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

Modbus

OPC UA

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.

Successful across industries

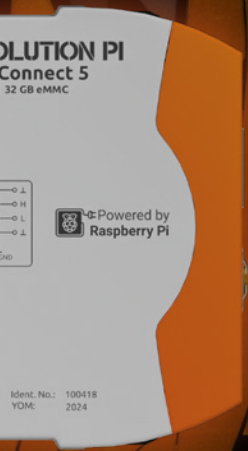
Revolution Pi combines the capabilities of an Industrial PC, Soft PLC, Industrial IoT gateway, edge device, and HMI into a single solution. This versatility makes Revolution Pi the ideal platform for digital transformation across industries and applications:

SOFTWARE DEVELOPMENT & CLOUD SOLUTIONS

supports your choice of tech stack and integrates with all major cloud platforms – with industrial-grade reliability.

ENERGY & ENVIRONMENT

connects and manages your entire energy infrastructure: from solar panels and battery storage to heat pumps and charging stations.

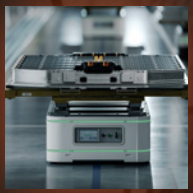


MECHANICAL & PLANT ENGINEERING

combines precise control, monitoring, and visualization for smart manufacturing – in both new and existing machines.

INFRASTRUCTURE

ensures reliable processes and secure data transmission in decentralized facilities – from water treatment to grid management.



LOGISTICS

coordinates your logistics processes, making them smart and future-ready: from warehouse management to automated guided vehicles (AGVs).

Discover our industry solutions & success stories

Tailor-made solutions

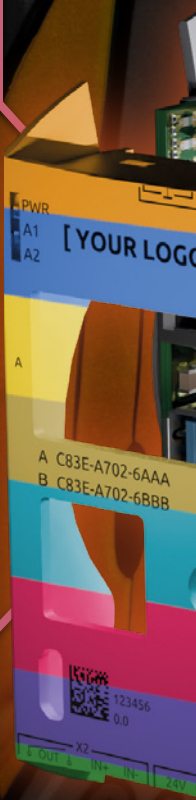
For all those who prefer a more individual and exclusive approach, we have the perfect solution:

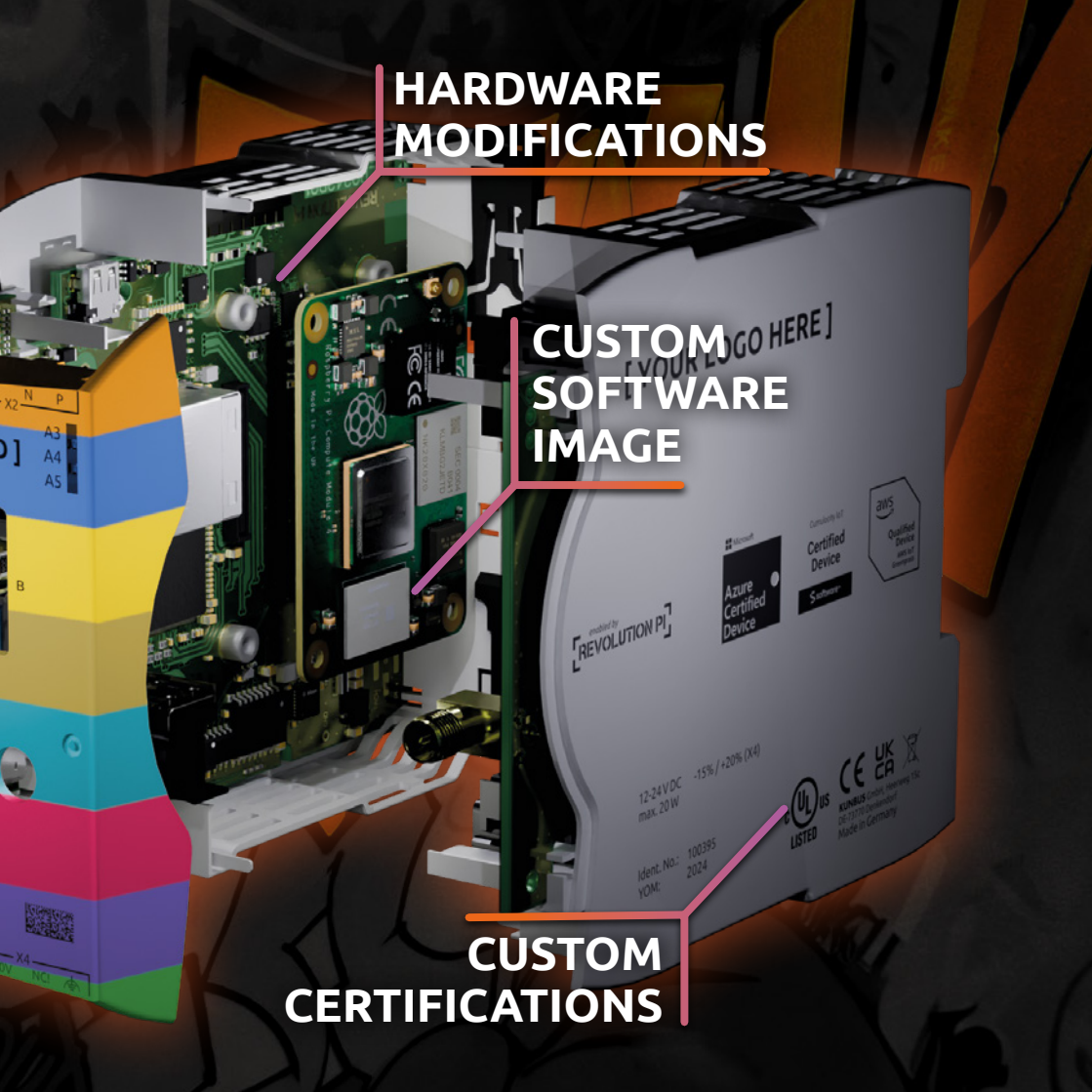
If you decide to use Revolution Pi as the standard hardware for your next project, we will manufacture our Revolution Pi modules according to your wishes. From subtle customizations like adding your company logo to comprehensive hardware and software modifications - we offer tailored solutions for your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

