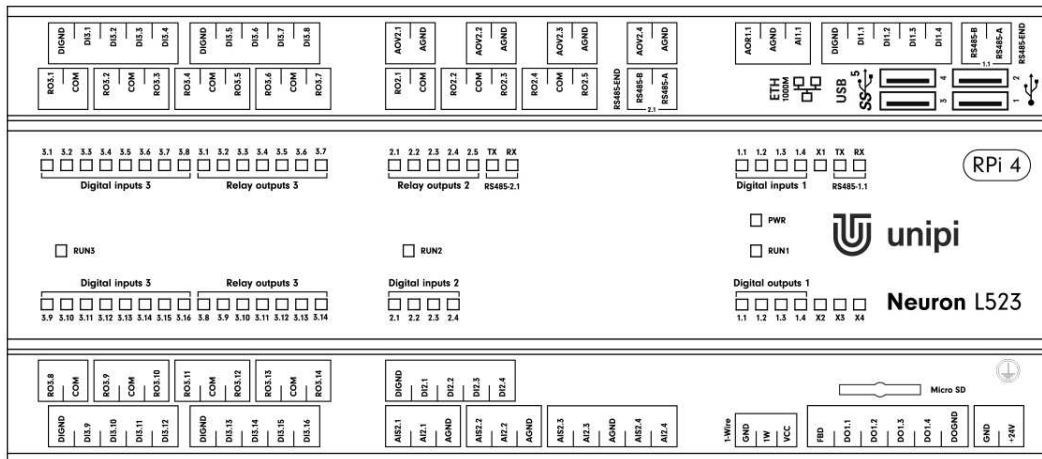


Unipi Neuron L523

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 4, options 2 / 4 / 8 GB RAM (quad-core 1.5 GHz CPU), or
- Raspberry Pi 3 Model B+, 1 GB RAM (quad-core 1.4 GHz CPU)

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 – REXYGEN, CODESYS
- 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 × 1Gbit Ethernet (RPi4), or 1 × 300Mbps Ethernet (RPi3)
- 2 × USB 2.0, 2 × USB 3.0 (RPi4), or 4 × USB 2.0 (RPi3)

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 L523

Communication

| | RPI4 | RPI4 |
|-----------------------------------|------------------------------------|-----------------------|
| Ethernet | 1 × 1Gbit Ethernet | 1 × 300 Mbps 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 | 5.0, Low Energy (BLE) | 4.2, Low Energy (BLE) |
| WiFi/Bluetooth antenna | Internal | |
| USB | 2× USB 2.0, 2× USB 3.0 | 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 ⁼⁼ |
| Input voltage of log. 1 | Min. 7 V ⁼⁼ |
| Max. input voltage | 35 V ⁼⁼ |
| 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 ⁼⁼ |
| 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 [~] / 30 V ⁼⁼ |
| 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 [~] |

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 ⁼⁼ |
| 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 (IEC 529) | IP 20 |
| 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 | 209 × 90 × 55.5 mm (without DIN rail) |
| Weight | 540 g |

Directive compliance

| | |
|-------|-------------|
| EMC: | 2014/30/EU |
| RED: | 2014/53/EU |
| RoHS: | 2015/863/EU |
| WEEE: | 2012/19/EU |

