

Irrigation: several times a day

A cultivation on substrate has to be irrigate several times a day.

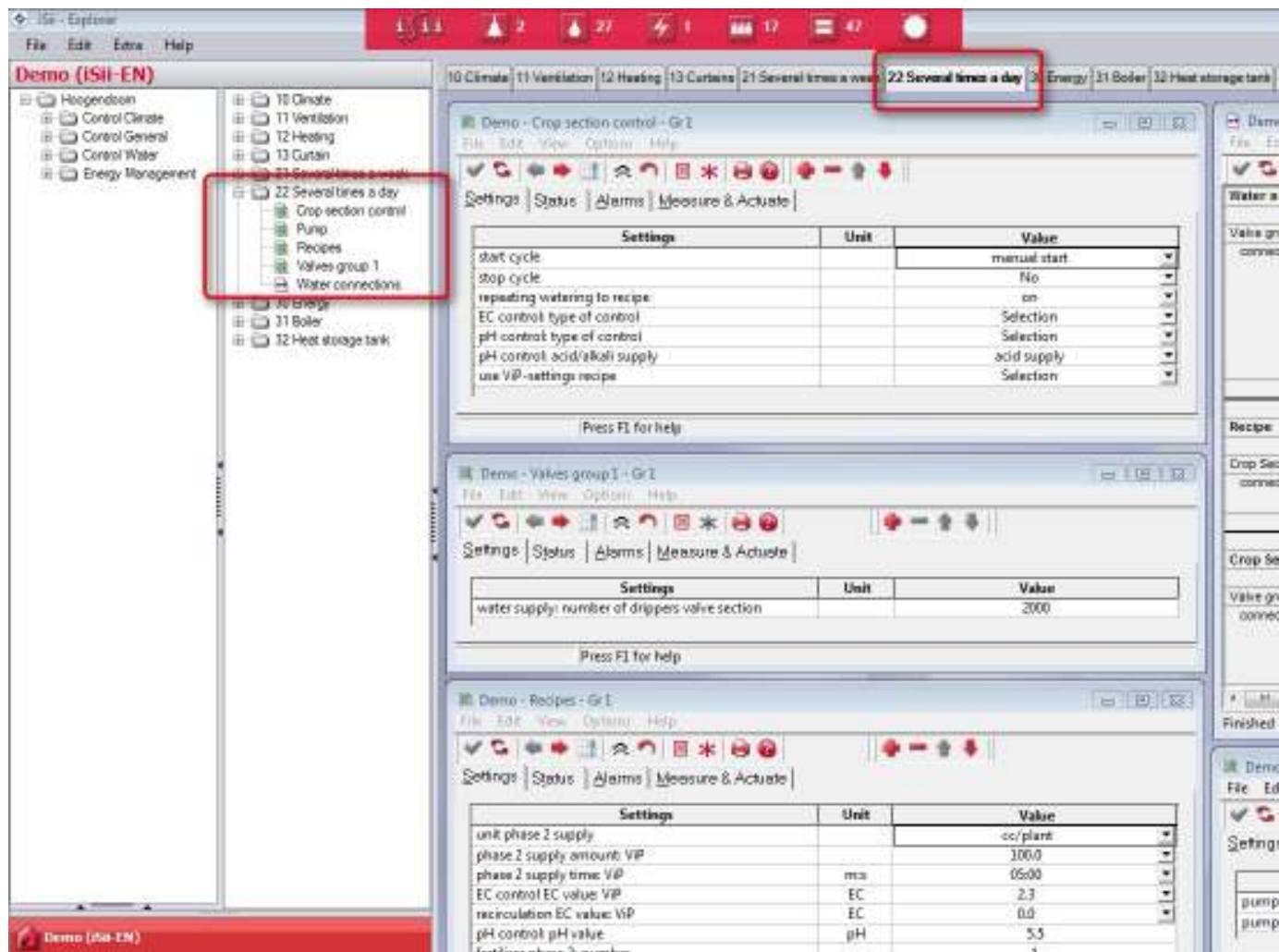
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1. Create a worksheet

First, create a worksheet '22 Several times a day'.