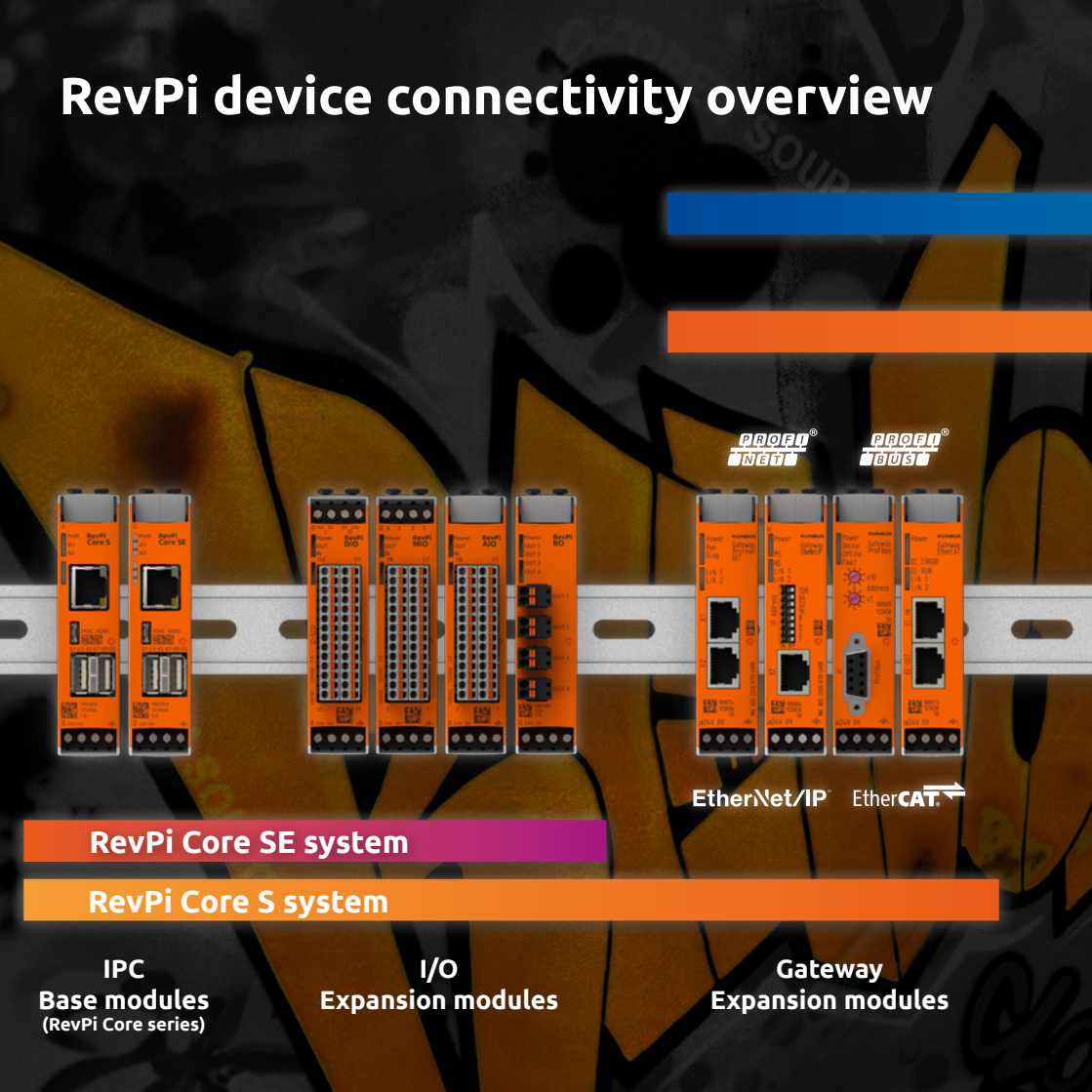
CUSTOM LASER ENGRAVING

CUSTOM COLOR




HARDWARE MODIFICATIONS
CUSTOM SOFTWARE IMAGE
CUSTOM CERTIFICATIONS
[YOUR LOGO HERE]
Azure Certified Device
Certified Device
Qualified Device
REVOLUTION PI
12-24 V DC
max. 20 W
-15% / +20% (X4)
Ident. No.: 100395
YOM: 2024
Made in Germany

RevPi device connectivity overview



RevPi Connect 5 system

RevPi Connect 4 system

RevPi Connect S system

RevPi Connect SE system

I/O
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

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

INTERFACES

Interfaces	**Quantity**
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

KEY SPECS

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

INTERFACES

Interfaces	**Quantity**
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

KEY SPECS

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

INTERFACES

Interfaces	**Quantity**
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

KEY SPECS

Processor	Broadcom BCM2711, quad-core ARM Cortex-A72
Clock rate	1.5 GHz
RAM	1 GB LPDDR4
eMMC flash memory	8 GB / 16 GB / 32 GB
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	-25 °C … +55 °C
Storage temperature	-40 °C … +85 °C
