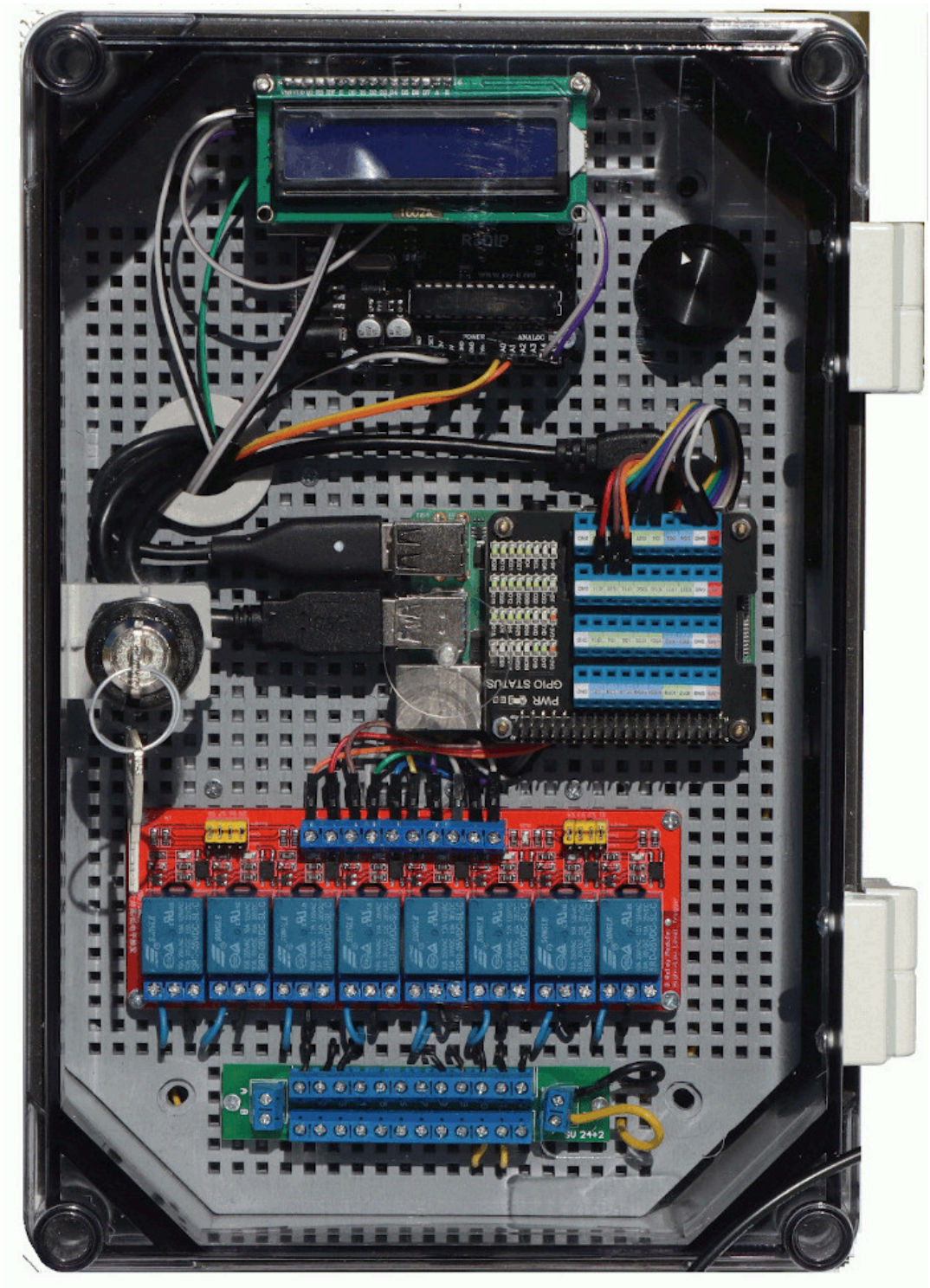
Hydroponics Control System 5-3-1


GPIO STATUS
PWR

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Control system for hydroponic systems. Ready for operation.
Selling price 2'835,78 €
Sales price without tax 2'835,78 €
Tax amount

Ask a question about this product
ManufacturerBorgmann Aquaponik Hydroponik

Description
Autonomous system for controlling a hydroponic system
With this system you can control your hydroponic system completely and autonomously.
The system has five dosing pumps. Since most commercially available nutrient solutions are divided into three parts in order to optimally combine the corresponding

nutrients depending on the growth phase (growth, flowering, fruit), this system provides three dosing pumps for this purpose. In order to automate the more complex real-time analysis for autonomous operation, pH and EC sensors are also included in the scope of delivery. These control the concentration of the nutrient solutions as well as the pH value. The concentration of the nutrients is measured via the EC value and adjusted precisely using the three dosing pumps for the nutrient solution. Controlling the pH value allows an optimal pH level to be set using two additional dosing pumps, which add either lye or acid to the nutrient solution in doses.
Depending on the planting and the required nutrient concentrations, the dosage is preconfigured accordingly. You can obtain information about this directly from us or find it online from our database. Note: Calcium and sulfates or phosphates cannot be mixed together as they can form precipitates that clog the trickling filters of the irrigation system.

The system has a 3-stage signal tower (green, yellow, red) with warning light and buzzer. These show the operating status of the system.

You can specify the threshold values ??for a visual and acoustic alarm (of all eight sensors) as desired.
During regular operation, the measured values ??of the nutrients are shown on an LCD display. Monitor, keyboard and mouse are not required - but can of course remain connected. These are only necessary to configure the system or to display statistical data on nutrient consumption and other measured values ??graphically. They are also needed to control the pumps by hand. The basic operating data is displayed on an LCD display (see images below) which can also be used to calibrate analogue class sensors.

Control system, hardware consisting of:

- RaspBerry Pi 4 B, 4 GB with Linux: Ubuntu operating system
- HDD 1TB
- Arduino UNO R3
- LCD display
- Micro-HDMI to HDMI adapter for standard screens
- 20.4 watt power supply for Raspberry 4 (5.1 volt output)
- 7 connection cables, each at least 2 meters (any length on request)

Sensors nutrient solution

- EC sensor 0.0 to 9.9
- pH sensor 0 to 14 pH
- Liquid temperature sensor -5 to 120 degrees Celsius

Environmental sensors (in greenhouse housing)

- Air pressure
- Air temperature
- humidity
- dew point
- Vapor pressure deficit

Control / actuators:

- 3 dosing pumps for nutrient solutions (nutrient solution 1, 2 and 3)
- 2 dosing pumps for acid and alkali for pH control
- 7 connection cables for pumps and sensors, each at least 2 meters (other lengths on request)

Setting up the facility

- The system is finished and assembled ready for operation.
- The software is installed and preconfigured.
- A one-hour hotline for advice on configuration is included.

Expansion option
Using the existing environmental sensors, an additional module can be used to control the ventilation of the greenhouse as well as the artificial lighting if you are not using a greenhouse. The system is already prepared for this.
Please contact us.

Screenshot example control center
The configuration can be designed as desired; multiple “dashboards” and multi-user operation are possible.

Units in box: 1