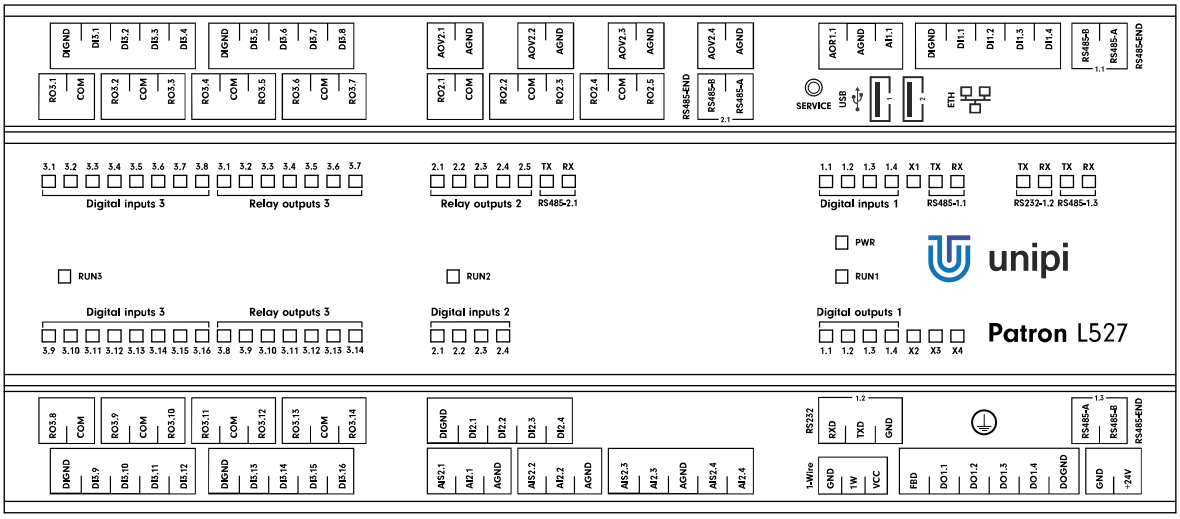
Unipi Patron L527

PRODUCT DESCRIPTION

Unipi Patron L527 is a programmable logic controller (PLC) designed for automation, control, regulation and monitoring. The L527's architecture is focused on a higher number of analog I/Os, but also features a high number of all inputs/outputs available on Unipi products (digital, relay). That makes it applicable in complex projects including measurements and control of analog components. The controller is equipped with four serial interfaces (RS485 + RS232) and a 1-Wire interface for connection of digital temperature or humidity sensors.



i.MX 8M

mervis software included

COMPUTING MODULE

i.MX 8M Mini quad-core CPU
(Arm© Cortex©-A53, max 1.8 GHz),
1 GB LPDDR4 RAM, GB eMMC onboard memory

FUNCTIONALITY

Automation, IoT and IIoT, remote online monitoring and regulation, HVAC control (heating, ventilation, air conditioning), SCADA, sensorics, smart home control (lighting, doors, locks, irrigation etc.)

FEATURES

Inputs/outputs

24 × digital input incl. counter
4 × digital output
19 × relay output
5 × analog input
5 × analog output

Communication interfaces

3 × RS485
1 × RS232
1 × 1-Wire bus
1 × 100 Mbit Ethernet
2 × 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
- Open-source solutions – Node-RED, openHAB, Homebridge, FHEM, PiDome, DomotiGa, Domoticz, Pimatic and many more
- Custom SW implementation– EVOK open API, Modbus TCP interface, SysFS

Other features

- The most powerful compact controller on the market
- Developed and manufactured in the EU
- Durable aluminium chassis (IP20)
- Extended warranty (3 years)
- Special functionality – Direct Switch, MasterWatchdog, user LEDs
- Available in OEM variant, broad extension options – PoE/PoE+, microSD, wireless technologies (LTE, Wi-Fi, Zigbee, ...), Secure boot and more

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Communication

Ethernet	1 × 100 Mbit Ethernet
Serial/bus channels	3 × RS485, 1 × RS232, 1 × 1-Wire
RS485 1.1, 2.1 transmission speed	134 baud ... 115 200 baud
RS485 1.3 transmission speed	50 baud ... 3 Mbaud
RS485 galvanic isolation	Yes
RS485 biasing resistors	Yes, 560 Ω
RS485 terminating resistor	Builtin attachable, 120 Ω
RS232 transmission speed	50 baud ... 3 Mbaud
RS232 galvanic isolation	No
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
USB	2 × USB 2.0

