

# REVOLUTION PI

The Industrial Pi



Powered by  
Raspberry Pi

revolutionizing the automation industry  
since 2016



PLEASE  
ALLOW  
ME TO  
INTRODUCE  
MYSELF...

# The flexible powerhouse for automation and IIoT solutions

The success story of the single-board computer Raspberry Pi has been unbroken since its introduction in 2012. By launching the very first Revolution Pi models in 2016, we expanded its success story to the industrial world.

Revolution Pi has been the first truly industry-compatible IPC based on Raspberry Pi. By using the Raspberry Pi Compute Module we were able to develop a robust and industry-compatible periphery which meets all important industrial standards incl. IEC 61131-2.

Depending on the requirements of the application, the RevPI base modules can be easily extended by expansion modules such as digital and analog IO modules as well as fieldbus gateways.



# That's why we call Revolution Pi the



# ultimate multi tool for automation & IIoT



# Software? Your choice!

Revolution Pi, while an open system, comes equipped with software and apps covering most applications. It features a customized Raspberry Pi OS, including a real-time kernel patch and a process image for easy value reading and writing. This approach balances the original Raspberry Pi environment with enhanced task priority control.

Applications can be programmed via Node-RED, Python, or C. For more flexibility, you can build a custom image using files from our GitLab repository. Off-the-shelf solutions like CODESYS are also available for project realization.

Furthermore, the Revolution Pi base modules offer various built-in network protocols. These include the fieldbus protocols Modbus RTU and Modbus TCP (both master and slave functionality), as well as MQTT client and OPC UA server capabilities.



**CODESYS**



**Node-RED**



**MQTT**



# Cloud connectivity

Collecting sensor data, processing it, and sending the processed data to a cloud is one of the Revolution Pi's key strengths, making it an ideal choice as an IIoT gateway. Its robust hardware design and versatile software capabilities enable seamless edge computing and data management. The Revolution Pi excels in bridging the gap between operational technology (OT) and information technology (IT), facilitating real-time decision-making and predictive maintenance strategies.

Revolution Pi has been certified by major cloud platforms, ensuring that integration with the most important cloud services, such as Microsoft Azure, Amazon Web Services, or Cumulocity IoT, can be done as smoothly and easily as possible. This certification not only streamlines the setup process but also guarantees compatibility and optimal performance when connecting to these cloud environments.

Additionally, the open-source nature of Revolution Pi allows for customization and adaptation to specific IIoT requirements, providing flexibility and scalability for diverse industrial applications.



# Tailor-made solutions

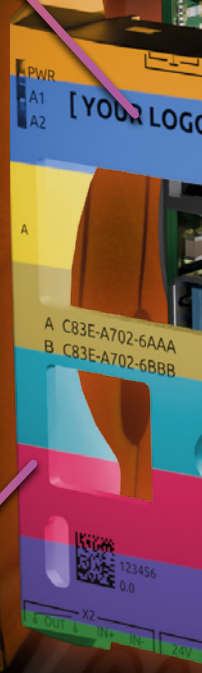
For all those who prefer a more individual and exclusive approach, we have the perfect solution:

If you decide to use Revolution Pi as the standard hardware for your next project, we will manufacture our Revolution Pi modules according to your wishes. From subtle customizations like adding your company logo to comprehensive hardware and software modifications - we offer tailored solutions for your specific requirements.

This way, you don't have to spend your time on hardware development and can focus on your core business, which in turn shortens the time-to-market for your own solution – a classic win-win situation.

