janz**tec**
Industrial Computing Architects

**emPC®**

# emPC-A/RPI3+

## Industrial Embedded Controller powered by Raspberry Pi 3, Model B+



## PRODUCT DESCRIPTION

With emPC-A/RPI3+ Janz Tec AG provides a device which uses an <u>original</u> Raspberry Pi 3 model B+ module inside. This module is mounted on a self-developed mainboard providing a 24V power supply, an additional CAN interface, a real-time clock, digital inputs and outputs and an additional RS232/RS485 interface. Furthermore, the device has a robust plastic housing and passed a standard EMC certification.

The emPC-A/RPI3+ can be ordered in several versions. A microSD card is always necessary in addition to run the device. This fits in the SD card slot on the internal Raspberry module. Customers can provide their own microSD card and download and install standard Raspbian image themselves. They can also download Janz Tec's additional device drivers free of charge from the Janz Tec Github page.

A second option is to order the system with a microSD card that has operating system and device drivers already pre-installed.

Other options include a compatible power supply, a Java environment, and a CODESYS SoftPLC runtime environment.

## FEATURES

### Processor

- Powered by Raspberry Pi 3, Model B+
- Quad-Core CPU based on ARM Cortex-A53 with 4 x 1.4 GHz [1]
- Fanless cooling concept
- Real-time clock, battery buffered

### Memory

- System memory 1 GB DDR2 RAM
- External accessible µSD card slot

### Physical

- Ambient operating temperature 0 °C ... 35/40°C [2]
- Non-operating temperature -20 °C … 75 °C
- Humidity 5 % ~ 95 %, non-condensing
- Dimensions (w x d x h): 99.8 x 96.7 x 30.0 mm
- Desktop, Wall or DIN rail mounting

### Power Supply

- Input 9 … 32 $V_{DC}$

### Connectors and Interfaces

- 1 x 10/100/1000 MBit/s Ethernet
- BCM43143 WiFi/WLAN on board
- 1 x HDMI graphic interface
- 4 x USB (v2.0)
- 1 x 9-pin D-SUB connector for serial debug console (RS232 only with RxD and TxD)
- 1 x I/O connector, providing:
  - 1 x CAN (ISO/DIS 11989-2, opto-isolated, term. settings via jumper, SocketCAN supported)
  - 1 x RS232 (Rx, Tx, RTS, CTS) or switchable to RS485 (half duplex; term. settings via jumper)
  - 4 x digital inputs (24$V_{DC}$)
  - 4 x digital outputs (24$V_{DC}$)

[1] CPU performance will be reduced by software in our standard OS image to 4 x 600 MHz for protecting the system against overheating. Using only 1 core with full 1.4 GHz is also possible, pls. see hardware manual for more detailed information

[2] temperature range depends on mounting situation of the device, pls. see hardware manual for more detailed information

© 2019 Janz Tec AG

Industrial Computing Architects

**Software**

- Raspbian lite operating system
- CODESYS V3 runtime environment
- Oracle Java Embedded
- CANopen protocol stack and tools

# ORDERING INFORMATION

| Ordering No. | Product Name | Description | List Price |
|---|---|---|---|
| SY-EPC-RPI3P | emPC-A/RPI3+ | Industrial embedded controller hardware based on Raspberry Pi 3 B+ | EUR 260.00 |
| SD-MIC-008GB | Storage medium | 8 GB microSD storage medium | EUR 35,00 |
| SO-IMG-00001 | Operating system image | Pre-installed Raspbian lite operating system image including emPC-A/RPI device driver package (SD-MIC-008GB needs also to be ordered!) | EUR 35,00 |
| OE-NTW-PI15W | Power supply | External power supply unit | EUR 25,00 |
| SO-CDS-SL001 | CODESYS V3 Control for Raspberry Pi SL | Software licenses for CODESYS control runtime system and WebVisu. OPC UA server, EtherCAT Master, Profinet Master, Modbus TCP Master and Slave, Modbus RTU Master and Slave, CANopen, EtherNet IP scanner and adapter. | EUR 65,00 |
| SO-JVM-EMB01 | Java | Oracle Embedded Java SE Runtime license | on request |
| SO-SOF-XXXXX | CANopen | CANopen Stack ANSI-C Source code for master/slave, incl. CANopen DeviceDesigner, ready-to-run examples, user- and reference manual and 6 months support | on request |
| SO-SOF-XXXXX | CANopen-TCP/IP-Gateway | Universal TCP/IP-CANopen-Gateway according to CiA309-3, ASCII command interface to a complete CANopen master, supports main features of CiA309-3 | EUR 49,00 |

# RELATED PRODUCTS

## emVIEW-7/RPI3+

7.0" Panel PC system based on Raspberry Pi 3, Model B+

## emWEB Series

For Webbrowser visualized applications optimized. With latest brwoser support, for HTML5 sites. Linux based with Touchscreen.

## emIOT-X

Industrial IoT Gateway fanless fanless and compact system based on Intel x86 technology

## emIOT-Edge

IoT Edge Gateway for Industrial 4.0 solutions. Fanless and compact embedded flexible machine interface

Industrial Computing Architects