Digital inputs

No. of inputs × groups	4 × 6
Functions of inputs	Counter (incl. memory), Direct Switch
Input type	SINK
Input terminal	DI
Common ground	DIGND
Maximum voltage for log. 0	3 V⎓
Minimum voltage for log. 1	7 V⎓
Maximum voltage	35 V⎓
Non-defined state	3-7 V⎓
Input resistence for log. 1	6 200 Ω
Voltage drop on DI diode	1.2 V
Minimum pulse length	20 µs
0->1 / 1->0 delay	Typ. 20 µs / 60 µs
Maximum CNT counter input frequency	10 kHz
Galvanic isolation	Yes (between the groups)
Insulation voltage	2 000 V

Digital outputs

No. of inputs × groups	4 × 1
Functions of inputs	PWM
Output type	SINK (NPN – open collector)
Output terminals	DO
Common ground	DOGND
Switching voltage	5–50 V⎓
Switching current continuous/pulse	750 mA / 1 A
Max. total group load	1 A
Inductive load handling	Integrated FBD diode (optional)
Switching period (open/close)	Typ. 130 ns / 20 ns
Maximum PWM resolution	16 bits
Maximum PWM frequency	200 kHz
Galvanic isolation	No

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

Power supply

Rated voltage - SELV	24 V⎓
Power consumption	Typ. 8 W Max. 17 W
Reverse polarity protection	Yes

Dimensions and weight

Dimensions	210 × 90 × 60 mm
Weight	555 g

Relay outputs

No. of inputs × groups	1 × 3, 2 × 8
Output type	Electromechanic non-shielded relay
Output terminal	RO
Common terminal	COM
Contact type	Normally open (SPST-NO)
Used relay type	FTR-F3AA024E-HA
Maximum switching voltage	250 V∿ 30 V⎓
Maximum switching current	5 A
Maximum common terminal current	10 A
Short-term current overload	5 A
Mechanical lifespan	5 000 000
Electrical lifespan	Up to 100 000 (according to the connected load)
Operate/release time	10 ms
Designed for load character	Resistive
Load handling	External (RC, varistor, diode, thermistor)
Short circuit protection	No
Overvoltage protection	No
Galvanic isolation	Yes
Insultaion voltage	4 000 V

Analog inputs

No. of inputs × groups	1 × 1	4 × 1
Input terminals	AI	AI, AIS
Common ground	AGND	AGND
Input modes	0–10 V⎓ voltage meas. 0–20 mA current meas.	0–10 V⎓ voltage meas. 0-2.5 V⎓ voltage meas. 0–20 mA current meas. 0–1960 Ω resistance meas. 0–100 kΩ resistance meas.
Maximum input voltage	12 V⎓	15 V⎓
Input resistance (voltage meas.)	66 kΩ	44 kΩ
Input resistance (current meas.)	100 Ω	100 Ω
Accuracy	±0.5 %	±0.2 %
Resolution	12 bits	16 bits (voltage and current meas.) 24 bits (resistance meas.)
Conversion time	10 µs	60 µs (voltage and current meas.) 400 ms (resistance meas.)
Protection type	Integrated overvoltage	Integrated overvoltage
Galvanic isolation	No	Yes (from other sections, see chapter 1.4)

Analog outputs

No. of inputs × groups	1 × 1	4 × 1
Output terminals	AOR	AOV
Common conductor	AGND	AGND
Output functions	0–10 V⎓ voltage source 0–20 mA current source 0–1960 Ω resistance meas.	0–10 V⎓ voltage source
Output voltage range	0–10 V⎓	0–10 V⎓
Output current range	0–20 mA	–
Maximum output current	20 mA	20 mA
Output accuracy	±0.5 %	±0.5 %
Resolution	12 bits	12 bits
Conversion	1 ms	300 µs
Protection type	Integrated overvoltage	Integrated overvoltage
Galvanic isolation	No	Yes (from other sections, see chapter 1.4)

Directive compliance

LVD:	**2014/35/EU**
EMC:	**2014/30/EU**
RoHS:	**2015/863/EU**
WEEE:	**2012/19/EU**