GrowSphere™ MAX

Irrigation Fertigation Controller

Quick Setup Guide

2026

orbia | Precision Agriculture

NETAFIM™ DIGITAL FARMING

Technical Assets

We’re always happy to help!
Get in touch with our Support Team
and we’ll guide you every step of the way.

Thank you for purchasing the GrowSphere™ MAX Controller, an intuitive and simple-to-use device designed to speak the language of growers.

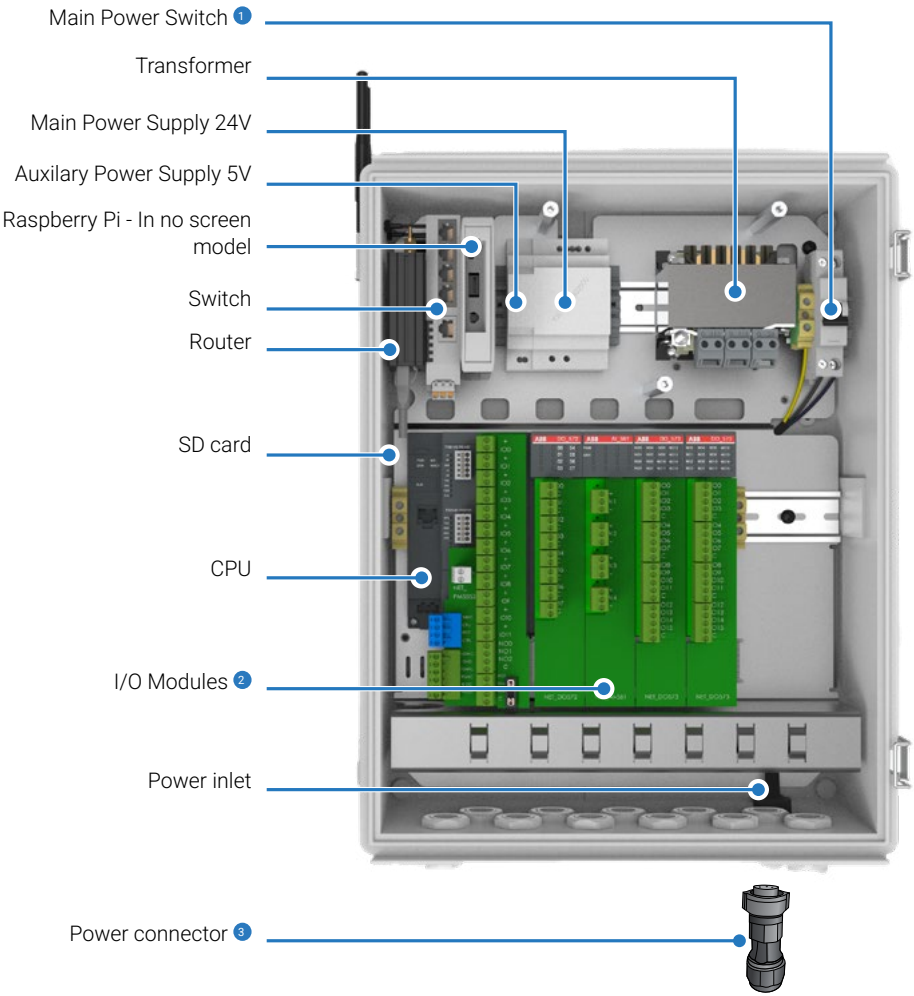
GrowSphere™ MAX regulates water and fertilizer delivery in a precision irrigation system, activating local and remote devices such as pumps, valves, filters, dosing pumps and other hydraulic components. This ensures that crops receive the optimal amount of water and nutrients at all times.

This **Grow**Sphere™ **MAX** quick guide contains basic setup instructions and wiring diagrams for your convenience.

Contents

Internal Design

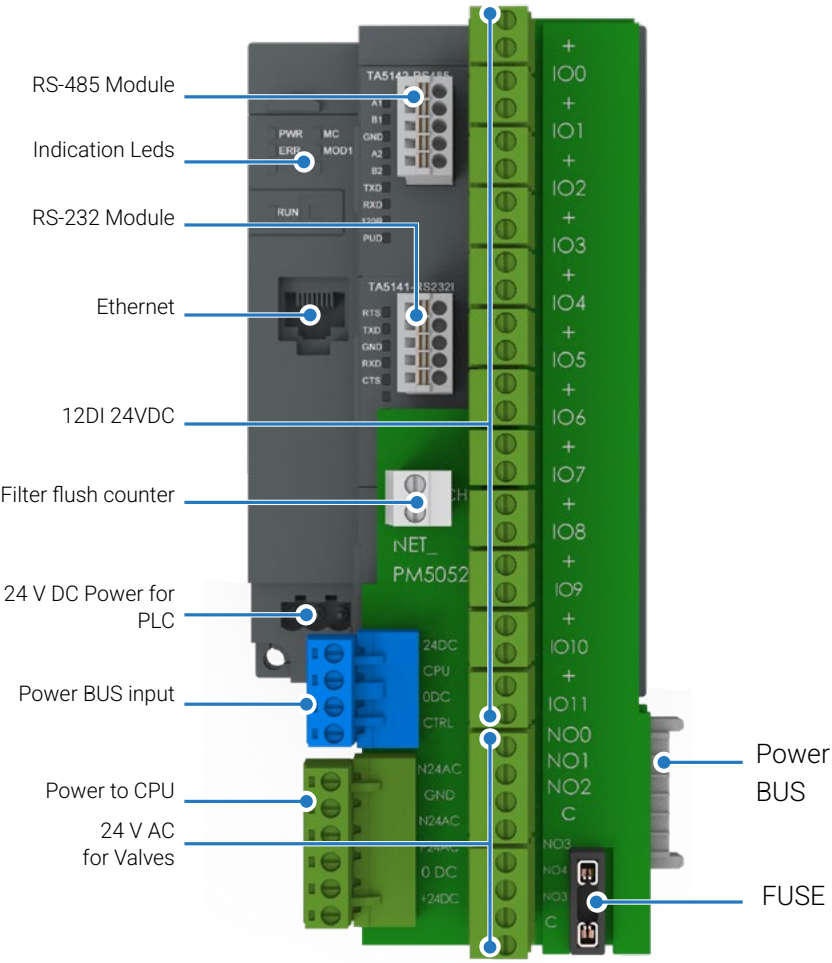
GrowSphere™ MAX - Internal Design



1. Switches the main power on and off
2. Enable connecting the peripheral components
3. You can find the connector in the accessories box

* Subject to product configuration

GrowSphere™ **MAX** - CPU



Adaptor features

- AC protection Fuse
- CPU Remote reset
- Controlled by Modem remotely
- Easy visual Indication
- 24AC LED
- 24DC LED
- CPU Reset

Custom ABB controller

- Memory 80MB

What's in the box

GrowSphere™ **MAX** controller

3 x (colors) gaskets for power cable

1 x BSU feed cable

1 x electricity connector

Wall mount adaptors

Wall mount screws

SIM adaptors and pin

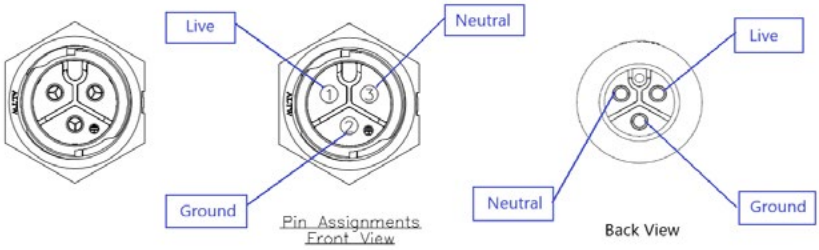
2 x fuses

2 x mobile antenna

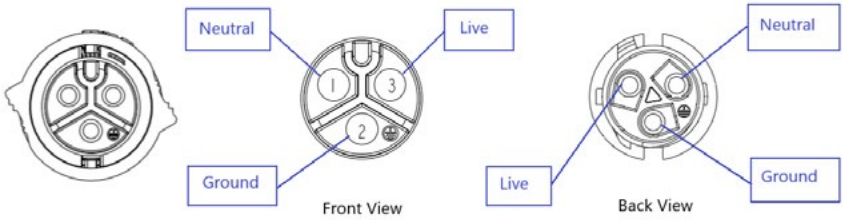
Plastic bands

1 x Touch screen pen

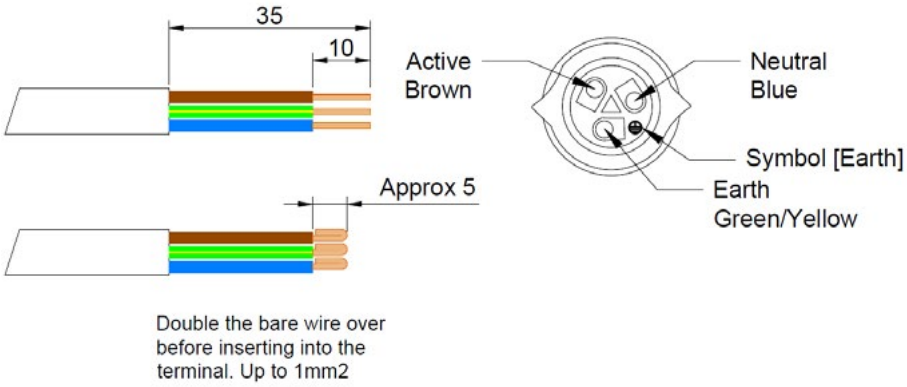
GrowSphere™ MAX Power connector



GrowSphere™ MAX Cable connector



GrowSphere™ MAX Power

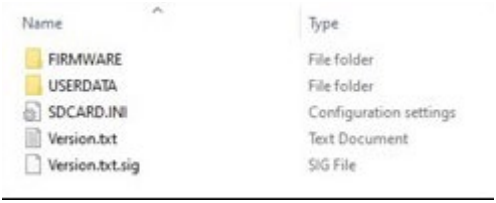


Screw-In Type Assembly Instruction

Firmware upgrade (Manual)

To upgrade the firmware in your GrowSphere™ MAX controller, follow these steps below. Remember to stay up to date with future firmware versions.

