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Product Data Sheet

CENTRAL UNITS

Model number: **AL-CPU-M.1-A.18i**

DESCRIPTION:

Ambity Line™ Series Central Unit.

The device has a built-in (internal) 8-channel input/output module AL-IO-A.18i.

> 8 dedicated channels DO, working as:

- digital outputs: OC (active low) 100mA

The device can be extended with external expansion modules, thus increasing the number of inputs/outputs and communication ports.

SPECIFICATION:

Power supply:

Voltage	22..24..26 VDC
Power consumption	Typically 150mA @24V (max. 250mA)
Power source	External stabilized power supply
Protection against change of polarity	YES
Internal overload protection	YES (1.5A)
Emergency power supply	YES – external 12V 1.2Ah battery pack Charging with 150mA current via built-in charger

Processor, memory, performance:

Processor	ARM Cortex-M7 200MHz
User program size	Up to 2 MB Stored in the internal file system
User program memory	1 MB MCU FLASH (fast; program code only) 128 kB MCU SRAM (fast; only stack and program data) 4 MB SDRAM (shared between code and data)
RETAIN data size	0.25 MB (saved to the internal file system when the user program is stopped and restored when the user program is started)
Supported number of inputs/outputs	It results from the modules used. The CPU allows you to connect up to 10 I/O modules, obtaining up to 120 supported I/O (10x external 12-channel module)
Configurable program cycle time	50..1000ms

Interfaces:

Modbus RTU isolated	Operating modes: master, slave Transmission speed: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 Insulation strength: Basic insulation; Vmax 560Vrms; Test voltage 2500Vrms@1min
Modbus RTU non-isolated	Operating modes: master, slave Transmission speed: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Ethernet	10/100 Base-T
Local user interface	OLED display 128x64 pixels, monochrome white 6 buttons
USB-OTG	MicroUSB slot type In HOST mode: USB memory support (data transfer from to AL-CPU); supported formats: FAT32

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	In DEVICE mode: communication with the computer (AL Utility™ program)
microSD	Support for a memory card for data recording and data transfer from/to AL-CPU Supported formats: FAT32
AL-IO-bus	System bus: for communication with AL-IO modules (RS-485 with dedicated communication protocol)

Measurement and control:

Number of channels	8
including configurable	0
Signal type	DO
Galvanic isolation from the system	NO
Galvanic isolation between channels	NO
Measurement speed	min. 10 measurements per second (each channel)
Digital outputs:	
type	OC (active low) (N-MOSFET transistor)
maximum voltage	30V
maximum current	100mA
impedance in the open state	~100 kOhm
impedance in the short-circuit state	~5 Ohms
overload protection	YES (100 mA)
protection against change of polarity	NO (changing the polarity risks damaging the channel)

ADDITIONAL INFORMATION:

Installation:

Type of installation	DIN rail, Type O, 35 mm
Mounting method	Built-in latches (apply-and-press type), no need for additional brackets or adapters
Replacement or expansion	Directly on the DIN rail
Combining modules	Using a bus connector, forming a communication and power bus, installed inside the DIN rail (no wiring required)

Housing:

Degree of protection	IP 20/DIN EN 60529
Fabrication material	Polyamide (PA66)
Flammability and fire safety class	UL 94 V0
Color	Light gray RAL 7035 (green plugs)
Dimensions (without plugs)	35 x 99 x 114.5 mm (W x H x D)
Dimensions (with plugs)	35 x 109 x 114.5 mm (W x H x D)

Input/output terminals:

Type	Terminal block detachable, screw connectors, single-section
Raster	5.0 mm
Ø hole / cable dimensions	max. power cable cross-section 2.5 mm2/ max. cable diameter 2.0 mm
Insulation stripping length	7 mm
Screw type	M3

Conditions of use:

Temp. range	0... +55°C
Humidity	85% max.

Transportation and storage:

Temp. range	-20… +70°C
Humidity	85% max.
Unit packaging	Cut cardboard box
Number of pieces per package	1
Package dimensions	118 x 80 x 140 mm (W x H x D)
Country of origin	PL

Compliance/certifications:

CE mark	YES
RoHS rating	YES
REACH Assessment	YES

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