Proceed as follows:

1. Create a folder '22 Several times a day' in My explorer
2. Drag the setting lists and the waterconnections survey form the Hoogendoorn explorer to this folder
3. Drag them on to the worksheet



2. Pump

The setting list of "Pump" you can adjust to the following list:



pump: stop / continue

In this setting you can choose from:

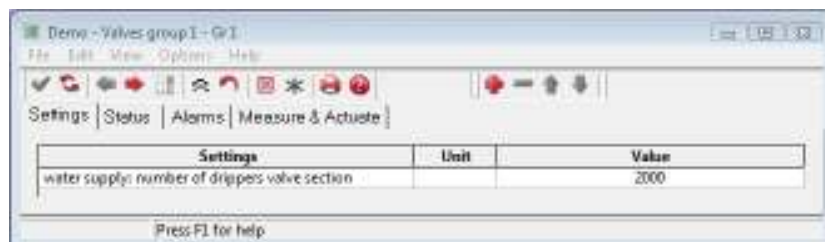
- set pump to pause: irrigation is paused until midnight
- let pump continue: the alarm is cancelled, irrigation continues from the same point where the pump was stopped for an alarm or pause

pump: pause time

These settings are used to specify a pause. The pause time then counts down.
Once the pause time has elapsed, irrigation starts at the same point where the pump was stopped before the pause.

3. Valve group 1

The setting list of "Valves group 1" you can adjust to the following list:

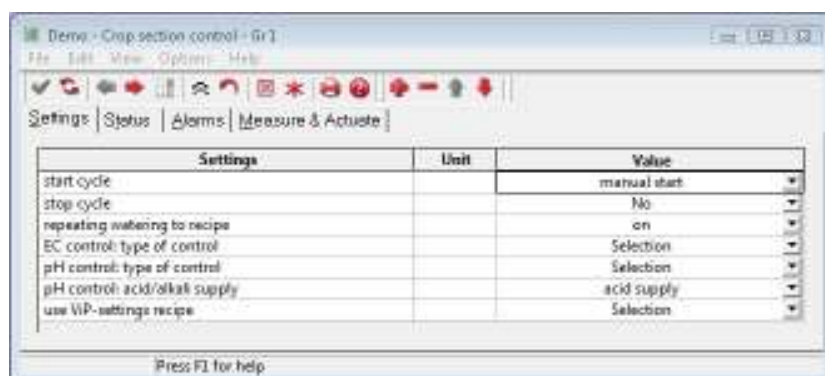


water supply: number of drippers valve section

Enter the number of drippers for the valve section in this setting.
This setting is used for registering and controlling the water supply in cc/plant.

4. Crop section control

The setting list of 'Crop section control' you can adjust to the following list:



start cycle

You can give an extra cycle with a manual start.

stop cycle

If this setting is set to 'yes' while the crop section is active with the pump, the current cycle is stopped completely.

repeating watering to recipe

The options are:

- on
- off today, start times
- off today, no start times
- off

EC control: type of control

You can choose one or more options in this setting:

- phase 3 EC supply
- phase 2 EC supply

pH control: type of control

You can choose one or more options in this setting:

- phase 3 pH active
- phase 2 pH active

pH control: acid/alkali supply

You can choose one or more options in this setting:

- supply alkaline
- supply acid

use VIP-settings recipe

If you use a recipe, you can choose whether the crop section settings or the recipe settings are used for it:

- phase 2: EC value
 - phase 2: pH value
 - phase 2: fertilizer choice
 - phase 2 supply: ViP as min
 - phase 2 supply: ViP as max
-

5. Recipes

The setting list of 'Recipes' you can adjust to the following list:

Settings	Unit	Value
unit phase 2 supply		cc/plant
phase 2 supply amount: ViP		100.0
phase 2 supply time: ViP	mins	05:00
EC control EC value: ViP	EC	2.3
recirculation EC value: ViP	EC	0.0
pH control: pH value	pH	5.5
fertilizer phase 2: number		1
interval: ViP	m	20
delay time: ViP	m	40
cycles number		200
type of start recipe		daily repeating
start- en stopconditions		Selection
time start relative to		clock
time start time	time	08:00
time stop relative to		clock
time stop time	time	16:00
radiation: start relative to		sunrise
radiation: start time	time	00:00
radiation: stop relative to		sunset
radiation: stop time	time	00:00
radiation sum start: ViP	J/cm ²	100
radiation threshold start: ViP	W/m ²	50

unit phase 2 supply

You can choose:

- volume in m3
- litres per m2
- cc per plant
- time
- cc per m3

phase 2 supply time: ViP

phase 2 supply amount: ViP

If 'unit phase 2 supply' is set to 'time', 'phase 2 supply time: ViP' is used.
If a different unit is selected, 'phase 2 supply amount: ViP' is used.