1. Turn OFF GS Max, takeout existing SD Card
2. Prepare a clean SD card formatted with FAT32
3. Download required latest version. Unzip it to a folder.
4. Copy only the content of the folder into SD card root.
5. The SD card contents should look like:



6. Insert this SD card into PLC
7. Power ON the PLC.
8. If a new FW is found on the SD card, RUN and ERR LEDs will start blinking in 1 HZ
9. Wait ~5min until only the RUN LED is blinking.
10. Power OFF the PLC .

11. Take out the SD card and insert SD card that was taken out from PLC before upgrade or it may be empty card.
12. Power ON the PLC.
13. The controller will reboot once again automatically, wait the process to complete. When the process complete, the RUN LED should remain constantly on. When the process complete, the RUN LED should remain constantly on.

if the process is successful RUN LED should be constantly on (ERR LED might be red, that is OK , MC LED 'will be ON, if SD Card is inserted in the slot).

Product technical specifications

	Per Main Line	Total
Main Line	1	4
Main Valve	1	4
Sub mainline per mainline	6	24
Main Water Meter	1	4
Pumps	3	12
Filter Station	1	4
External filter (flushing control + indication)	32	128
Dosing Stations	1	4
Dosing Channel (venturies)	8	32*
Valves	160	256
Reservoir per controller	--	1
Well/pumps per reservoir	--	6
DMS	8	32
Central Pump station	For all ML up to 8 pumps	
Electricity meter	--	4 per controller
Cooling valve	32	128
Misting valve	32	128
Cooling/Misting valve	16	64

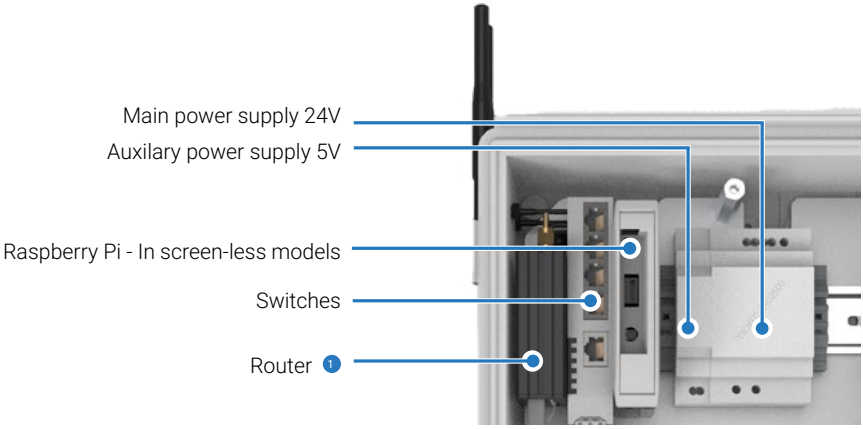
	Per Sub-main Line	Total
Water Meter	1	6
Main valve	1	6
Pressure sensor	1	6

Irrigation programs per controller or mainline*	40
Shifts per program	20
Valves Per Shift	32
Dosing Recipes	10

Local and Remote Control

Local access via LAN

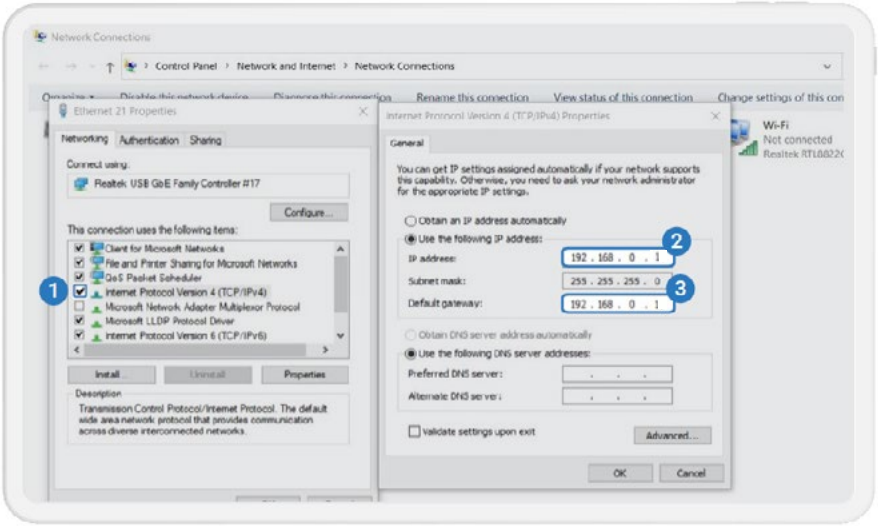
For local access, you can connect to the controller' Wi-Fi by scanning the QR code on the controller or connect via LAN. To access remotely, you can use GrowSphere™Cloud by clicking on the link icon or use Anydesk from any device by entering the username and password provided with the controller.



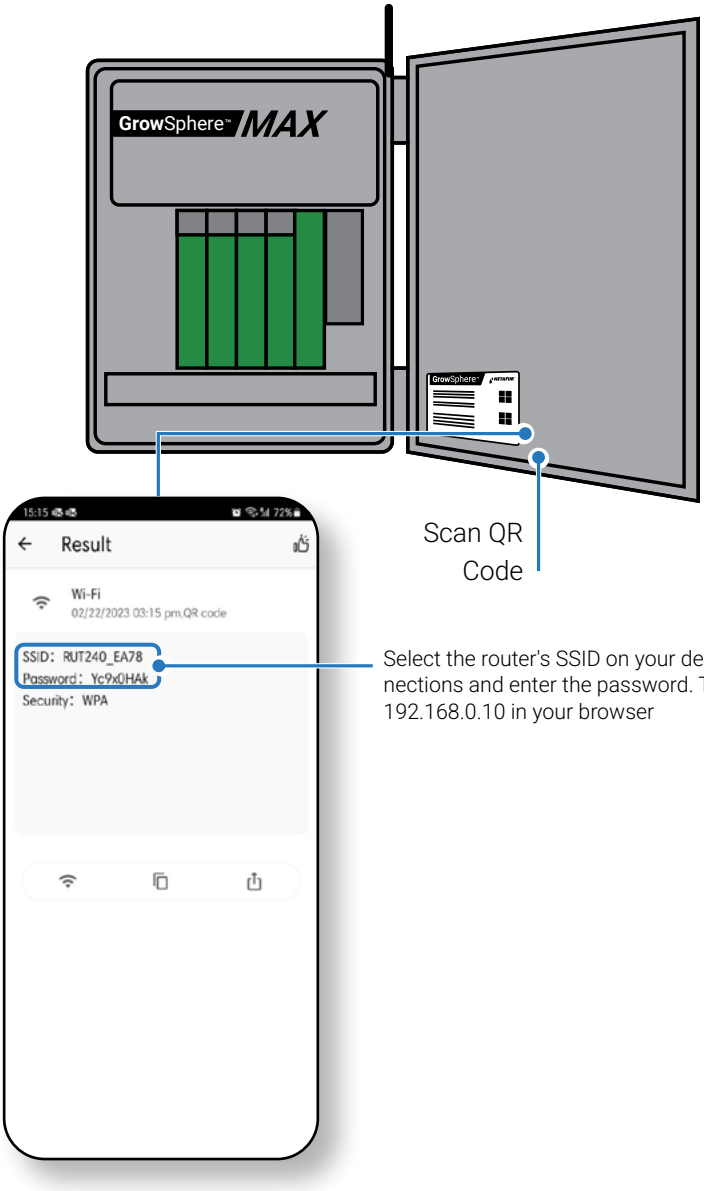
1. Connect a LAN cable to the switch and type the IP address 192.168.0.10 in the URL
2. Create static IP address – In the address range of my system 192.168.0.4
3. Ensure the Default gateway address is: 192.168.0. 10

Navigate to your ethernet port properties and set the TCP/IPv4 option, as demonstrated below

To easily find your Ethernet port, navigate to the Control Panel > Network and Sharing Center > Change adapter settings



Local access via WiFi



Select the router's SSID on your device's wireless connections and enter the password. Then enter the URL: 192.168.0.10 in your browser

- By scanning the QR code on the controller you will get the Wi-Fi address and password for the controller's modem
- By typing 192.168.0.10 in the URL line, you will be able to access to the controller dashboard.

