523 is a programmable logic controller (PLC) designed for automation, control, regulation and monitoring. The L523 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
- 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**
- 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, EnOcean and more)
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**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, 560Ω
- RS485 terminating resistor: Built-in, attachable, 120Ω
- 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: 4 × 6
- 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 200Ω
- Delay D→1/1→0: 20 μs / 60 μs

**Digital outputs**
- Nr. of outputs × groups: 4 × 1
- Common connector: DIGND
- 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 / 0–20 mA
- Galvanic isolation: No
- Resolution: 12 bits
- Conversion speed: 10 μs
- Input resistance: 66 kΩ – U
- Resistance measurement method: 2/Wire

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

**Power supply**
- Rated voltage - SELV: 24 V DC
- Power consumption: Typ. 8 W
- Max. 17 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: 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: 540 g

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