**CUSTOM  
LASER  
ENGRAVING**

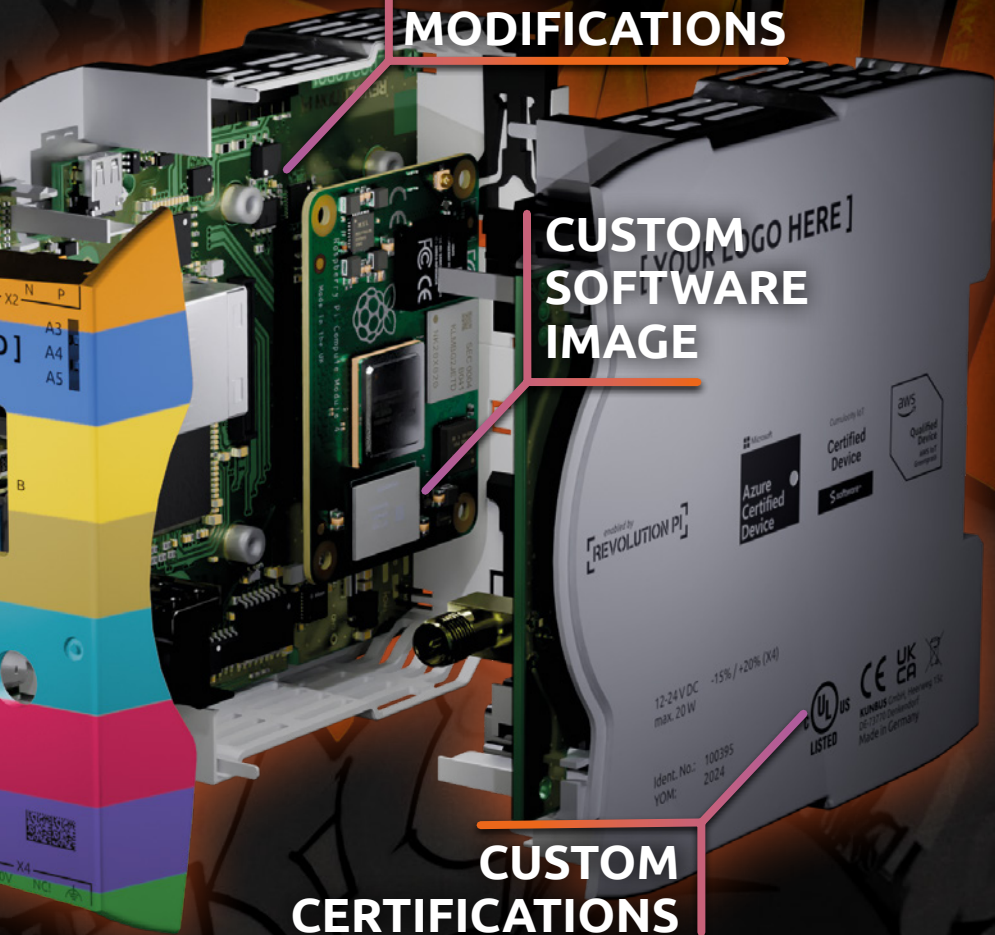
**CUSTOM  
COLOR**



**HARDWARE  
MODIFICATIONS**

**CUSTOM  
SOFTWARE  
IMAGE**

**CUSTOM  
CERTIFICATIONS**



# RevPi device connectivity overview

RevPi Core S system

RevPi Core SE system



**IPC**  
Base modules  
(RevPi Core series)

**IO**  
Expansion modules

**Gateway**  
Expansion modules

EtherNet/IP EtherCAT

RevPi Connect 5 system

RevPi Connect S system

RevPi Connect SE system

RevPi Connect 4 system



**IO**  
Expansion modules

**IPC**  
Base modules  
(RevPi Connect series)

**Gateway**  
Expansion modules  
(RevPi Con modules)

# RevPi Connect 5

Base modules powered by Raspberry Pi Compute Module 5



## RevPi Connect 5 device variants

SKU	WLAN	RAM	eMMC	RS485	CAN
100412	No	4 GB	32 GB	1 x	No
100413	Yes	4 GB	32 GB	1 x	No
100414	No	4 GB	32 GB	1 x	1 x
100415	Yes	4 GB	32 GB	1 x	1 x
100416	No	8 GB	32 GB	1 x	No