Remote access - Using Anydesk

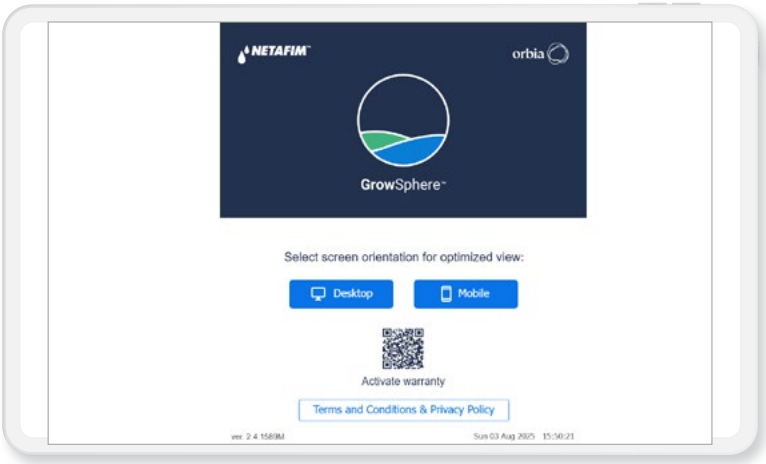
The controller connects to the Internet and can be accessed through the **Grow**Sphere™ Cloud. However, you can also access it through AnyDesk by following these two steps:

To get started, you'll need to install Anydesk on your computer, tablet, or mobile device. Once you have it installed, you can use the Anydesk ID found on the controller's internal door. The password for this account is GrowSphere01.

GrowSphere™ MAX - Basic Settings

Getting started

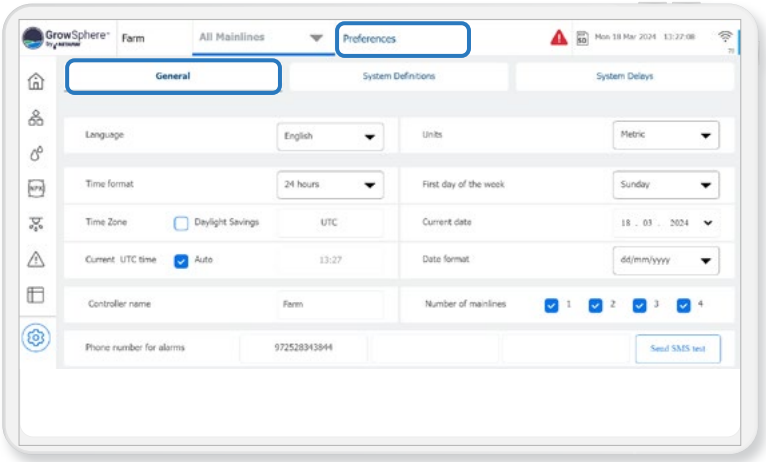
Select the Desktop / Mobile view, in the case of Tablet, you can select Desktop



System preferences

Set your system preferences

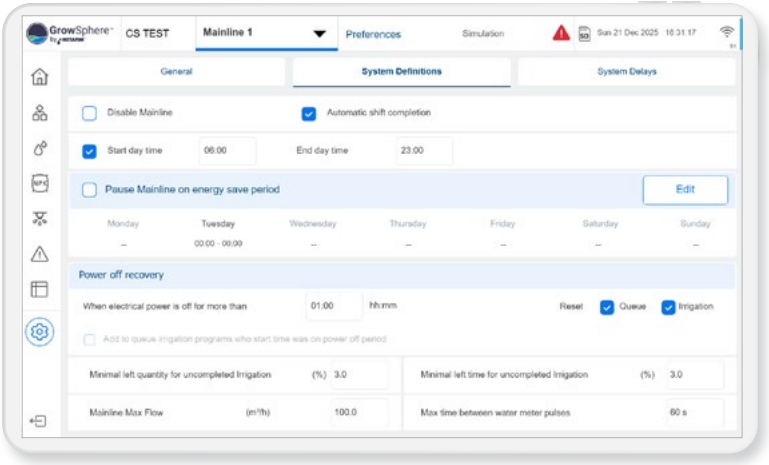
Set your preferences and continue to the next step, your settings will be saved automatically.



Set definitions for operation time and flow

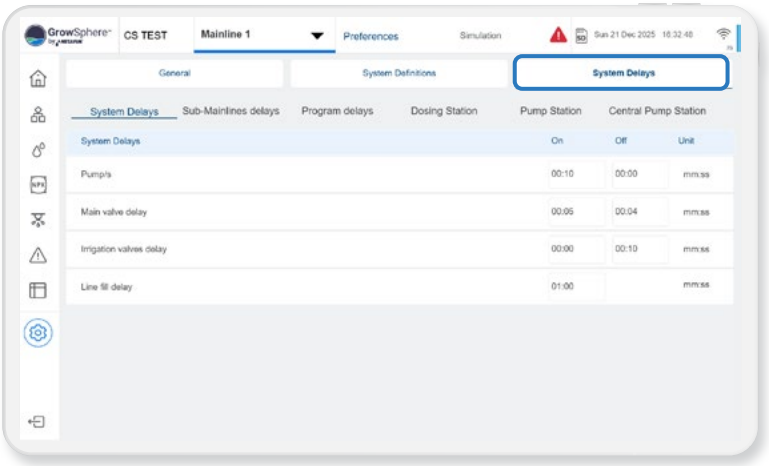
Select the relevant mainline - From this stage, all the settings will be per mainline.

Set the System Definitions



Define system delays

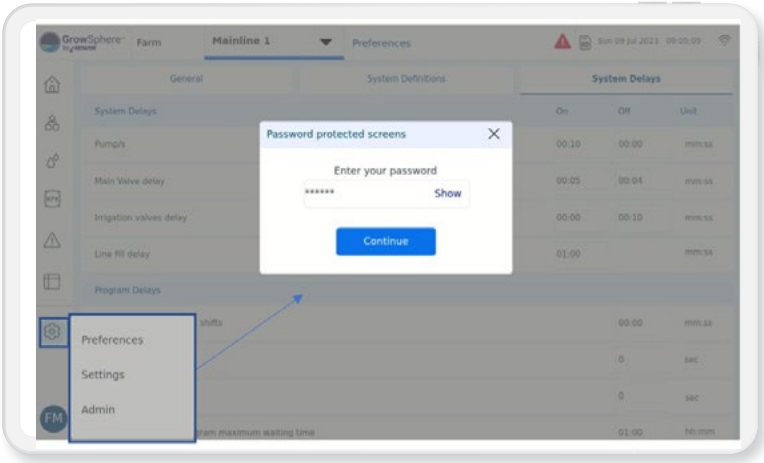
Set the delays for the mainline components



System settings

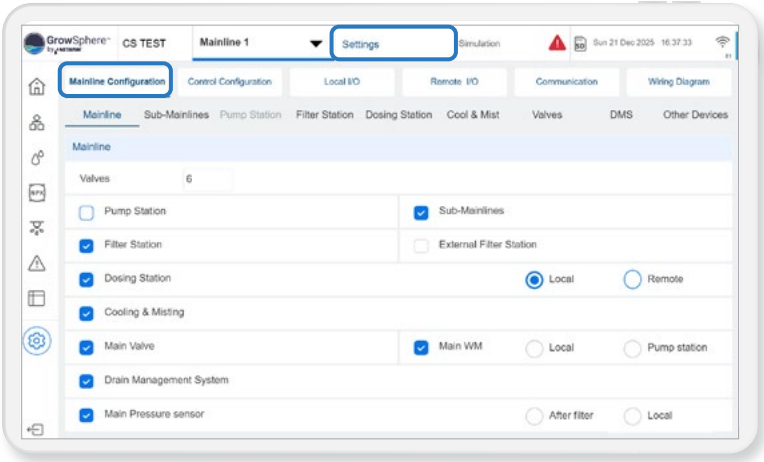
Navigate to settings

Enter the password 287451



Set mainlines configuration

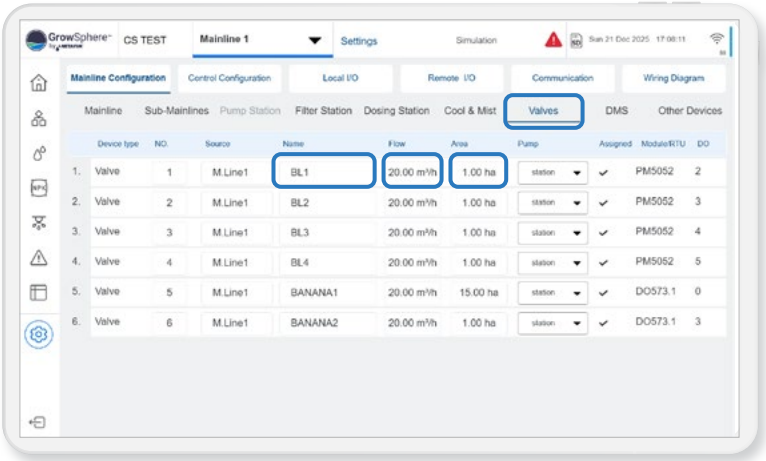
Define the number of valves and the devices that connected to each mainlines



