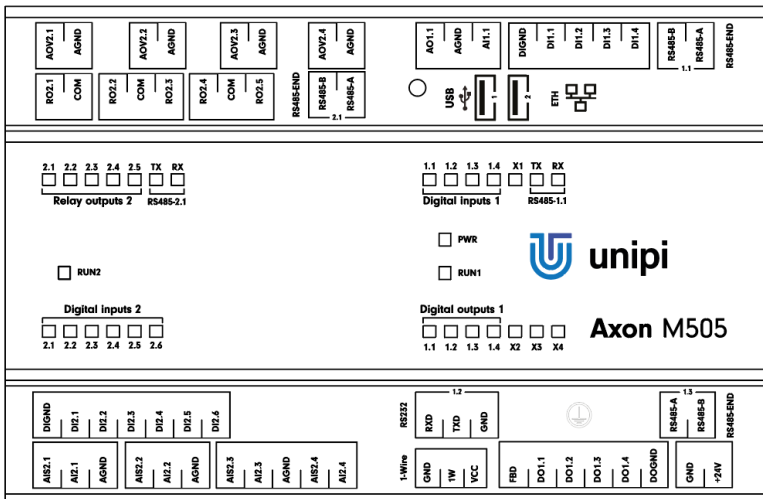# Unipi Axon M505

PRODUCT DESCRIPTION

Unipi Axon M505 is a programmable logic controller (PLC) designed for automation, control, regulation and monitoring. The M505 is an intermediate model of the Axon 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 also equipped with four serial interfaces (RS485 + RS232) for connection of extension modules or gateways, and a 1-Wire interface for connection of digital temperature or humidity sensors.

COMPUTING MODULE

Allwinner H5 1.2 GHz quad-core CPU, 1GB RAM, 8GB eMMC onboard memory

FEATURES

Inputs/outputs

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

Software

- Powered by OS Linux
- Mervis – IDE (IEC 61131-3), HMI editor, proxy server, cloud database, SCADA, 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

FUNCTIONALITY

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

Communication interfaces

3 × RS485
1 × RS232
1 × 1-Wire bus
1 × 1Gbit Ethernet
2 × USB 2.0

Other features

- Built-in webserver
- Special functions – Direct Switch, MasterWatchdog, user LEDs
- Durable aluminium chassis (IP20)
- Extended operating temperature range
- Available in an OEM variant
- Custom development available (IQRF, LoRa, wM-Bus, ZigBee, EnOcean and more)

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Unipi Axon M505

- **Communication**

Ethernet	1× 1Gbit 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 mm^2
WiFi	IEEE 802.11 b/g/n
Bluetooth	4.0, Low Energy (BLE)
WiFi/Bluetooth antenna	Internal
USB	2 × USB 2.0

- **Digital inputs**

Nr.of inputs × groups	4 × 1, 6 × 1
Common connector	DIGND
Galvanic isolation	Yes
Functions of inputs	Counter (incl. 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 × 2, 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 / 0–20mA Resistance measurement: 0–2 kΩ (Pt/Ni1000)	0–10 V
Galvanic isolation	No	Yes
Max. voltage/current	10 V / 20 mA	10 V / 25 mA
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 .. + 70 °C, relative humidity 10 % .. 95 %, without agressive substances, condensing vapor and fog
Storing conditions	- 25 °C .. + 70 °C, relative humidity 10 % .. 95 %, without agressive substances, condensing vapor 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	368 g

- **Standards compliance**

EN 60730-1 ed.3:2012
RoHS
WEEE

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