Visionary Farms

Aqua

Controller for automating hydroponic systems

Can be used in

Vertical farming
Indoor farming
Small-scale at-home farm
Hydroponic greenhouse
Hydroponic cannabis cultivation
Retail

Mobile app connected
Part of the Visionary Farms ecosystem
Growing recipes available via subscription

Daily/monthly feeding regime scheduling

Alerts in case of emergency

Full farm analytics available

Aqua was designed specifically for indoor cultivation and vertical farming. Most irrigation and nutrient controllers available today are designed for greenhouses, so they feature functions not needed for indoor cultivation. Unlike them, Aqua has everything necessary for indoor cultivation, while it does not measure parameters that apply only to outdoor or greenhouse soil-based cultivation. Nothing more, nothing less.

Aqua can set and maintain mixing and dosing parameters of nutrient solution preparation and delivery to advanced hydroponic systems. You can set your desired parameters in the mobile app or use the automated cultivation recipes available with the Visionary Farms cloud subscription.

Using Aqua with the Cloud subscription allows you to control and monitor your farm remotely. Alternatively, you can use the free local mode to control and monitor the conditions on your farm by connecting to the same Wi-Fi network.

Measures

EC level

pH level

pressure

nutrient solution volume

nutrient solution temperature

Controls

Nutrient solution preparation

EC working range

pH working range

nutrient solution temperature

nutrient solution volume

fertilizers and pH adjustor

ejector valves

fresh water valve

Irrigation regime

duration of irrigation

pause between instances
of irrigation

main pump

feeding contours valves

drainage valve

Devices

additional pump
(if needed)

any other device
(if needed)

Working regimes

Aqua automatically switches
the solution preparation and delivery
system between different modes,
depending on the manually set irrigation
parameters (free mode) or the
automatically set parameters specified
by the cultivation recipe (if the
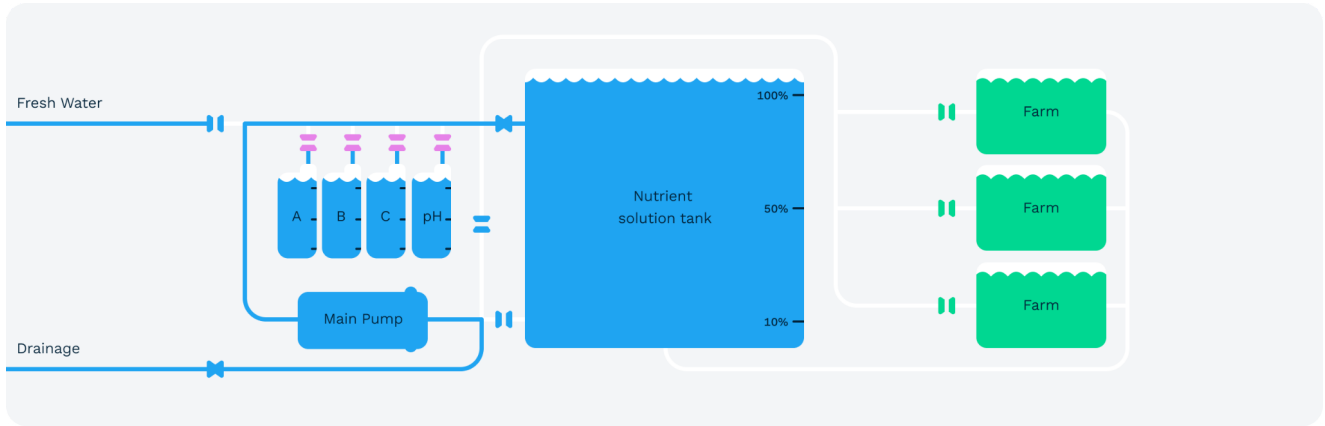subscription is activated).