Set valves configurations

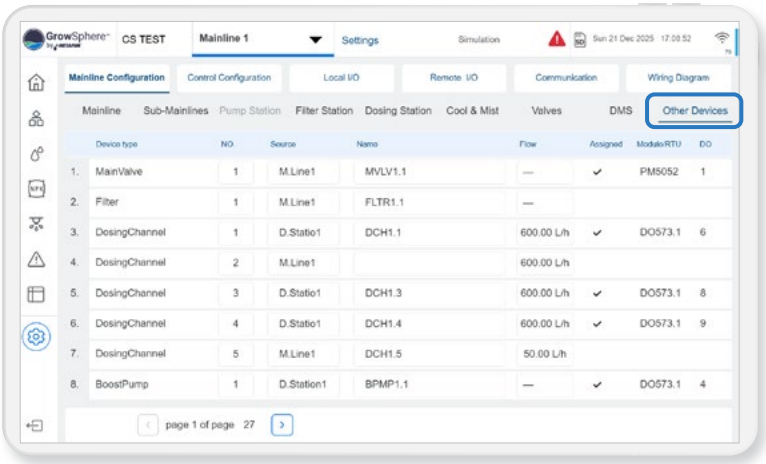
- Set name, flow rate, and irrigated area for each valve

- The Flow and Area are used to manage and monitor the irrigation in the **Grow**Sphere™ cloud



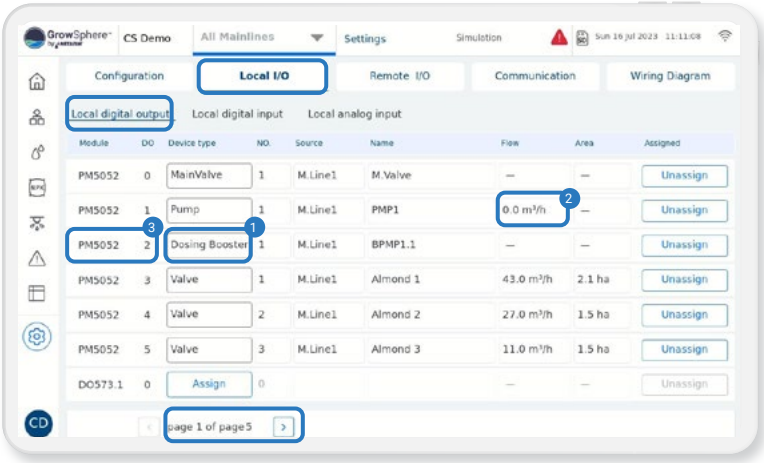
Define other devices configurations

Set the parameters for each device



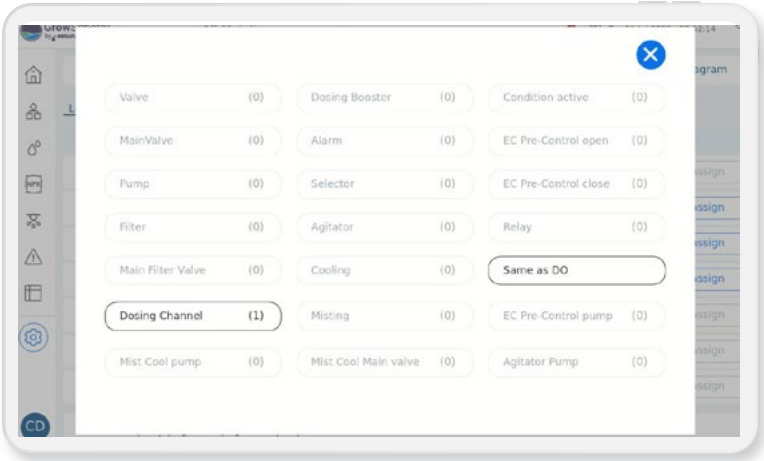
Assign digital outputs to I/O modules

1. Click assign for each row to assign
2. Define the Flow and irrigated area for each valve
3. The I/O module to which the device has been assigned to can be selected



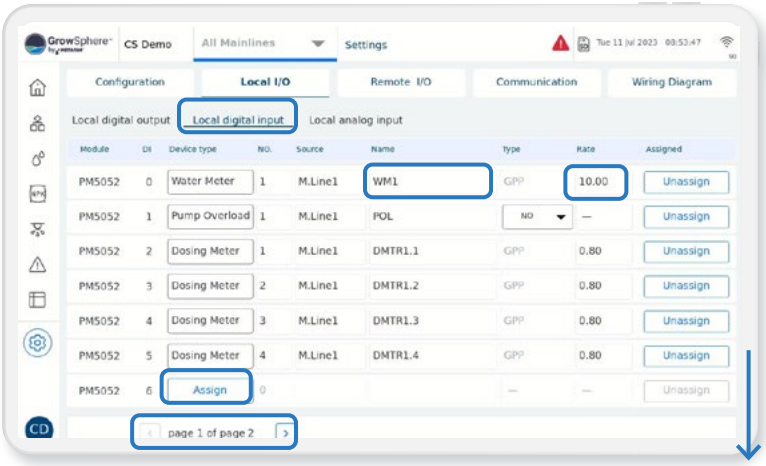
Assign digital outputs to I/O modules

By clicking Assign, the system will indicate how many devices are not yet assigned, and will automatically assign it to the next available port



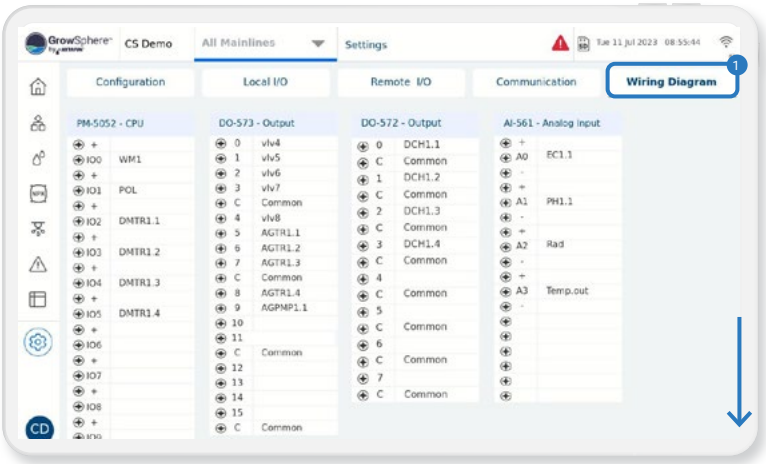
Assign digital inputs to I/O module

- Assign each device to I/O Module and port
- Provide the name, flow rate, and irrigated area for each input.
- You can select the I/O module to which the device has been assigned by navigating between pages 1-5.



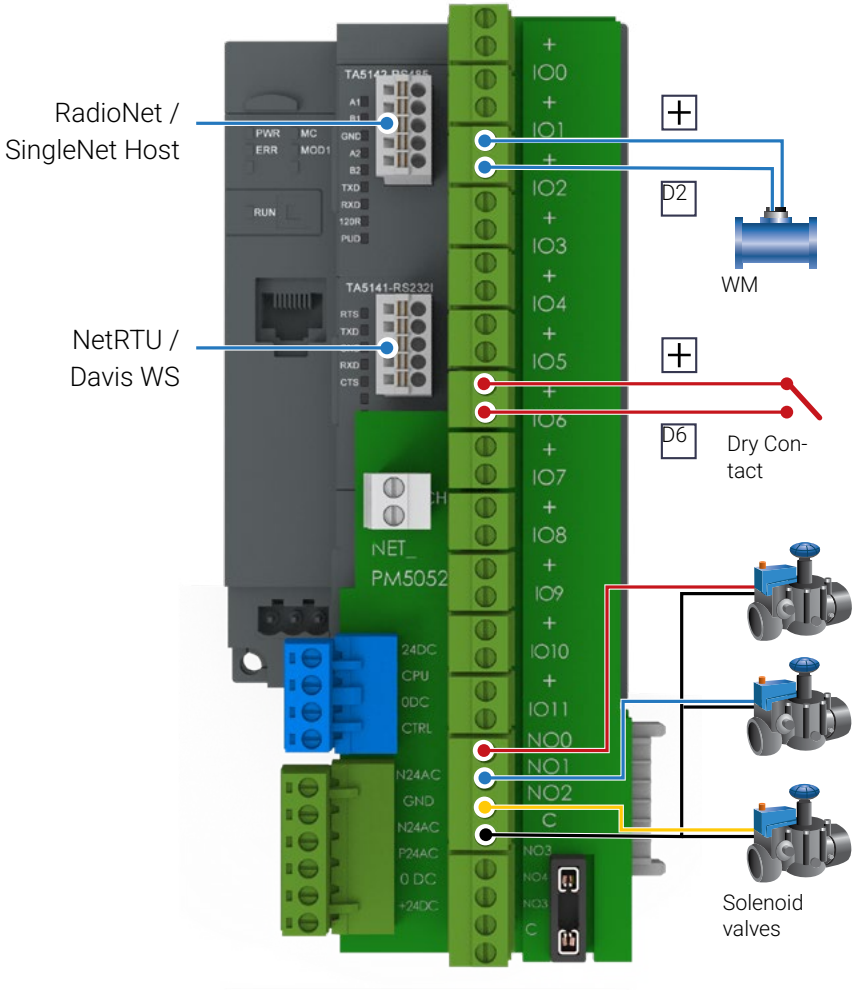
View the wiring diagram

The wiring diagram shows the module and port for each device that has been assigned. You can follow the diagram to properly connect the devices