SKU	WLAN	RAM	eMMC	RS485	CAN
100417	Yes	8 GB	32 GB	1 x	No
100418	No	8 GB	32 GB	1 x	1 x
100419	Yes	8 GB	32 GB	1 x	1 x
100420	Yes	8 GB	32 GB	No	2 x

# KEY SPECS

<b>Processor</b>	Broadcom BCM2712, quad-core ARM Cortex-A76
<b>Clock rate</b>	2.4 GHz
<b>RAM</b>	up to 8 GB LPDDR4
<b>eMMC flash memory</b>	32 GB
<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Size (H x W x D)</b>	96 x 45 x 115 mm (incl. RP-SMA socket)
<b>Operating temperature</b>	-25 °C ... +60 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>EMI/ Surge/Burst tests*</b>	Passed
<b>CE, RoHS</b>	Yes
<b>UL</b>	in progress (planned)

# INTERFACES

<b>Interfaces</b>	<b>Quantity</b>
RS485 screw terminal (X2 connector, 4 pole)	0 / 1
CAN screw terminal (X2 and X3 connector, 4 pole)	0 / 1 / 2
RJ45 Gigabit Ethernet ports	2
USB 3.2 Gen 1 sockets	2
USB-C (solely for image transfer to eMMC)	1
Micro-HDMI socket (HDMI 2.0 (4K))	1
PiBridge (for RevPi expansion modules)	2
SMA socket for connecting an external antenna	1**

\* (acc. to EN61131-2 & IEC 61000-6-2)

\*\* only on devices with WLAN functionality;  
antenna not included.

**More details  
and specs:**



# RevPi Connect 4

Base modules powered by Raspberry Pi Compute Module 4



Device	WLAN	RAM	eMMC	SKU
RevPi Connect 4	No	2 GB	8 GB	100376
RevPi Connect 4	Yes	2 GB	8 GB	100377
RevPi Connect 4	No	4 GB	32 GB	100378
RevPi Connect 4	Yes	4 GB	32 GB	100379

Device	WLAN	RAM	eMMC	SKU
RevPi Connect 4	No	8 GB	32 GB	100395
RevPi Connect 4	Yes	8 GB	32 GB	100380

# INTERFACES

# KEY SPECS

<b>Processor</b>	Broadcom BCM2711, quad-core ARM Cortex-A72
<b>Clock rate</b>	1.5 GHz
<b>RAM</b>	up to 8 GB LPDDR4
<b>eMMC flash memory</b>	8 GB / 16 GB / 32 GB
<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Size (H x W x D)</b>	96 x 45 x 111 mm
<b>Operating temperature</b>	-25 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>EMI/ Surge/Burst tests*</b>	Passed
<b>CE, RoHS</b>	Yes
<b>UL</b>	Yes, UL-File-No. E494534

<b>Interfaces</b>	<b>Quantity</b>
RJ45 Gigabit Ethernet ports	2
USB 3.2 Gen 1 sockets	2
Micro HDMI socket (HDMI 2.0 (4K))	1
Micro USB 2.0 socket (for firmware uploads only)	1
PiBridge (for RevPi expansion modules)	2
SMA socket for connecting an optional antenna	1**
RS485 screw terminal (4 pole)	1
Freely programmable 24 V input	1
Freely programmable relay switching contact	1

\* (acc. to EN61131-2 & IEC 61000-6-2)

\*\* only on devices with WLAN functionality; antenna not included.