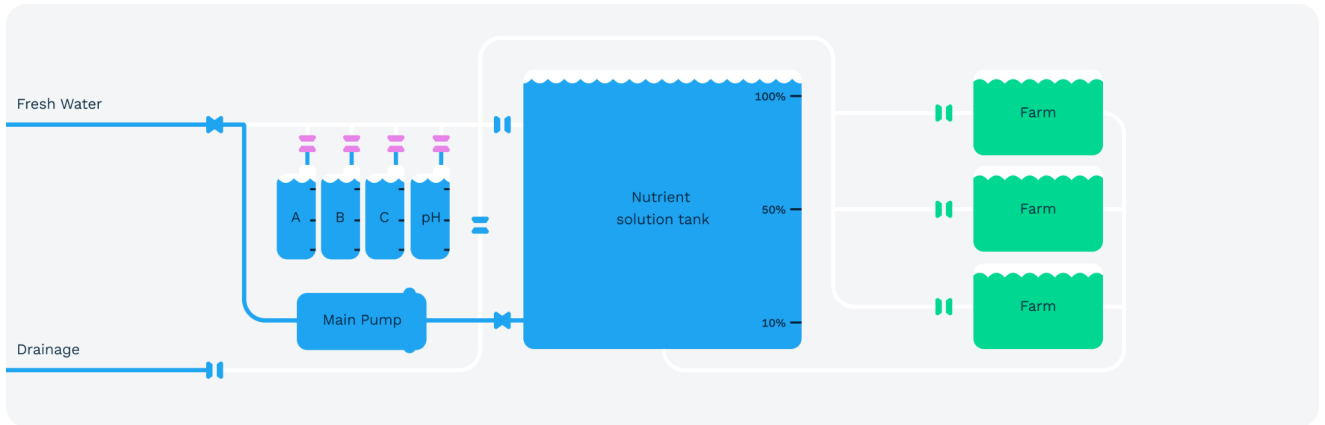Valve Control
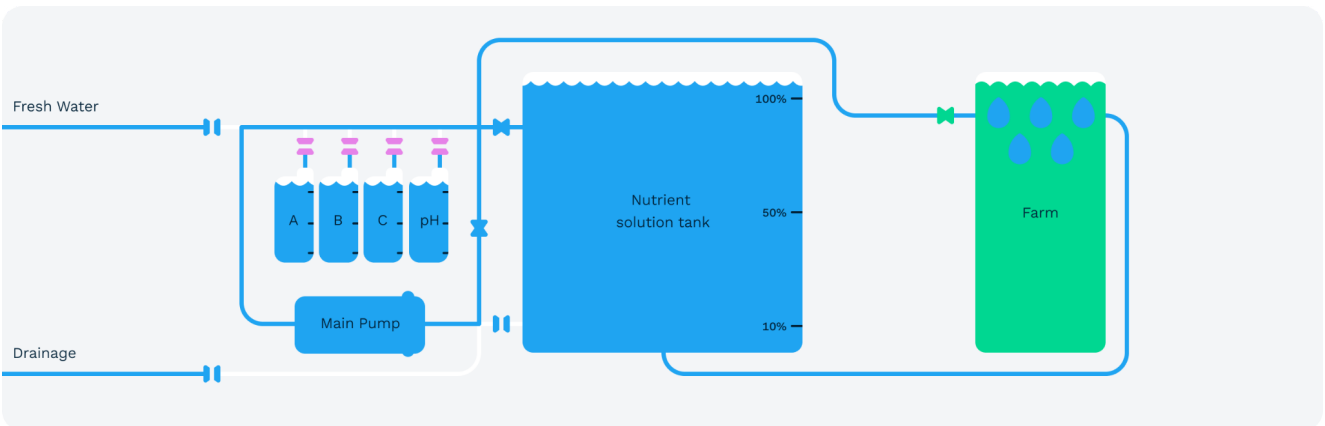
Injectors Control

