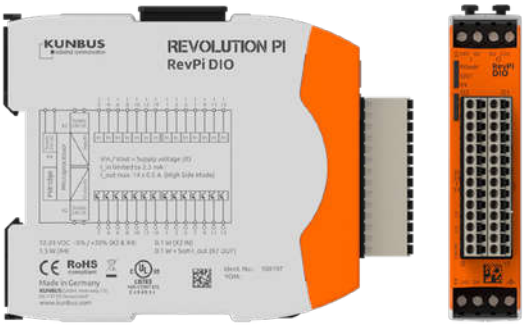
REVOLUTION PI

RevPi DIO

Article No.: 100197



Technical Data

Housing dimensions (H x W x D)	96 x 22.5 x 110.5 mm
Housing type	DIN rail housing (for DIN rail version EN 50022)
Housing material	Polycarbonate
Weight	approx. 100 g / 130 g (incl. connectors)
IP Code	IP20
Power supply	12-24 V DC -5 % / +20 % (X2 and X4) [1]
Max. power consumption	1.5 Watt (X4/power supply)
Operating temperature	-40 °C....+55 °C
Storage temperature	-40 °C....+85 °C
Humidity (at 40 °C)	93 % (non-condensing)
Connectors	2 x 4-pole screw-type terminal for power supply 2 x 14-pin socket connectors with spring clamp contacts (0.2 - 1.5 mm²) for IOs, pitch 3.5 mm (Wieland Item No. 27.630.4453.0)
Optical indicator	3 status LEDs (bi-color)
Number of digital input channels	14
Input type	Galvanically isolated from the system bus and from the outputs, individually configurable as direct digital input, counter rising edge, counter falling edge or together with neighboured input as encoder [2]
Input current limitation	2.4 mA (at 24 V power supply)
Input thresholds	At 24 V compatible according to EN 61131-2 to Type I and III sensors
Digital debounce circuit	Collectively adjustable for all inputs: off, 25 µs, 750 µs or 3 ms
Maximum frequency resolution of the counter inputs	2 kHz (corresponding to 500 Hz encoder sequence)
Alarm	For auxiliary voltages below 19 V and below 9 V, overtemperature
Input protection	According to EN 61131-2 (IEC 61000-4-4, -5, -6, and -2) against burst, RF injection, external voltages from -3 V to +36 V

[1] Three independent supply voltage sources must be available for galvanic isolation of the inputs and outputs.

[2] For each DIO module, a maximum of 6 inputs can be defined as 6 counters or 12 inputs as 6 decoders. Counters and decoders are stored as 32-bit integers in the process image. Reset of counters/encoders via ioctl calls from the kernel driver piControl.

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Number of digital output channels	14
Output type	Galvanically isolated from the system bus and the inputs, individually configurable as direct digital output with high-side or push-pull drivers as well as a PWM output [3]
Maximum current per output	500 mA (high-side mode), 100 mA (push-pull mode)
PWM frequency	Collectively selectable for all outputs: 40 Hz, 80 Hz, 160 Hz, 200 Hz, 400 Hz [3]
Alarm	Thermal shutdown or short circuit of outputs (individually for each output)
Dual watchdog function	In the event of communication failure with the controller (after 50 ms or 500 ms [4]) or internal communication with the CPU (after 9 ms, hardware-controlled), the outputs are reseted to zero
Output protection	According to EN 61131-2 (IEC 61000-4-4, -5, -6, and -2) against short circuit, overload, burst, ESD
Compatible modules for system expansion	All RevPi base module, expansion modules and RevPi Gate modules (connected via overhead PiBridge connector)
Protection of the power supply inputs	Reverse polarity protected, transient overvoltages
EMC interference emission	according to EN 61000-6-4
EMC immunity	according to EN 61000-6-2
RoHS conformity	Yes
CE conformity	Yes
UL certification	Yes, UL-File-No. E494534

[3] The PWM pulse width is stored as a value from 0 to 100 in the process image in 1 byte. The maximum resolution of the conversion of this value in % by the module depends on the PWM frequency: 40 Hz / 1%, 80 Hz / 2%, 160 Hz / 4%, 200 Hz / 5%, 400 Hz / 10%.

[4] 50 ms for all RevPi DIO with software version 1.4 or older.
500 ms for all RevPi DIO with software version 1.5 or younger.