**More details  
and specs:**



# RevPi Connect S / SE

Base modules powered by Raspberry Pi Compute Module 4S



## Device

## SKU

RevPi Connect S 8 GB 100362

RevPi Connect S 16 GB 100363

RevPi Connect S 32 GB 100364

## Device

## SKU

RevPi Connect SE 8 GB 100368

RevPi Connect SE 16 GB 100369

RevPi Connect SE 32 GB 100370

# INTERFACES

# KEY SPECS

<b>Processor</b>	Broadcom BCM2711, quad-core ARM Cortex-A72
<b>Clock rate</b>	1.5 GHz
<b>RAM</b>	1 GB LPDDR4
<b>eMMC flash memory</b>	8 GB / 16 GB / 32 GB
<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Size (H x W x D)</b>	96 x 45 x 110.5 mm
<b>Operating temperature</b>	-25 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>ESD protection</b>	4 kV/8 kV
<b>EMI/ Surge/Burst tests*</b>	Passed
<b>CE, RoHS</b>	Yes
<b>UL</b>	Yes, UL-File-No. E494534

<b>Interfaces</b>	<b>Quantity</b>
RJ45 Ethernet ports (10/100 Mbit/s)	2
USB 2.0 sockets	2
Micro HDMI socket (HDMI 2.0 (4K))	1
Micro USB 2.0 socket (for firmware uploads only)	1
PiBridge (for RevPi expansion modules)	1
ConBridge (for RevPi Con expansion modules)	1
RS485 screw terminal (4 pole)	1
24 V input for shutdown signal of an UPS	1
Freely programmable relay switching contact	1

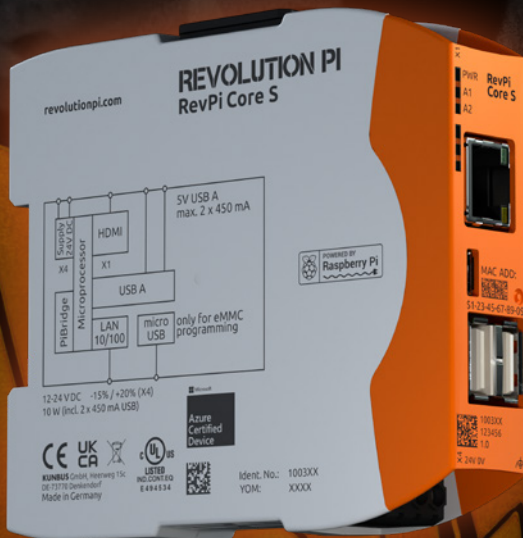
\* (acc. to EN61131-2 & IEC 61000-6-2)

More details  
and specs:



# RevPi Core S / SE

Base modules powered by Raspberry Pi Compute Module 4S



## Device

## SKU

RevPi Core S 8 GB

100359

RevPi Core S 16 GB

100360

RevPi Core S 32 GB

100361

## Device

## SKU

RevPi Core SE 8 GB

100365

RevPi Core SE 16 GB

100366

RevPi Core SE 32 GB

100367

# INTERFACES

# KEY SPECS

<b>Processor</b>	Broadcom BCM2711, quad-core ARM Cortex-A72
<b>Clock rate</b>	1.5 GHz
<b>RAM</b>	1 GB LPDDR4
<b>eMMC flash memory</b>	8 GB / 16 GB / 32 GB
<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Size (H x W x D)</b>	96 x 22.5 x 110,5 mm
<b>Operating temperature</b>	-25 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>ESD protection</b>	4 kV/8 kV
<b>EMI/ Surge/Burst tests*</b>	Passed
<b>CE, RoHS</b>	Yes
<b>UL</b>	Yes, UL-File-No. E494534

<b>Interfaces</b>	<b>Quantity</b>
RJ45 Ethernet port (10/100 Mbit/s)	1
USB 2.0 sockets	2
Micro HDMI socket (HDMI 2.0 (4K))	1
Micro USB 2.0 socket (for firmware uploads only)	1
PiBridge (for RevPi expansion modules)	2