Sensors: pH/EC/water level

Mixing
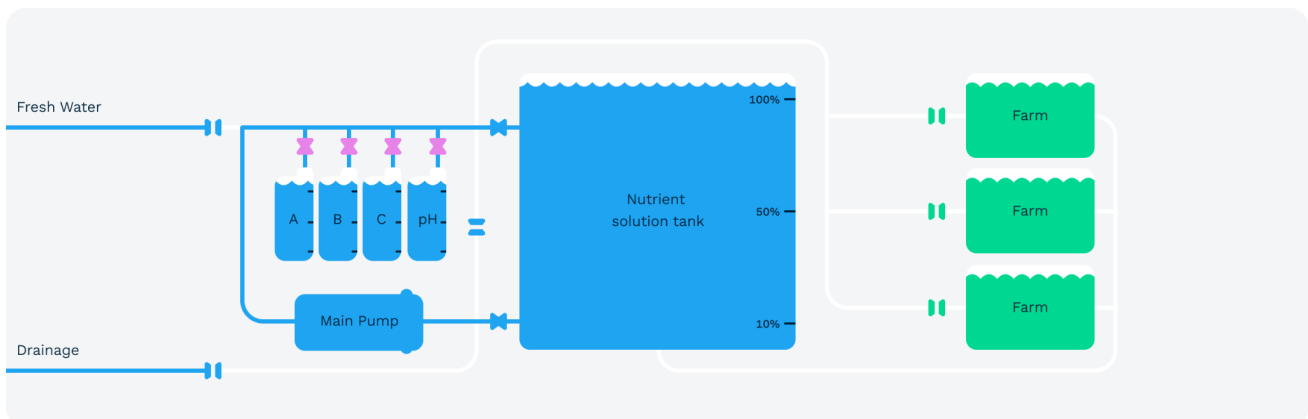
Feeding
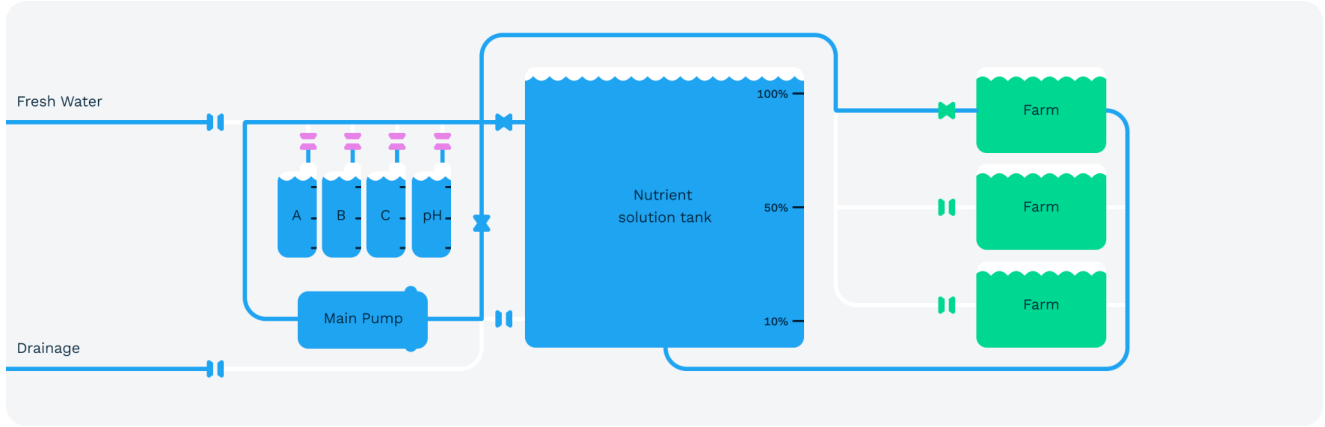
Draining