Wiring Instructions

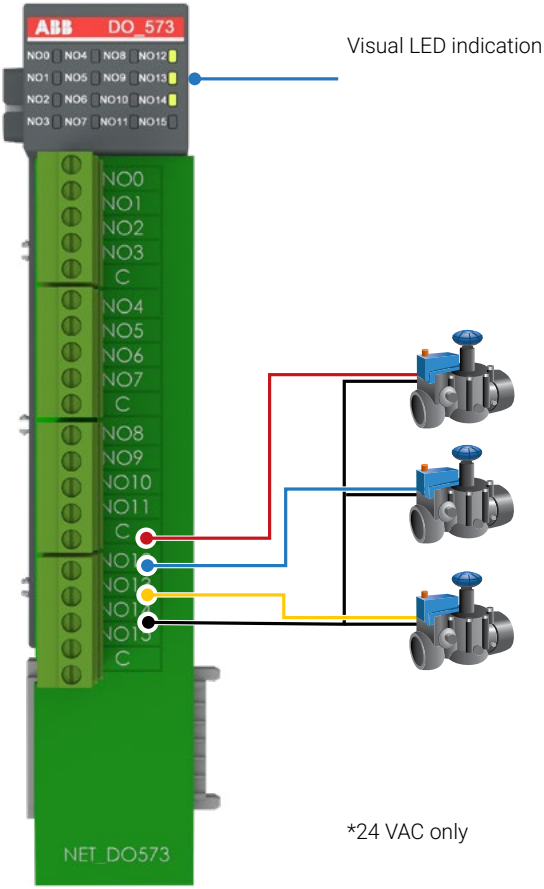
GrowSphere™ MAX - CPU



Expantion modules

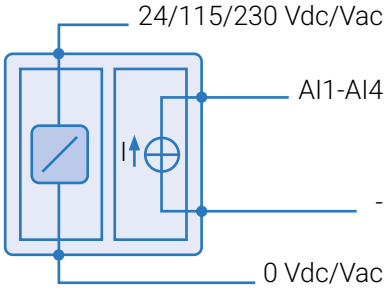
GrowSphere™ MAX - DO573 Module

- 16 normally open relay outputs
- Isolation Groups = 2 (8 channels per group)
- Output current per channel = 2 A
- Indication of output signals – 1 yellow LED per ch.

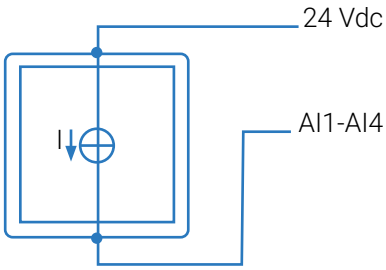


GrowSphere™ MAX - AI561 Module

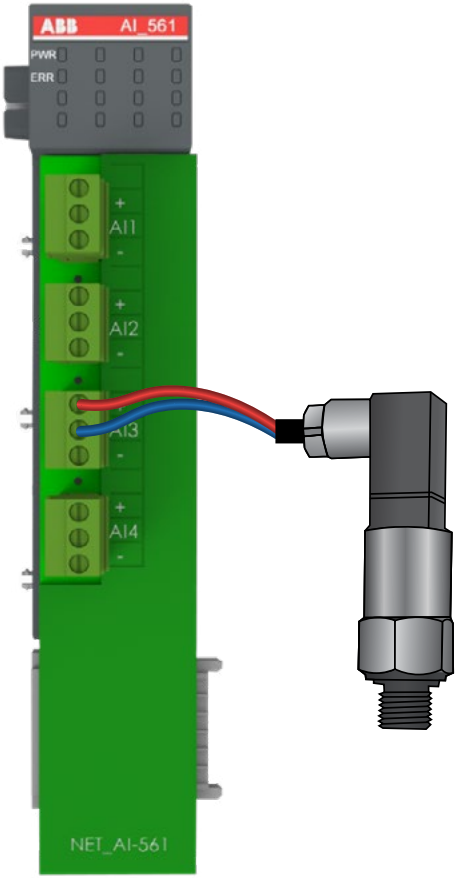
- 4 Analog Inputs
- Feed (Sourcing) voltage – 24 VDC
- Resolution – 0-20mA; 4 -20mA; 12 bit
- Channel input resistance – 250 ohm



Connecting isolated sensor with current output

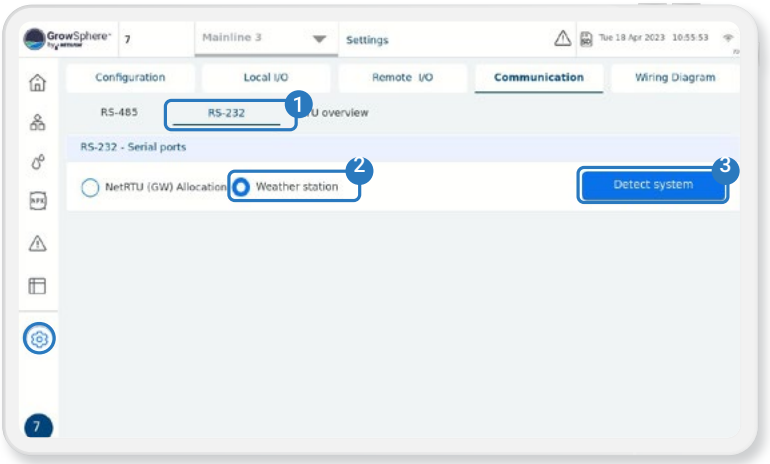


Connecting current transmitter

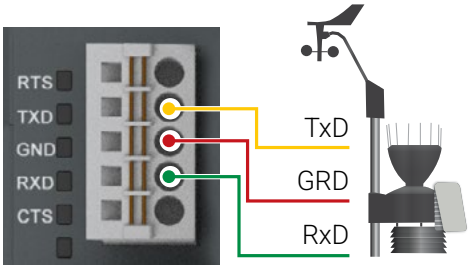


Connect to remote units

Connection of Weather Station – RS232



RS232 Module



Signal	Descrition
RTS	Request To Send DCE is ready to accept data from the DTE
TxD	Transmit Data (output)
GRD	Common Ground
RxD	Receive Data (input)
CTS	Clear To Send (input) DCE is ready to accept data from the DTE

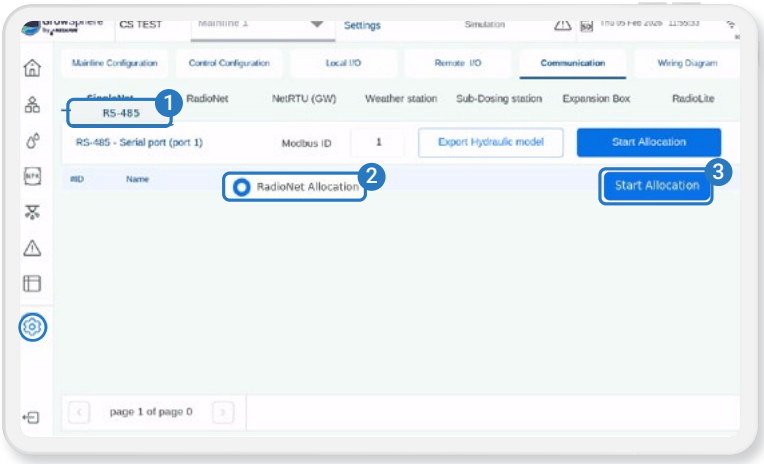
State LEDs

Signal	Color	State	Descrition
TxD	Yellow	ON (blinking)	Transmitting
RxD	Yellow	ON (blinking)	Receiving

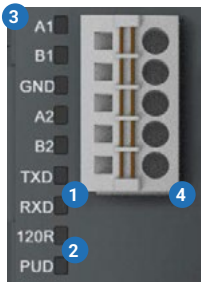
Connection of RadioNet / SingleNet – RS485

