H1.M200

H1.M200 is a computer designed for use in control and automation systems. H1.M200 is powered by Raspberry Pi Compute Module 4 and Linux system. Ready to use with the CODESYS® development system and the IEC 61131-3 programming languages.

Features

- **Powered by Raspberry Pi CM 4**
  BCM2711 quad-core
  ARM Cortex-A72 64-bit SoC 1.5GHz
  1 GB RAM LPDDR4
  8 GB eMMC Flash

- **A lot of inputs and outputs**
  8 x digital opto-isolated inputs
  4 x dry contact inputs
  8 x open drain outputs
  4x analog inputs 0-10V
  2x analog outputs 0-10V

- **Rich set of interfaces**
  3x USB 2.0
  3x RS-232
  2x RS-485
  2x Ethernet
  HDMI
  (Option: 1-Wire, CAN)

- **Expansion connectors**
  M.2 2242 key B, PCIe 2.0 x1
  M.2 3042 key B, modem with dual SIM

- **Real Time Clock**
  Real Time Clock with battery backup

- **Robust design**
  Two watchdogs
  Meets requirements of EN 61326-1:2021
  for basic and industrial electromagnetic environments

- **Created for long life**
  Designed, developed and produced
  in European Union
  No electrolytic capacitors (except UPS supercaps)
  No moving parts

- **Low power consumption**
  High efficiency DC/DC converters
  Peripherals power supply control

- **Integrated UPS**
  Supercapacitor based UPS
  Safe shut down procedure
  Power button
  Battery-free, eco-friendly

- **Linux on board**
  Small and stable distribution that is fully compatible with official Raspberry Pi OS
  Large community
  Full support for all interfaces

- **Easy programmable**
  Ready to use **CODESYS**® Runtime with complete HVAC functions libraries
  IEC 61131-3 programming languages

- **DIN rail enclosure**
  DIN rail enclosure with optional wall mount

Applications

- **Industrial control and automation systems**
- **Building automation**
- **Factory automation**
- **Industrial control networks**

Technical Specifications

CPU & memory	
SoC	BCM2711, quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz²
RAM memory	1 GB LPDDR4 (optionally up to 8GB)
Flash memory	8 GB eMMC (optionally up to 32GB)

Power supply		
Supply voltage	24V DC (20 … 32V)	
Power consumption³	Conditions	Supply current @ 24V
	CPU 100% load	0,25A
	CPU 1% load	0,16A

Interfaces & I/O	
Ethernet 1Gbit, RJ-45	Yes
Ethernet 100Mbit, RJ-45	Yes
2 x RS-485, terminal blocks	Yes
RS-232, DB9 male	Yes
2 x RS-232, terminal blocks	Yes
1-WIRE, terminal blocks	Yes
CAN FD, terminal blocks	Yes
8 x digital opto-isolated inputs	Yes
4 x dry contact inputs	Yes
8 x open drain outputs	Yes
4 x analog inputs	Yes
2 x analog outputs	Yes
M.2 2242 key B, PCIe 2.0 x1	Yes
M.2 3042 key B, dual SIM, nano	Yes
Trusted Platform Module	Yes
Supercapacitor based UPS	Yes
Mini USB 2.0 Type B	Yes
USB host 2.0 Type A	2

I/O parameters		
Digital opto-isolated inputs	Low-level input voltage	0 … +5 V DC
	High-level input voltage	+10 … +28V DC
	Isolation voltage	5 kVRMS
	Input resistance	>=10kΩ
Open drain outputs	Maximum current	500 mA
	Maximum voltage	28 V DC
Analog inputs	Voltage Range	0 … +10V
	Resolution	10-bit
Analog outputs	Voltage Range	0 … +10V
	Resolution	10-bit
5V output DC	Maximum current	0.1 A
Terminal blocks	Wire range	0.5 - 1.5 mm2 , 28 -16 AWG
	Torque	0.2 Nm
	Strip length	7 mm

Standards	
EU standard	EN IEC 61326-1:2021

Environment	
EMC emission	Group 1 class A and class B equipment according to EN IEC 61326-1:2021
EMC immunity	Industrial electromagnetic environment according to EN IEC 61326-1:2021
Operating Temperature	0 °C ~ 50 °C
Operating Relative Humidity	5 ~ 90%, non-condensing
Storage Temperature	-25 °C ~ 50 °C
Protection Rating	IP20

Miscellaneous		
Watchdog	Two watchdogs: - SoC BCM2711 built-in, - connected to GPIO.	
RTC backup battery	CR2032, 3V	
Dimension	212 x 114 x 59 mm (including terminal blocks connectors)	
Enclosure	Mount	Din-rail, wall mount
	Material	ABS
Weight (Version H1.M200)	358g	

Versions	
H1.M200	Basic version, without CODESYS MC license
H1.M200-CDS	with CODESYS MC license on USB-Dongle
H1.M200-CDS-LTE	with CODESYS MC license on USB-Dongle 1GB RAM / 8GB Memory / 4x1,5GHz with LTE-Module (without SIM Card) for installation in H1.M200
H1.M200-CDS-WiFi *(not yet available)*	with CODESYS MC license on USB-Dongle 1GB RAM / 8GB Memory / 4x1,5GHz with WiFi/Bluetooth OnBoard (without Antenna)
H1.M200-CDS-LTE-WiFi *(not yet available)*	with CODESYS MC license on USB-Dongle 2GB RAM / 16GB Memory / 4x1,5GHz with LTE-Module (without SIM Card) for installation in H1.M200 + WiFi/Bluetooth OnBoard (without Antenna)

2) depending on processor workload, CPU throttling may occur
3) power consumption of devices connected to USB and M.2 is not included