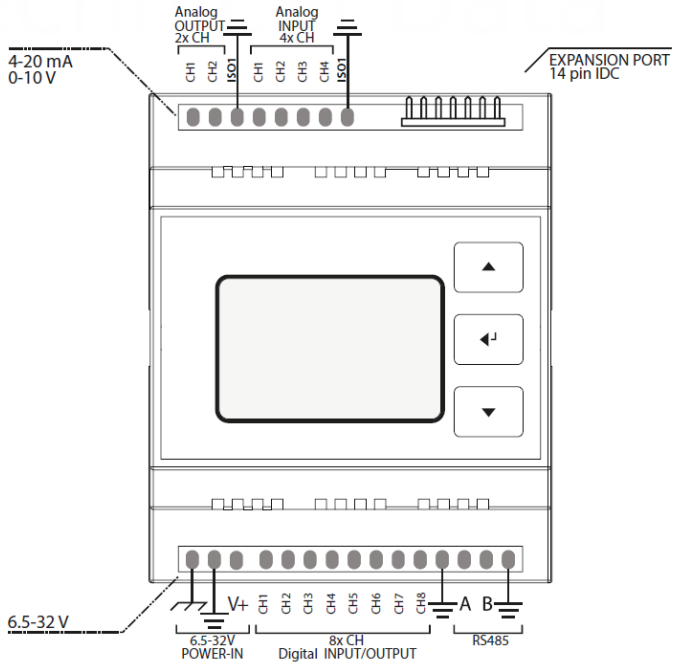
Technical Data



- ATSAMD21G18 Microcontroller

- 128x64 px LCD Screen with Backlight
- Membrane 3 Button Panel
- Ethernet Module (mandatory)
  M2M 3G/LTE Router optionally available
- Standard Input Voltage: 12V / 24V DC
  permissible range: 8–28V DC
  12V, 24V PSU optionally available
- DIN-Rail mountable
- 4 Analog Input Channels
- 2 Analog Output Channels
- Levels: 4–20mA / 0–10V
- Fully isolated from MCU and Digital Side (1kV isolation)
- 8 Digital I/O Channels
- Digital Input Voltage Range: 0–28V
  input channels internally driven LOW
- Digital Output Vortage Range: 8–28V (tied to VIN)
- Digital I/O Levels: LOW ≤ 3V, HIGH ≥ 11V
  I/O Logic is active high
- Max. Output Current per Pin: 2.6A
  (short circuit, over-current, over-temp. protected)
- Max. Total Output Current: 6.5A (omni block fused)
- Fully isolated from MCU and Analog Side (1kV isolation)
- Isolated Half Duplex RS-485 Transceiver

Important Notes

To properly operate the Raindancer Beacon, it has to be connected to an adequate power supply via the POWER-IN field (12/24V DC is recommended). The USB port on the front casing is not suitable.
When a single power supply is used to power both, Raindancer Beacon and peripherals, the GND lines should be tied together.

> Power down all systems (Raindancer Beacon, sensors/actuators) before connecting to the Raindancer Beacon via USB, internal components may irreparably take damage otherwise!

Analog Field Section

- Analog Pins can be individually configured, according to the requirements of the devices to be connected: 0-10V or 4-20mA. By default, all Analog Pins are preconfigured to 4-20mA. An alternate configurations can be set using the web-portal.

Pin Assignment and Value Ranges when Used as Pump Control Unit:

- The value ranges can be individually adjusted using the web-portal.

A OUT	Assignment	Default Range
CH 1	Target / Min. Pressure	0 – 16 bar
CH 2	Manually Set Pressure	0 – 16 bar

A IN	Assignment	Default Range
CH 1	Current Pressure	0 – 16 bar
CH 2	Current Power	0 – 100 kW
CH 3	Current Flow	0 – 100 m^3/h
CH 4	Current Speed	0 – 3.600 rpm

Digital Field Section

- Output can be configured as a permanent or pulsed signal (125ms – 256s).
  Signal configuration can be adjusted using the web-portal.
- Pulse counter (using level raise/fall, max. ca. 60Hz), e.g. for water meters on Digital Channel 8.

- Please note that floating/pulsing input voltages may be transmitted as highly fluctuating input signals, triggering associated actions (e.g. error notification).

Default Pin Assignment and Value Ranges When Used as Pump Control Unit:

D CH	Assignment	Signal	Interpret.
1 (OUT)	Control ON	Pulse, 125ms	ON
2 (OUT)	Control OFF	Pulse, 125ms	OFF
3 (IN)	Confirmation	Permanent	ON/ OFF
4 (IN)	Error Code 1	Permanent	ON/ OFF
5 (IN)	Error Code 2	Permanent	ON/ OFF
6 (IN)	Error Code 3	Permanent	ON/ OFF
7 (OUT)	Reset Error	Pulse, 2s	
8 (IN)	Counter	Pulse	

Error Codes

- By combining the three main Error Codes using Digital Channels 4 – 6, four additional states, up to a total of 7, can be transmitted.
- • The textual interpretations of the Error Codes can be customized individually using the web-portal.

Default Error Codes Used by Pump Control/Monitoring:

Code 1 (CH 4)	Code 2 (CH 5)	Code 3 (CH 6)	Interpretation
0	**0**	**0**	no malfunction
1	**0**	**0**	Malfunction - Pressure, generic.
0	**1**	**0**	Malfunction - Motor Temperature
0	**0**	**1**	Malfunction - Frequency Inverter / Pump
1	**1**	**0**	Malfunction - Low Pressure

Code 1 (CH 4)	Code 2 (CH 5)	Code 3 (CH 6)	Interpretation
1	**0**	**1**	Malfunction - Excess Pressure
0	**1**	**1**	Restart after Interruption of Power Supply
1	**1**	**1**	Remote Control Disabled

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