- Please note: Before starting this process, ensure you have the latest version of PoleNet & Polenet2Max Apps.
- In order to set up the Remote units, kindly get in touch with our Global support team via email at df.support@netafim.com

1. From the settings → communication → RS485 screen.
2. Mark the RadioNet allocation.
3. Start allocation.



RS485 Module



State LEDs

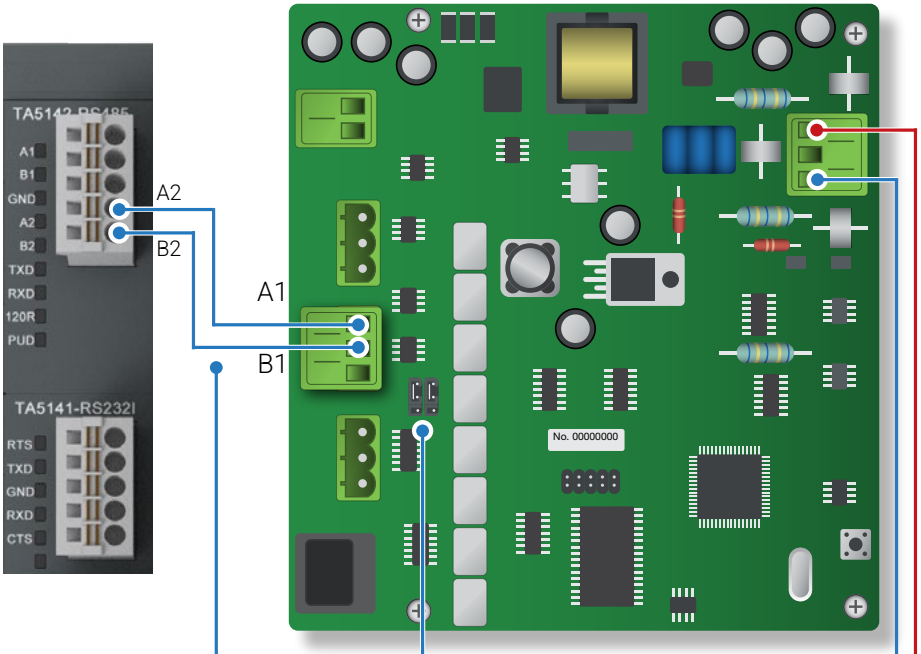
Signal	Color	State	Descrition
TxD	Yellow	ON (blink-ing)	Transmitting
RxD	Yellow	ON (blink-ing)	Receiving
120R	Yellow	ON	Bus termination
PUD	Yellow	ON	Pull-up / Pull-down

1. 2 LEDs for communication state display (TxD and R&D).
2. 2 LEDs for termination state display.
3. Allocation of signal name.
4. 5-pin terminal block for communication interface.

Wiring **SingleNet** Host & **Grow**Sphere™ MAX

GrowSphere™ **Max**

SingleNet Host



Jumper should be on the Upper side

Host to Field

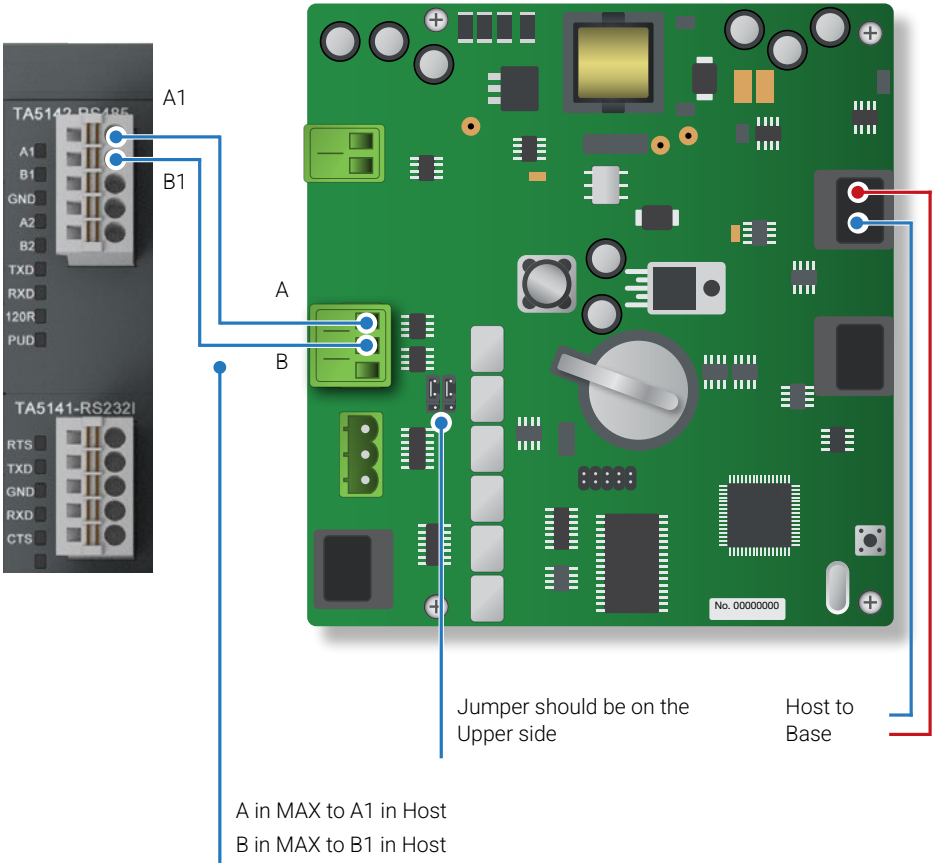
A2 in MAX to A1 in Host

B2 in MAX to B1 in Host

Wiring **RadioNet** to **Grow**Sphere™ MAX

GrowSphere™ **Max**

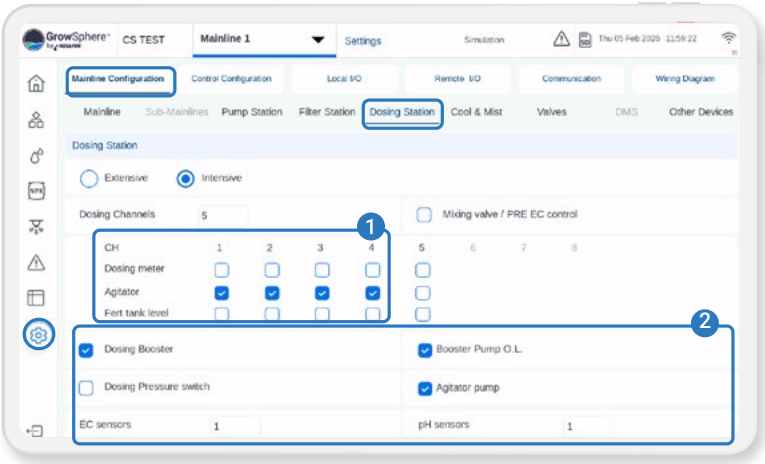
RadioNet Host



Dosing Setting

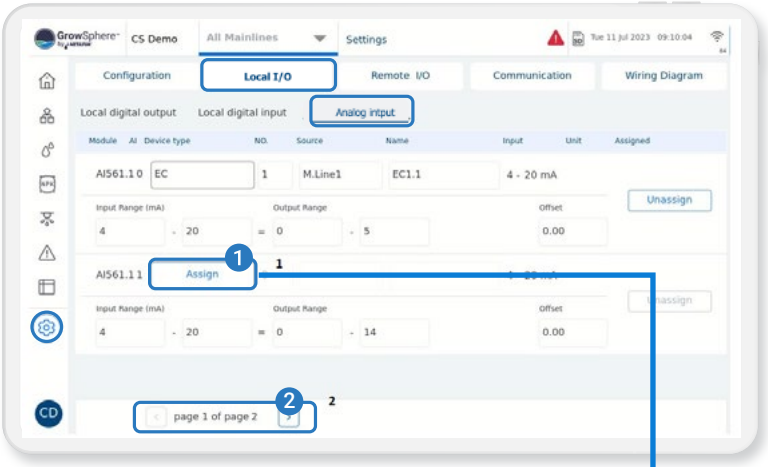
Set dosing station configuration

1. Define the numbers of dosing channels and agitators and activate them
2. Select the connected devices that relates to the dosing station



Define analog inputs

1. When you click on Assign, a list of devices that have been allocated will appear.
   From there, you can choose the sensor you want to work with and set the input ranges, name, and offset for each sensor
2. To assign additional analog sensors, simply navigate between the pages

