



ED-PAC3020

Datasheet

by EDA Technology Co., Ltd

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ED-PAC3020

Real-time CODESYS Programmable Automation Controller

- CODESYS Control Real-time (RTE) & Visualization (Web & Target)
- Optimized for Raspberry Pi OS and processor core system allocation to meet real-time demand
- The soft PLC can achieve a control processing cycle time of up to 250μs, and can complete 16-axis motion control within a 1ms processing cycle time
- Support IEC-61131-3 PLCopen languages (FBD, LD, IL, ST, SFC and CFC)
- Upstream connectivity IT/OT communication (MQTT, OPC UA)
- Support EtherCAT Master, and Modbus TCP Master protocols
- 1 x Gigabit Ethernet, 2 x USB 3.0, 2 x USB 2.0, 1 x RS232, 1 x RS485
- Built-in RTC, support SuperCAP and CR1220 battery backup



Specifications

Hardware System	
CPU	Broadcom BCM2712 quad-core Arm Cortex-A76 64-bit @2.4GHz
VPU	4Kp60 HEVC decoder
GPU	OpenGL ES 3.1 & Vulkan 1.2
Memory	Options for 2GB, 8GB LPDDR4-4267 SDRAM
Storage	1 x M.2 B-Key interface (for 2230/2242 SSD storage expansion, optional 128GB/256GB supported)

CODESYS	
Runtime	Multicore CODESYS Control Runtime System (pre-installed by default), with the Singlecore CODESYS Control Runtime System available as an optional add-on
Programming Mode	IEC 61131-3 programming languages, including ST, LD, FBD, SFC and CFC
IDE	CODESYS V3.5
Fieldbus	CODESYS EtherCAT Master and CODESYS Modbus TCP Master
Motion Control	Optional CODESYS SoftMotion and CNC+Robotics
Visualization	Optional CODESYS TargetVisu and CODESYS WebVisu
OPC UA	Support OPC UA Server

Software	
Operating System	

Software	
	Raspberry Pi OS (Desktop) 64-bit Raspberry Pi OS (Lite) 64-bit

Front I/O	
Audio OUT	1 x Audio Output (HPO), 3.5mm audio jack connector (green), stereo audio output.
Audio IN	1 x Audio Input (LINE IN), 3.5mm audio jack connector (red), supporting stereo audio input.
RS485	1 x RS485 port, 3-Pin 3.5mm pitch phoenix terminals with 120R terminal resistor. The signal is defined as GND/A/B.
RS232	1 x RS232 port, 3-Pin 3.5mm pitch phoenix terminals, the signal is defined RS232 as GND/TX/RX.
USB 2.0	2 x USB 2.0 ports, dual layer Type-A connector, each channel supports up to 480Mbps.
USB 3.0	2 x USB 3.0 ports, dual layer Type-A connector, each channel supports up to 5Gbps.
1000M Ethernet	1 x adaptive 10/100/1000M ethernet port, RJ45 connector. It can be used to access the network, supporting PoE.

Rear I/O	
SD Card Slot	1 x Micro SD card slot, which is used to install Micro SD card. It supports booting the OS from SD card.

Side I/O	
HDMI*1	2 x HDMI ports, Micro HDMI connector, supporting 4K 60Hz
Power	1 x power in port, USB Type-C connector, supporting 5V/5A DC power input.
*1: Some Micro HDMI cables have shorter Micro HDMI connectors, which may result in abnormal HDMI connections, so it is recommended to use Raspberry Pi's official Micro HDMI to standard HDMI cable, which can be purchased in the "Optional Accessory" section.	

Buttons and Indicators	
ON/OFF	1 x power button, which is used to turn on and turn off the device.
PWR	1 x red power indicator, using to check the status of device power-on and power-off.
ACT	1 x green system indicator, using to check the working status of device.
COM1~COM2	2 x green UART indicators, which is used to check the communication status of UART port.

Expansion Functions	
RTC	RTC with 1F SuperCAP backup, which can ensure that the system clock is not affected by device power-off. We also provide a battery base, and you can buy a CR1220 battery backup for RTC.

Expansion Functions	
Buzzer	A tip or an abnormality can be configured according to actual application, which realizes the alarm function.