Humidity	93 %, non-condensing
Protection class	IP20
ESD protection	4 kV/8 kV
EMI/ Surge/Burst tests*	Passed
CE, RoHS	Yes
UL	Yes, UL-File-No. E494534

INTERFACES

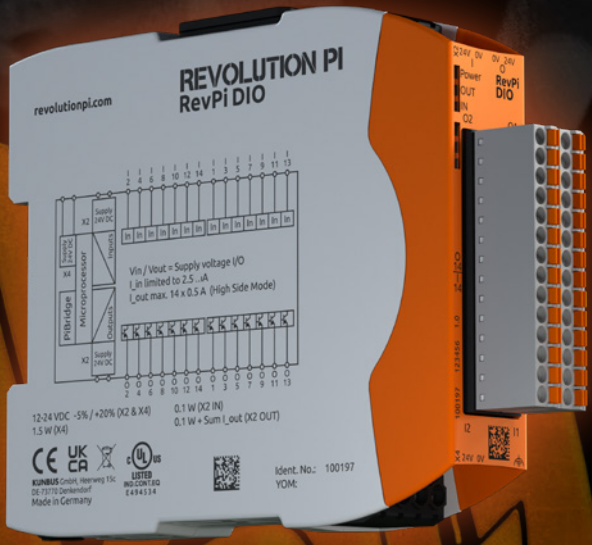
Interfaces	**Quantity**
RJ45 Ethernet port (10/100 Mbit/s)	1
USB 2.0 sockets	2
Micro HDMI socket (HDMI 2.0 (4K))	1
Micro USB 2.0 socket (for firmware uploads only)	1
PiBridge (for RevPi expansion modules)	2

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

More details and specs:

RevPi DIO / DI / DO

Digital IO expansion modules



Device	Function	SKU
RevPi DIO	Digital IO module	100197
RevPi DI	Digital Input module	100195
RevPi DO	Digital Output module	100196

KEY SPECS

Power supply	24 V DC (10.8 ... 28.8 V DC)
Max. power consumption	1.5 Watt (X4/power supply)
Size (H x W x D)	96 x 22.5 x 110.5 mm
Operating temperature	-40 °C … +55 °C
Storage temperature	-40 °C … +85 °C
Humidity	93 %, non-condensing
Protection class	IP20
Connectors	2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm²)
Input current limitation	2.4 mA (at 24 V power supply)
Maximum current per output	500 mA (high-side mode), 100 mA (push-pull mode)
Surge/Burst tests*	Passed
CE, RoHS	Yes
UL	Yes, UL-File-No. E494534