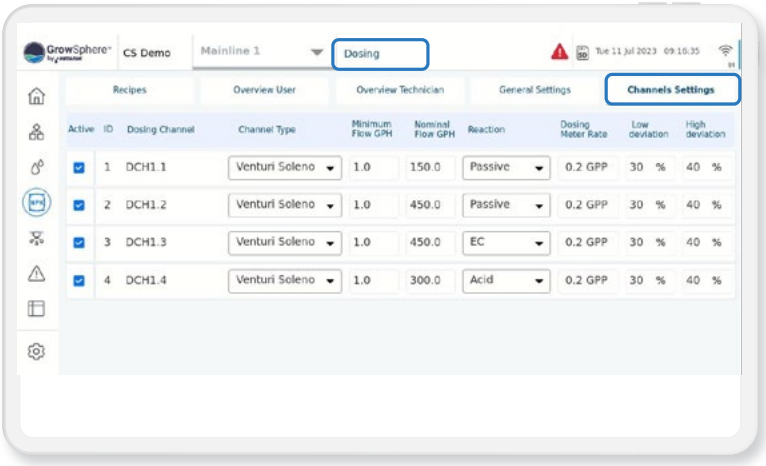


By clicking on Assign, the list below will be opened.
The allocated devices are presented in the list

Set Dosing channels

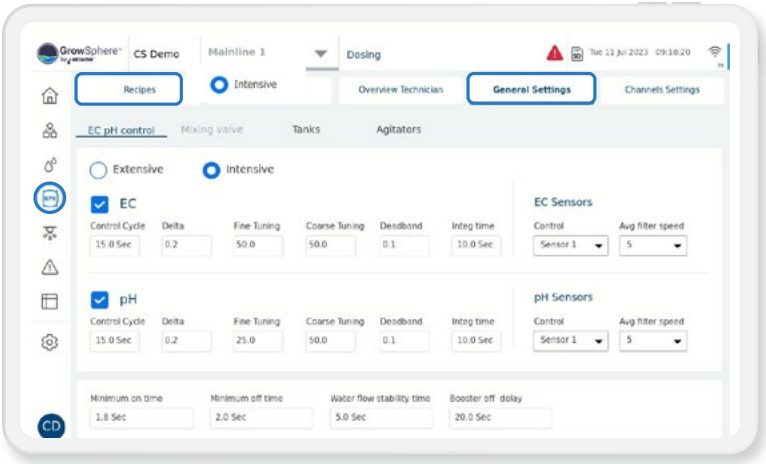
- Activate the connected channels.
- Define the Type, Minimum and Nominal flow, Reaction,

DM rate and deviations for each of the channels.



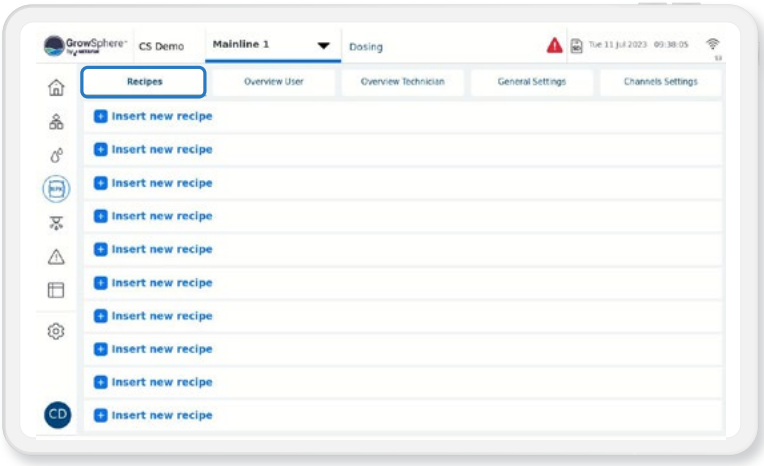
Set EC and pH reaction methods

1. Select Intensive dosing method Extensive can be selected when dosing is controlled by remote units, then EC and pH control are not optional.
2. Activate the relevant reaction method (EC/pH) and set the reactions parameters for each of the sensors



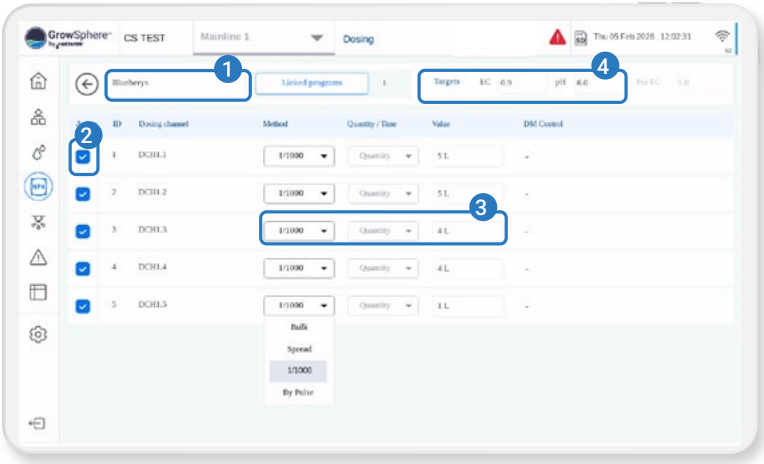
Create new dosing recipe

Click on the Insert new recipe to create a new dosing program. Activate the recipe, and repeat this action for other dosing recipes as required.



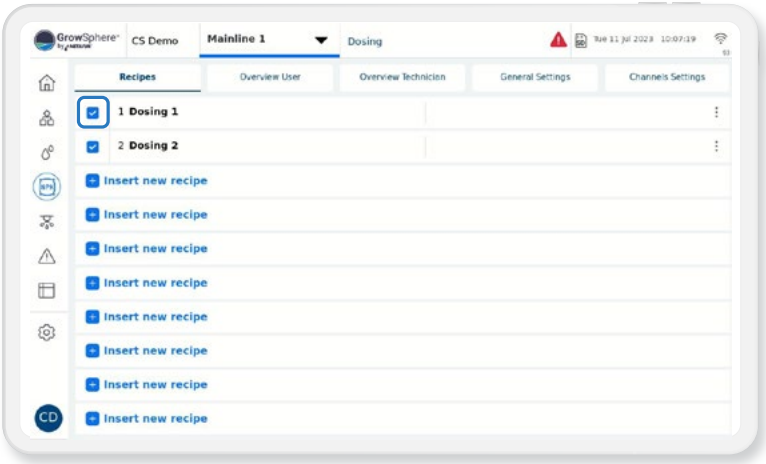
Define the dosing recipe channels

1. Name the recipe
2. Activate the recipe's dosing channels.
3. Select the methods and quantities and the Value for each channel. DM Control can be activated if required.
4. Set the target EC and pH.



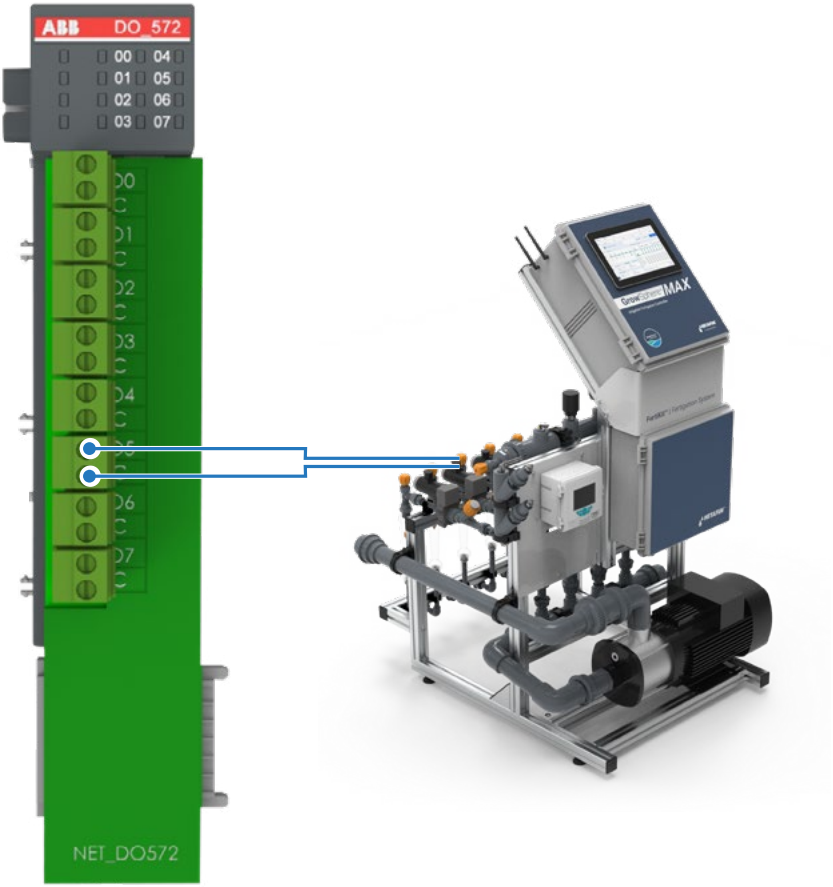
Activate the recipe

Activate the recipe, and repeat this action for other dosing recipes as required.