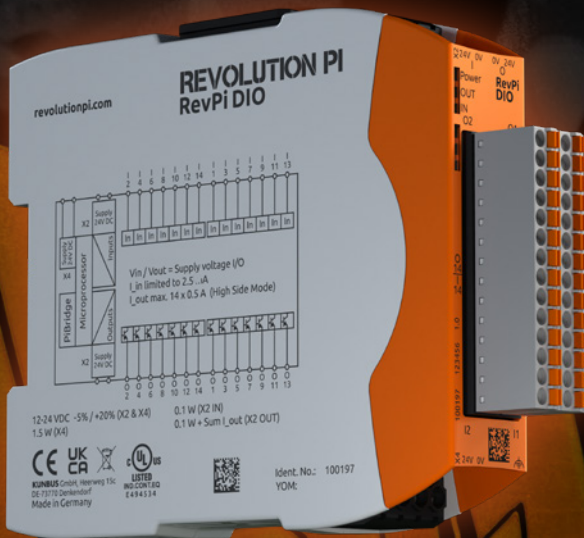
\* (acc. to EN61131-2 & IEC 61000-6-2)

More details  
and specs:



# RevPi DIO / DI / DO

Digital IO expansion modules



## Device

RevPi DIO

RevPi DI

RevPi DO

## Function

Digital IO module

Digital Input module

Digital Output module

## SKU

100197

100195

100196

# INTERFACES

# KEY SPECS

<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Max. power consumption</b>	1.5 Watt (X4/power supply)
<b>Size (H x W x D)</b>	96 x 22.5 x 110.5 mm
<b>Operating temperature</b>	-40 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>Connectors</b>	2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm <sup>2</sup> )
<b>Input current limitation</b>	2.4 mA (at 24 V power supply)
<b>Maximum current per output</b>	500 mA (high-side mode), 100 mA (push-pull mode)
<b>Surge/Burst tests*</b>	Passed
<b>CE, RoHS</b>	Yes
<b>UL</b>	Yes, UL-File-No. E494534

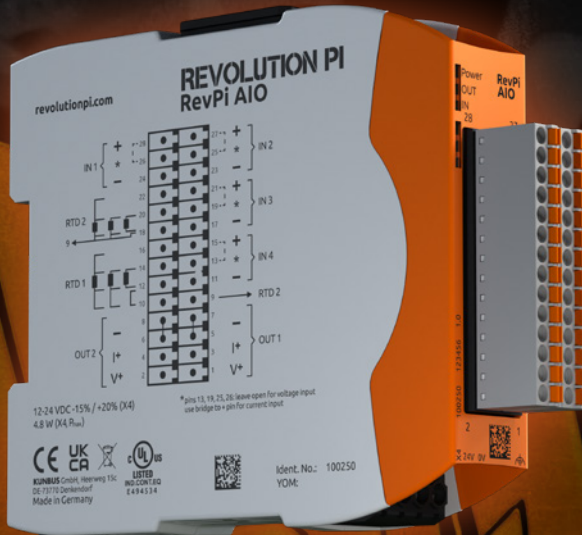
<b>Device</b>	<b>No. of digital Inputs</b>	<b>No. of digital Outputs</b>
RevPi DIO	14	14
RevPi DI	16	0
RevPi DO	0	16

More details  
and specs:



# RevPi AIO

Analog IO expansion module



**Device**

RevPi AIO

**Function**

Analog IO module

**SKU**

100250

# INTERFACES

# KEY SPECS

<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Size (H x W x D)</b>	96 x 22.5 x 110.5 mm
<b>Operating temperature</b>	-30 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>Connectors</b>	2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm <sup>2</sup> )
<b>Voltage measuring range</b>	±10 V   ±5 V   0 ... 10 V   0 ... 5 V
<b>Current measuring range</b>	0 ... 20 mA   0 ... 24 mA   4 ... 20 mA   ±25 mA
<b>Temperature measuring range</b>	-200 ... +850 °C
<b>Voltage output range</b>	±10 V   ±11 V   ±5 V   ±5.5 V   0 ... 10 V   0 ... 11 V   0 ... 5 V   0 ... 5.5 V
<b>Current output range</b>	0 ... 20 mA   0 ... 24 mA   4 ... 20 mA
<b>CE, RoHS</b>	Yes
<b>UL</b>	Yes, UL-File-No. E494534