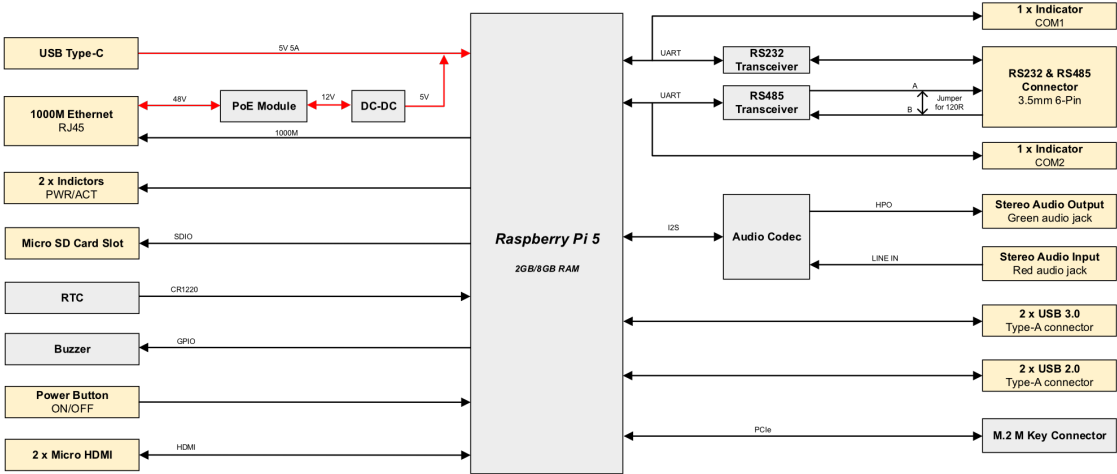
Electrical Characteristics	
Input Voltage	5V DC
Power Consumption	25W (Max)

Mechanical Characteristics	
Dimensions	102.8mm x 89.5mm x 32.5mm (WxDxH)
Weight	300g
Installation	Placing on the desk and wall mounting

Wireless	
Wi-Fi	Dual-band 802.11ac Wi-Fi
Bluetooth	Bluetooth 5.0 / Bluetooth Low Energy (BLE)

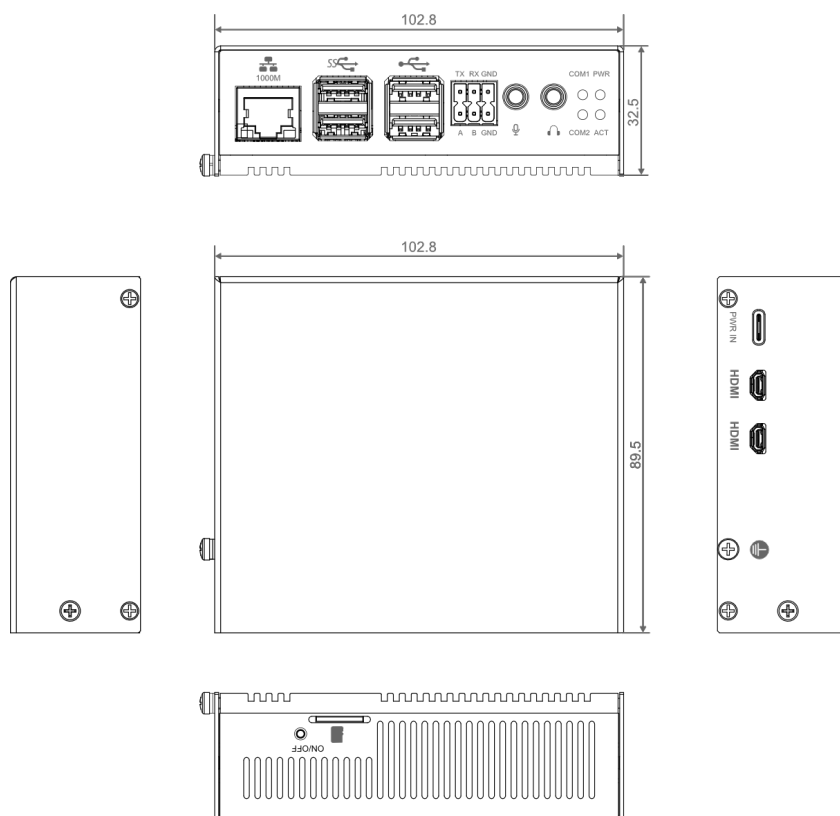
Environmental & Regulatory	
Operating Temperature	-25°C ~ 60°C
Storage Temperature	-25°C ~ 60°C
Ambient humidity	5% ~ 95% (non-condensing)

System Diagram

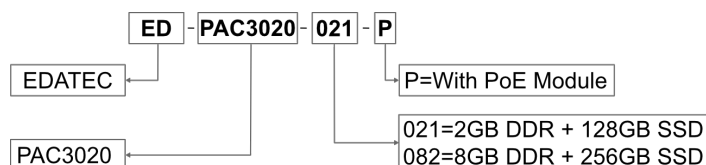


Dimensions

Unit: mm



Ordering Code



Example

P/N: **ED-PAC3020-021**

Configuration: Real-time CODESYS Programmable Automation Controller Based on Raspberry Pi 5, with 2GB DDR, 128GB SSD, PoE and CODESYS Control License (Multicore).