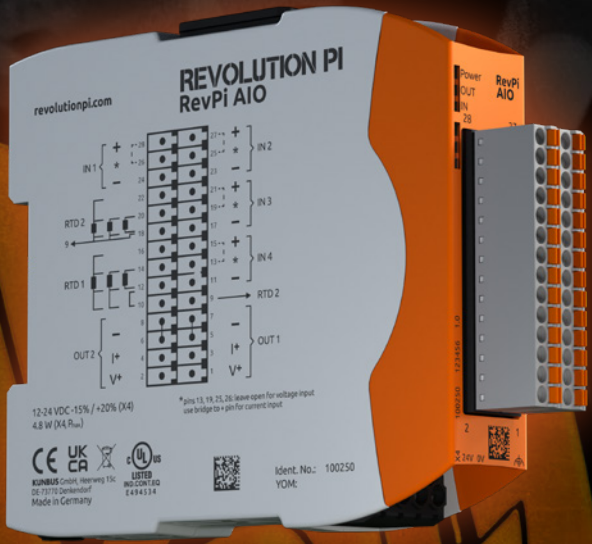
INTERFACES

Device	No. of digital Inputs	No. of digital Outputs
RevPi DIO	14	14
RevPi DI	16	0
RevPi DO	0	16

More details and specs:

RevPi AIO

Analog IO expansion module



Device	Function	SKU
RevPi AIO	Analog IO module	100250

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	-30 °C … +55 °C
Storage temperature	-40 °C … +85 °C
Humidity	93 %, non-condensing
Protection class	IP20
Connectors	2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm²)
Voltage measuring range	±10 V | ±5 V | 0 … 10 V | 0 … 5 V
Current measuring range	0 … 20 mA | 0 … 24 mA | 4 … 20 mA | ±25 mA
Temperature measuring range	-200 … +850 °C
Voltage output range	±10 V | ±11 V | ±5 V | ±5.5 V | 0 … 10 V | 0 … 11 V | 0 … 5 V | 0 … 5.5 V
Current output range	0 … 20 mA | 0 … 24 mA | 4 … 20 mA
CE, RoHS	Yes
UL	Yes, UL-File-No. E494534

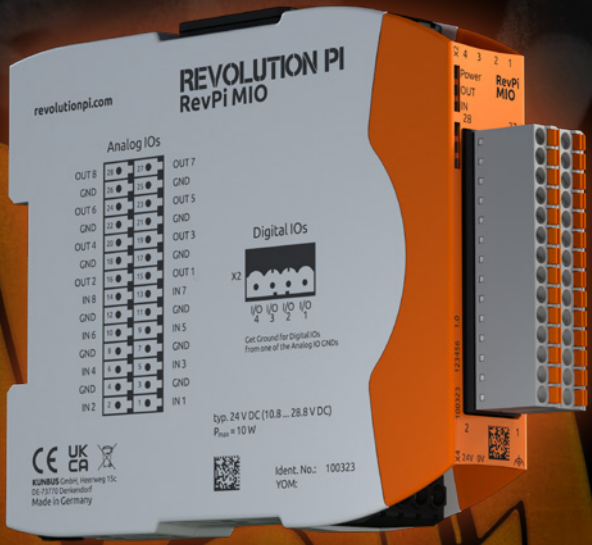
INTERFACES

Interface	Quantity
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	Function	SKU
RevPi MIO	Analog & Digital IO module	100323

KEY SPECS

Power supply	24 V DC (10.8 ... 28.8 V DC)
Max. power consumption (system)	10 W
Size (H x W x D)	96 x 22.5 x 110.5 mm
Operating temperature	-20 °C … +55 °C
Storage temperature	-40 °C … +85 °C
Humidity	93 %, non-condensing
Protection class	IP20
Connectors	2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm²)
Analog IO voltage range	0 … 10 V DC
Analog IO modes	Analog input, analog output, logic level input, logic level output
Digital IO modes	Digital input, digital output, PWM input, PWM output, pulse input, pulse output, encoder input
CE, RoHS	Yes
UL	Yes, UL-File-No. E494534

INTERFACES

Analog IO	**Quantity**
Analog Input	8
Analog Output	8

Digital IO	**Quantity**
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	Function	SKU
RevPi RO	Relay output module	100386