<b>Interface</b>	<b>Quantity</b>
Input channels	6
for voltage	max. 4
for current	max. 4
for RTD (PT100/PT1000)	2
Output channels	2
for voltage	max. 2
for current	max. 2

More details  
and specs:



# RevPi MIO

Analog & Digital IO expansion module



## Device

RevPi MIO

## Function

Analog & Digital IO module

## SKU

100323

# INTERFACES

# KEY SPECS

<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Max. power consumption (system)</b>	10 W
<b>Size (H x W x D)</b>	96 x 22.5 x 110.5 mm
<b>Operating temperature</b>	-20 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>Connectors</b>	2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm <sup>2</sup> )
<b>Analog IO voltage range</b>	0 ... 10 V DC
<b>Analog IO modes</b>	Analog input, analog output, logic level input, logic level output
<b>Digital IO modes</b>	Digital input, digital output, PWM input, PWM output, pulse input, pulse output, encoder input
<b>CE, RoHS</b>	Yes
<b>UL</b>	Yes, UL-File-No. E494534

<b>Analog IO</b>	<b>Quantity</b>
Analog Input	8
Analog Output	8

<b>Digital IO</b>	<b>Quantity</b>
Digital Input/Output	4

configurable via software either as digital inputs or digital outputs

More details  
and specs:



# RevPi RO

Relay output expansion module



**Device**

RevPi RO

**Function**

Relay output module

**SKU**

100386

# INTERFACES

# KEY SPECS

<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Max. power consumption (system)</b>	2.5 W
<b>Size (H x W x D)</b>	96 x 22.5 x 126 mm (incl. connectors)
<b>Operating temperature</b>	-20 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	85 %, non-condensing
<b>Protection class</b>	IP20
<b>Relay type</b>	NO (normally open)
<b>Resistive load</b>	5 A at 250 V AC / 5 A at 30 V DC
<b>Inductive load (<math>\cos \phi = 0.4</math>, <math>L/R = 7</math> ms)</b>	2 A at 250 V AC / 2 A at 30 V DC
<b>CE, RoHS</b>	Yes

<b>No. of Outputs</b>	4
<b>Connectors</b>	4 x 2-pin socket connectors with spring clamp contacts (0.08 - 1.5 mm <sup>2</sup> )

More details  
and specs:



# RevPi Gates

Fieldbus gateways expansion modules



Device	Protocol	SKU
RevPi Gate PROFINET IRT	PROFINET IRT Device	100074
RevPi Gate EtherCAT	EtherCAT Slave	100073
RevPi Gate EtherNet/IP	EtherNet/IP Adapter	100066
RevPi Gate PROFIBUS	PROFIBUS Slave	100069

# KEY SPECS

Power supply	24 V DC (10.8 ... 28.8 V DC)
Size (H x W x D)	96 x 22.5 x 110.5 mm
Operating temperature	0 °C ... +60 °C
Storage temperature	-25 °C ... +70 °C
Humidity	93 %, non-condensing
Protection class	IP20
CE, RoHS	Yes
UL	Yes, UL-File-No. E494534



EtherNet/IP

EtherCAT



Like the IO expansion modules, the gateways are connected to the base module via the overhead PiBridge connector. Depending on the base module, up to two gateway modules can be connected per system (one gateway per PiBridge).