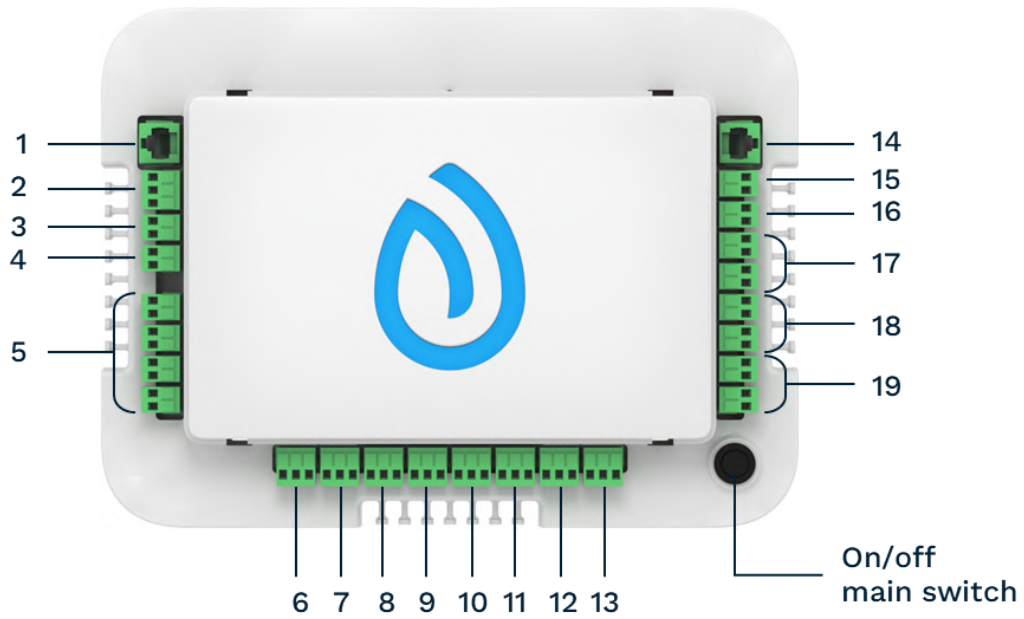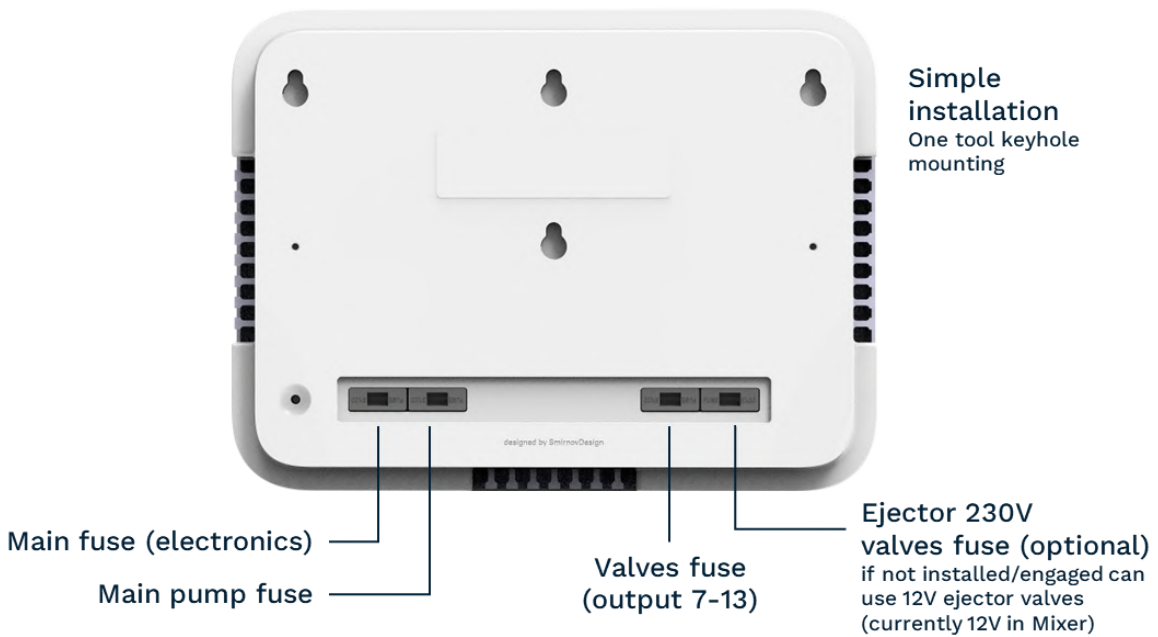# Pumping water

Drip irrigation

Technical data

1	Tank fill level sensors RJ45	10	Outline valve 1
2	Reserve input	11	Output valve 2
3	Water meter	12	Output valve 3
4	Emergency button - in case of issues, controller goes to idle mode	13	Power supply
5	Ejector valves or peristaltic pumps outputs	14	Lan input RJ45
6	Main pump (has a separate fuse max power consumption 450W)	15	EC sensor
7	Fresh water valve	16	Temperature sensor
8	Mixing valve	17	pH primary and sec sensor
9	Drain valve	18	two contactors I2C Bus
		19	RS485 Bus

