CloudRail.Box

Article No.: 100298

Technical Data

Housing dimensions (H x W x D)	96 x 45 x 110.5 mm
Housing type	DIN rail housing (for DIN rail version EN 50022)
Housing material	Polycarbonate
Weight	approx. 197 g / 224 g (incl. connectors)
IP Code	IP20
Power supply	12-24 V DC -15%-/ +20%
Max. power consumption	20 Watt (incl. 1 A total USB output current) [1]
Operating temperature	-40 °C....+55 °C [2]
Storage temperature	-40 °C....+85 °C
Humidity (at 40°C)	93% (non-condensing)
Interfaces	2 x USB A (Total current draw from both sockets max. 1 A, deactivated) [3] 2 x RJ45 10/100 Ethernet (using separate MAC addresses) 1 x RS485 screw-type terminal (not galvanically isolated, deactivated) 1 x Micro-USB (solely for image transfer to eMMC) 1 x Micro HDMI (deactivated) 1 x PiBridge system bus (deactivated) 1 x ConBridge system bus (deactivated)
Connectors	1 x 4-pole screw-type terminal for relay contact and signal input 1 x 8-pole spring clamp connector for power supply
Processor	Broadcom BCM2837 quad-core ARM Cortex A53 (ARMv8)
Clock rate	1.2 GHz [2]
Processor cooling	Passive with heat sink
RAM	1 GByte
Flash memory	4 GByte

[1] The average power consumption without USB load varies greatly and depends on the use of the interfaces, the GPU and the CPU. It is usually well below 4 watts without HDMI.

[2] There should be no cutbacks of power at ambient temperatures below 20°C. At 25°C ambient temperature 3 cores may run with full clock speed while with 4 cores the clock frequency is lowered from 1.2 to 1.1 GHz after 10 to 20 minutes of full stress. At 40°C ambient temperature 4 cores under full stress will still work with 1 GHz while stressing just 1 core results in no down clocking. At 50°C ambient temperature 4 fully stressed cores are running at average 0.7 GHz, having short down clockings to 0.6 GHz and short up clockings to 0.9 GHz. 1 core under full stress does result in no down clocking. At 65°C ambient temperature and either 4 or 1 core under full stress results in an "emergency mode" with just 0.4 GHz, after longer periods even 0.3 GHz.

[3] 1 A USB output current (total of both USB outputs) is only available for input voltages >11 V. The bridging time of at least 10 ms required by EN 61131-2 is only guaranteed with a 20.4 to 28.8 V power supply. With a 12 V power supply, this time is significantly reduced, especially when power is drawn from the USB ports.

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Number of digital input channels	1
Input type	24 V control voltage
Input thresholds	approx. 3.0V (0 -> 1) / 2.3V (1 -> 0)
Input protection	against overvoltage, negative voltages
Number of digital output channels	1
Output type	Relay contact, approval up to 30 V switching voltage
Maximum current load of the contact	2A @ 30V DC (resistive load!)
Protection of the power supply inputs	Reverse polarity protected, overvoltage protection
ESD protection	4 kV / 8 kV (according to EN61131-2 and IEC 61000-6-2)
EMI tests	Passed (according to EN61131-2 and IEC 61000-6-2)
Surge/Burst tests	Passed (according to EN61131-2 and IEC 61000-6-2)
Buffer time RTC	min. 24 h
Optical indicator	6 status LEDs (bi-color)
RoHS conformity	Yes
CE conformity	Yes