**Please note, that these gateways are not suitable for the RevPi Connect 4, RevPi Connect SE, and RevPi Core SE series.**

More details  
and specs:



# RevPi Con

Gateway expansion modules, exclusively for RevPi Connect S/SE



## Device

RevPi Con MBus

RevPi Con MBus<sup>VHP</sup>

RevPi Con CAN

## Protocol

Wireless M-Bus 868 MHz

Wireless M-Bus 169 MHz

CAN bus

## SKU

100281

100282

100286

# KEY SPECS

Power supply	Power supply via ConBridge
Size (H x W x D)	96 x 22.5 x 110.5 mm
Operating temperature	-20 °C ... +60 °C
Storage temperature	-40 °C ... +70 °C
Humidity	93 %, non-condensing
Protection class	IP20
CE, RoHS	Yes

Besides the PiBridge, the RevPi Connect S/SE modules have a so-called ConBridge connector. This interface makes it possible to connect special expansion modules to the right side of the base module, called RevPi Con modules.

In addition to data transfer, the ConBridge also supplies power to these modules, unlike the usual expansion modules that are connected via the PiBridge. Like all other expansion modules for Revolution Pi, the RevPi Con expansion modules are housed in a 22.5 mm wide DIN rail housing.

**Please note, that the RevPi Con expansion modules are not suitable for RevPi Connect 4.**

More details  
and specs:



# RevPi Flat S

powered by Raspberry Pi Compute Module 4S

The RevPi Flat S is a non-modular device which can be due to its size spacesavingly installed in sub-distribution cabinets.



**Device**

RevPi Flat S

**SKU**

100371

More details about  
RevPi Flat S:



# INTERFACES

# KEY SPECS

<b>Processor</b>	Broadcom BCM2711, quad-core ARM Cortex-A72
<b>Clock rate</b>	1.5 GHz
<b>RAM</b>	1 GB LPDDR4
<b>eMMC flash memory</b>	32 GB
<b>Power supply</b>	24 V DC (10.8 ... 28.8 V DC)
<b>Size (H x W x D)</b>	90 x 106 x 70 mm
<b>Operating temperature</b>	-25 °C ... +55 °C
<b>Storage temperature</b>	-40 °C ... +85 °C
<b>Humidity</b>	93 %, non-condensing
<b>Protection class</b>	IP20
<b>EMC interference emission</b>	according to EN 61000-6-4
<b>EMC immunity</b>	according to EN 61000-6-2
<b>CE, RoHS</b>	Yes

<b>Interfaces</b>	<b>Quantity</b>
RJ45 Ethernet ports (10/100 Mbit/s)	4*
USB 2.0 sockets	2
RS485 (spring-loaded terminal)	1
RS485 (RJ12 socket)	1
Digital Output (potential free)	1
Analog Output (0-10 V DC)	1
Analog Input (0-10 V DC or 0 ... 20 mA)	1
WLAN (RP-SMA socket)	1

\* two or four separate MAC addresses for LAN0/switch or LAN0 ... LAN3;  
LAN0: 1 x Ethernet; LAN1: 3 x Ethernet switched or single (DSA)



# KUNBUS

## the company behind Revolution Pi

Prior to the development of Revolution Pi, KUNBUS, founded in 2008, was initially at home in the field of industrial communication by developing and offering communication solutions for automation, process, manufacturing, and drive technology. Our

deep knowledge of the industrial communication branch not only serves as a foundation for our past successes but also plays an instrumental role in the ongoing development and improvement of Revolution Pi.

## Revolution Pi – Made in Germany

We are particularly proud of the fact that our devices are not only engineered by us, but also produced – in accordance with ISO 9001 – in our own production facilities in Germany. This enables us to meet and verify the high quality standards that our customers and we ourselves demand. Regular quality controls, which ensure complete traceability of batches and 100 % end-of-line tests, play an important role.



WELL , WHAT AM I?  
IIOT GATEWAY,  
DIN-RAIL IPC,  
EDGE DEVICE OR  
SMALL CONTROL  
UNIT?



IT IS  
YOUR  
CALL!



revolutionpi.com

**REVOLUTION PI**  
a KUNBUS brand

Errors excepted and possible alterations without prior notice. Pictures may vary.

A25W