On/off main switch

Simple installation
One tool keyhole mounting

Main fuse (electronics)

Main pump fuse

Valves fuse (output 7-13)

Ejector 230V valves fuse (optional)
if not installed/engaged can use 12V ejector valves (currently 12V in Mixer)

Connections:

Mains cable and relay lines output:
  Solid core up to 1.5 mm²
  Stranded up to 1.5 mm²

Ethernet (LAN): RJ45 10/100/1000 Mb/s, Cat 5E

Conformity and standards:

EMC emission: EN 61000-6-3, EN 55015
EMC immunity: EN 55024, EN 61547
Safety: EN 61347
Environment: complies with RoHS directive.
Color body: White (RAL 9003)
Material: Polycarbonate (PC)
RS485   EIA-485

Operating and storage conditions:

Ambient temperature: 0 °C to +40 °C
Relative humidity: Max. 100 %,
        noncondensing
Storage temperature: –10 °C to +60 °C

Power supply:

Mains supply 230 V:
  220 V AC – 240 V AC (nominal)
  198 V AC – 264 V AC (absolute)
  45 Hz – 65 Hz

Mains supply 110 V:
  100 V AC – 120 V AC (nominal)
  90 V AC – 140 V AC (absolute)
  45 Hz – 65 Hz

Power factor: > 0.9

Power consumption (without external devices): 25

Circuit protection: 2A fuse for 230V, 5A fuse for 11(

Mechanical data:

Dimensions: 276 mm x 206 mm x 60 mm
Weight: 460 g
Mounting: Screw suspension or DIN rail
IP rating: IP20

Aqua works with
the Visionary Farms ecosystem

Terra
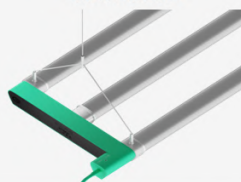The ultimate modular shelving system
for vertical farming

Software
Grow from
your phone

Aqua

Ignis
The linear customisable
light for effective
cultivation

Mixer
Advanced nutrient solution
preparation and delivery
system

Air
Climate and lighting
controller
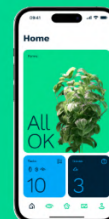
Cloud subscription

Whilst you can set parameters manually without the cloud subscription, using it unlocks Air's full potential and maximises the capabilities of your farm.

Control anytime, anywhere

Control and monitor the conditions on your farm remotely using the Visionary Farms app.

Cultivation recipes for 60+ varieties

Achieve better yields with automatic settings and maintenance based on 7+ years of research.

Access to full analytics

Gain valuable insights into your farm from Air's sensors.

Smart cultivation tips

From our plant science experts personalised to the varieties you are growing.

Operations management functionality

Automatic task scheduling and delegation among farm team members, notifications of any issues.

Full technical support

From our software and hardware engineers and plant science experts.

Projects using Aqua

Restaurant "Parnik"

Parnik is a trendy salad bar. All of the herbs, microgreens and leafy greens used in its dishes are grown directly in-house using Visionary Farms technology.

The project was completed in January 2020 and continues to operate using Visionary Farms hardware and software.

Two leafy greens farms

With the help of Visionary Farms lighting, hardware and consulting services, in 2020, the first city farm in the Udmurtia region was launched, which grows greens all year round.

"The founder of Visionary Farms was the first person to help me understand urban farming, and only thanks to him I was able to build and operate my first vertical farm."

Andrey Golovkin, urban vertical farmer

Rocket, Romaine lettuce, Binex lettuce, Swiss chard + Dunstar lettuce

$97k	228m²	350kg
Revenue in 2022	Total cultivation area	Total monthly harvest

Strawberry greenhouse

This greenhouse, created in 2021, boasts uninterrupted strawberry production for 10 months out of the year.

It was created using Visionary Farms lighting, hardware and software solutions and consulting services.

450m²	4 tonnes	$103k
Total cultivation area	Total monthly harvest	Revenue in 2022