KEY SPECS

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

INTERFACES

No. of Outputs	4
Connectors	4 x 2-pin socket connectors with spring clamp contacts (0.08 - 1.5 mm²)

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

PROFINET® EtherNet/IP™ EtherCAT® PROFIBUS®

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	Protocol	SKU
RevPi Con MBus	Wireless M-Bus 868 MHz	100281
RevPi Con MBus VHP	Wireless M-Bus 169 MHz	100282
RevPi Con CAN	CAN bus	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	SKU
RevPi Flat S	100371

More details about RevPi Flat S:

KEY SPECS

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

INTERFACES

Interfaces	**Quantity**
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)

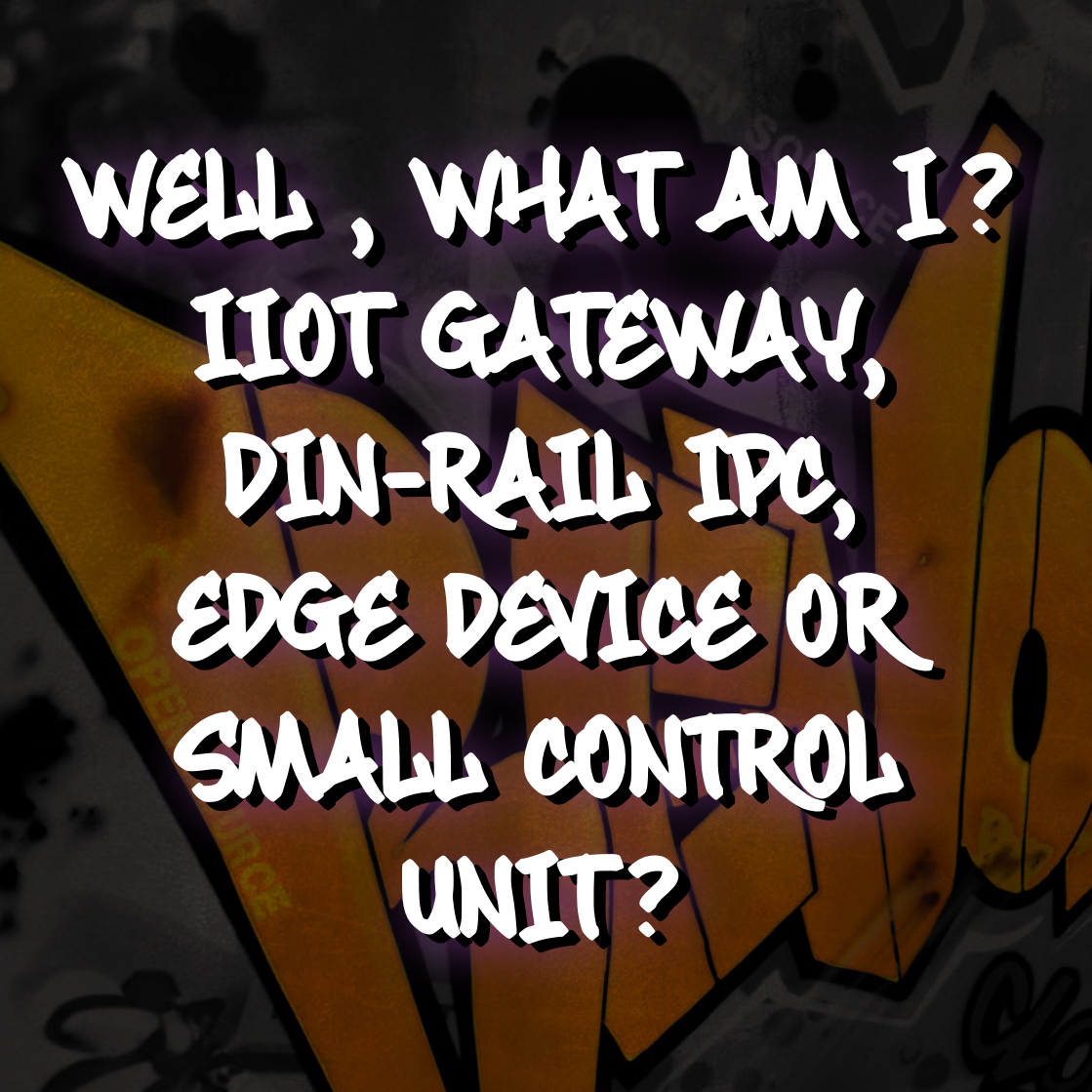
KUNBUS

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!

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a KUNBUS brand

EN.25.W2