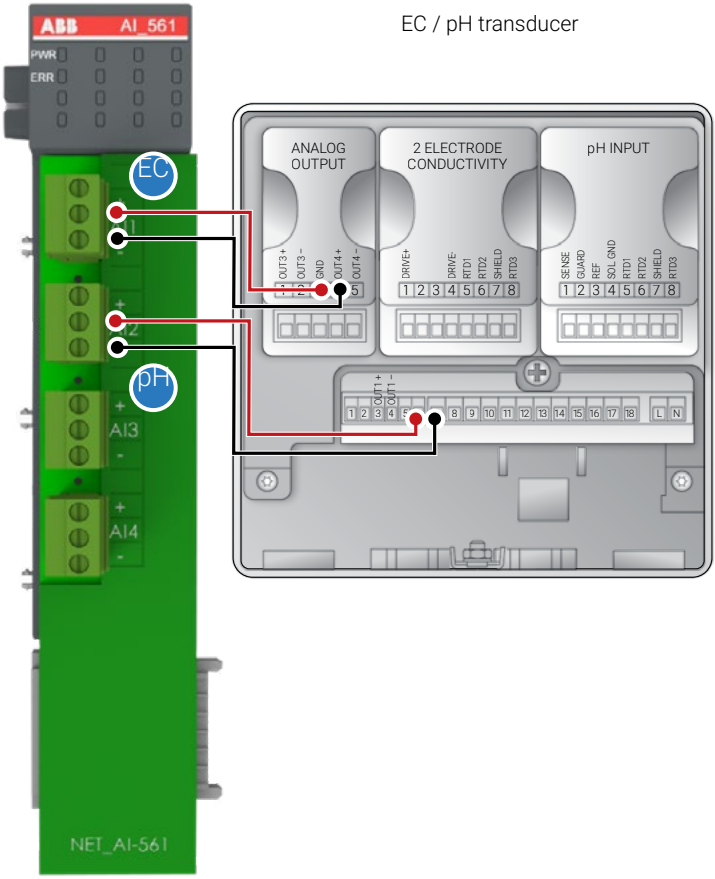


Connection of DO572 Module

- 8 triac outputs – 24 VAC
- 'C' – Shared common
- Output current per channel = 2 A
- 2A Fuse on each channel. Not removable
- Indication of output signals – 1 yellow LED per ch.
- The LED is on when output signal is high



Connection of Analog Inputs Module EC, pH - A1561

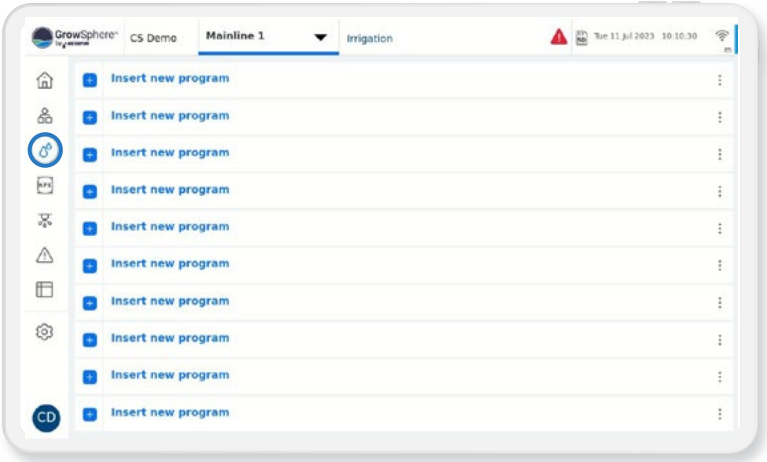


EC / pH transducer

Create irrigation program

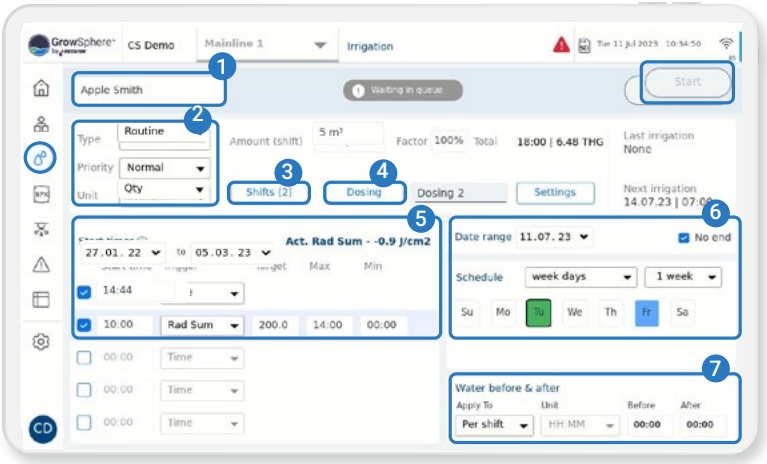
Create new irrigation program

Click on Insert new program



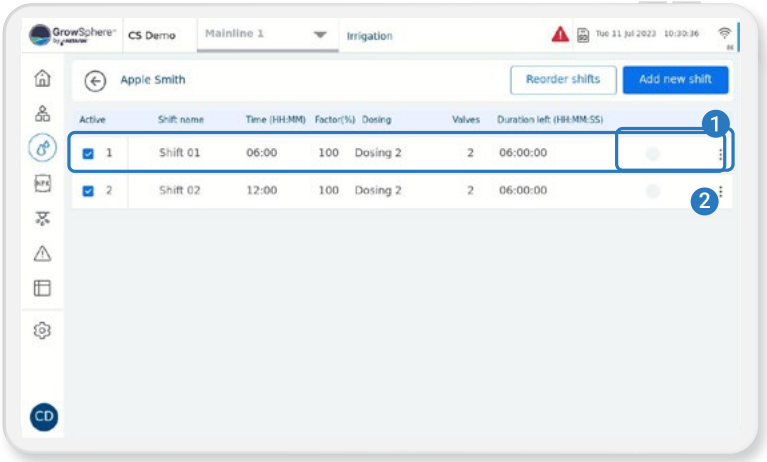
Set irrigation program

1. Name the irrigation program.
2. Specify the type of irrigation program, its priority, and the units to be used.
3. Click on Shifts to create shifts (see next page)
4. Click Dosing to select the Dosing program.
5. Set start times and triggers for irrigation.
6. Choose the days for irrigation and specify whether you want to use water only (indicated by blue) or dosing plus irrigation (indicated by green) for each selected day
7. Provide definitions for water before and after a shift or program.



Edit and/or add a new shift

1. Click to add a new Shift
2. Click to edit an existing Shift

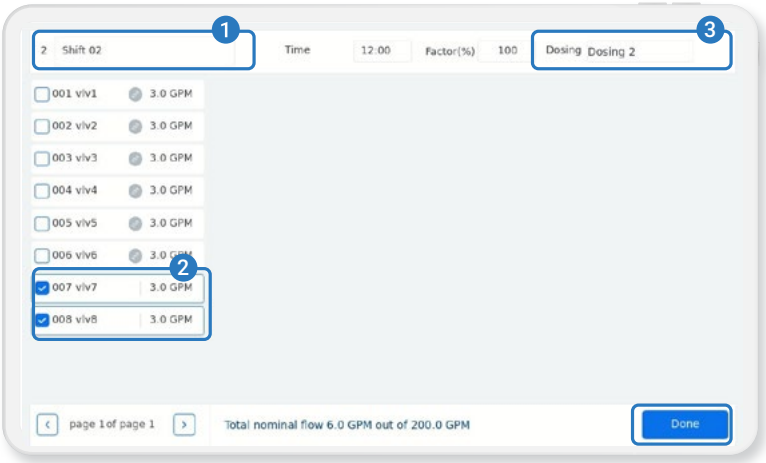


Edit and/or add irrigation shifts

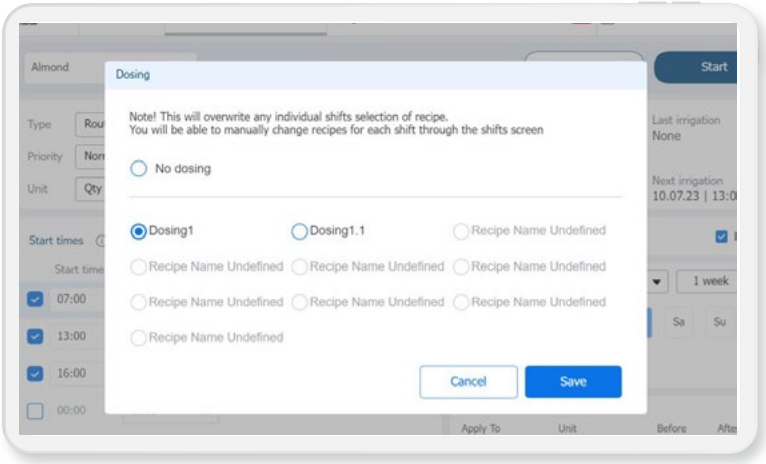
Assign dosing recipe to irrigation program

To assign valves to a shift, follow these three steps:

1. Give the shift a name
2. Choose the valves you want to assign to the shift
3. Assign the shift to a dosing recipe



Assign dosing recipe to irrigation program



Quick view of your irrigation operation status

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