TIP

The pre-installed CODESYS license includes Multicore, EtherCAT Master, Modbus TCP Master, and OPC UA Server. If you require additional licenses, please purchase them separately from [Optional CODESYS Ordering Code](#).

Optional CODESYS Ordering Code

CODESYS licensing includes TargetVisu, WebVisu, Softmotion, CNC+Robotics, EtherCAT Master, Modbus TCP Master, OPC UA Server and Multicore functional modules. You can choose different models according to actual needs.

Model*1	EtherCAT Master	Modbus TCP Master	OPC UA Server	TargetVisu	WebVisu	Softmotion	CNC+ Robotics	Multicore
ED-CODESYS-TV-MC	√	√	√	√				√
ED-CODESYS-WV-MC	√	√	√		√			√
ED-CODESYS-TV-WV-MC	√	√	√	√	√			√
ED-CODESYS-TV-SM-MC	√	√	√	√		√		√
ED-CODESYS-WV-SM-MC	√	√	√		√	√		√
ED-CODESYS-SM-CNC-MC	√	√	√			√	√	√
ED-CODESYS-WV-SM-CNC-MC	√	√	√		√	√	√	√
ED-CODESYS-TV-WV-SM-CNC-MC	√	√	√	√	√	√	√	√

*1: The license cannot be purchased separately, you can only purchase it together with the hardware device.

Optional EtherCAT I/O Modules

EtherCAT Coupler

Model	Description
ED-EIOBRG-EC	EtherCAT Coupler

I/O Modules

Model	Description
ED-EIO8XP	8-channel digital input module (PNP)
ED-EIO8XN	8-channel digital input module (NPN)
ED-EIO16XP	16-channel digital input module (PNP)
ED-EIO16XN	16-channel digital input module (NPN)

Model	Description
ED-EIO8YP	8-channel digital output module (PNP)
ED-EIO8YN	8-channel digital output module (NPN)
ED-EIO16YP	16-channel digital output module (PNP)
ED-EIO16YN	16-channel digital output module (NPN)
ED-EIO4YR	4-channel digital output module (Relay)
ED-EIO4ADV	4-channel analog input module (voltage), -5~5V/0~10V/-10~10V, configurable
ED-EIO4ADA	4-channel analog input module (current), 4-20mA/0-20mA, configurable
ED-EIO8ADA	8-channel analog input module (current), 4-20mA/0-20mA, configurable
ED-EIO4AD	4-channel analog input module (voltage/current mixed), -5~5V/0~10V/-10~10V/4-20mA/0-20mA, configurable
ED-EIO4DAV	4-channel analog output module (voltage), -5 ~ 5V/0 ~ 10V/-10 ~ 10V, configurable
ED-EIO4DAA	4-channel analog output module (current), 4-20mA/0-20mA, configurable
ED-EIO4RTD	4-channel RTD Module
ED-EIO4TC	4-channel TC Module
ED-EIO2HCD	2-channel High Speed Counter Module
ED-EIOPWR	Power Expansion Supply Module
ED-EIOTERM	Bus End Cover

Optional Accessory

You can choose a power adapter according to actual needs.

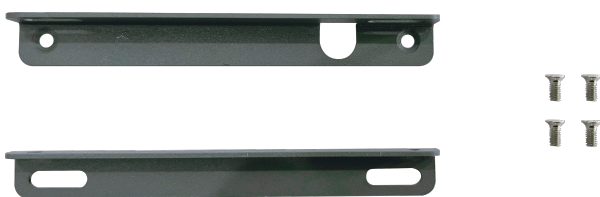
Model	Description	Picture
SC1149	Raspberry Pi 27W USB-C Power Supply White UK	
SC1150	Raspberry Pi 27W USB-C Power Supply White AU	
SC1151	Raspberry Pi 27W USB-C Power Supply White IN	
SC1152	Raspberry Pi 27W USB-C Power Supply White EU	
SC1153	Raspberry Pi 27W USB-C Power Supply White US	

Model	Description	Picture
SC1154	Raspberry Pi 27W USB-C Power Supply Black UK	
SC1155	Raspberry Pi 27W USB-C Power Supply Black AU	
SC1156	Raspberry Pi 27W USB-C Power Supply Black IN	
SC1157	Raspberry Pi 27W USB-C Power Supply Black EU	
SC1158	Raspberry Pi 27W USB-C Power Supply Black US	

It is recommended to choose the official Raspberry Pi Micro-HDMI to standard HDMI cable.

Model	Description	Picture
SC0358	Raspberry Pi Micro-HDMI to Standard HDMI (A/M), 1m cable	

An optional wall-mounted bracket is available for installation as needed.

Model	Description	Picture
ED-ACCBKT-L3020	Wall-mounted bracket for ED-IPC3020 and ED-PAC3020	

Packing List

- 1 x ED-PAC3020 Unit
- 4 x Pads