EC control EC value: ViP

The setting for the EC.

recirculation EC value: ViP

The setting for the EC recirculation.

pH control: pH value

The setting for the pH.

fertilizer phase 2: number selection

This setting can be selected for different fertilizers.

interval: ViP

delay time: ViP

The interval and delay time can be used to set the irrigation schedule for a 24-hour period..

When a cycle is initiated, it begins with the interval. This is followed by the delay time.

A cycle can start during the delay time if a start condition is met.

Repeated irrigation will always wait for the delay time after Start Time

The interval followed by the delay time is always inserted between the following cycles.

Example:

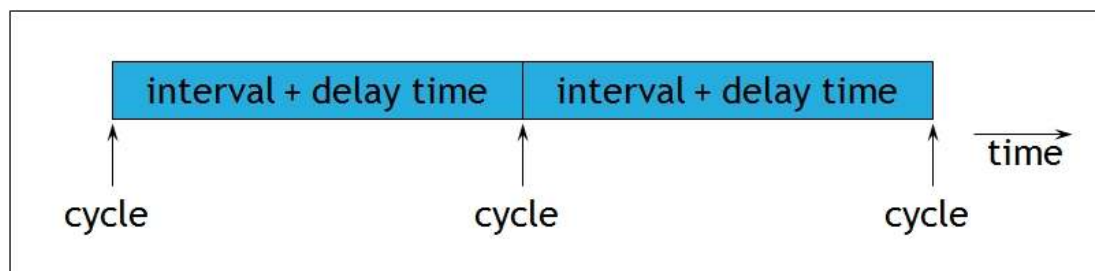
Minimum number of cycles on a very dark day: 10

Maximum number of cycles on a very dark day: 20

The irrigation period lasts for 10 hours (= 600 minutes).

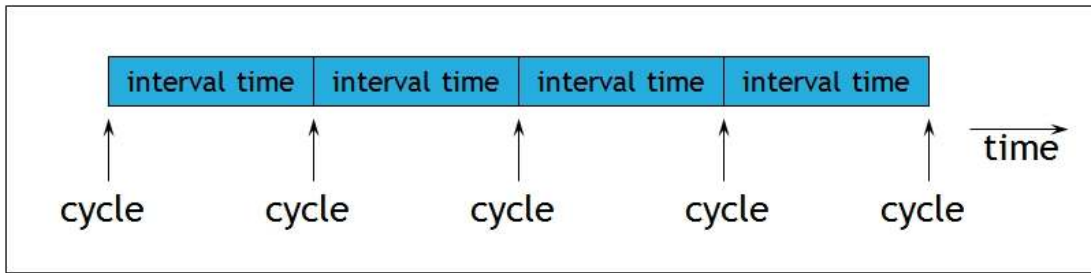
During a very dark day, the interval and the delay time will be inserted between the cycles, i.e.:

Interval + delay time = 600 minutes / 10 cycles = 60 minutes (maximum time between 2 cycles).



During a very sunny day, only the interval will be inserted between the cycles, i.e.:

Interval = 600 minutes / 20 cycles = 30 minutes (minimum time between 2 cycles).



The delay time is then: maximum time - minimum time = 30 minutes.

You can use this example to estimate the approximate settings for the interval and delay time. With growing experience, you will be able to change the settings yourself as you see fit.

cycles: number

You can enter the maximum number of cycles in this setting (in the case of repeated irrigation). It is, therefore, possible for fewer cycles to be initiated, but not more.

type of start recipe

- repeating daily: irrigation will be repeated every day between start time and stop
- continuous: taking due account of the interval and the delay time, irrigation will take place continuously
- start immediately: irrigation will start immediately

start- en stopconditions

You can choose one or more options in this setting:

- radiation: the system may start based on the radiation sum between the start and finish time
- time: the system may start based on the time between the start and finish time

time: start relative to

time: start time

time: stop relative to

time: stop time

These settings enable you to set the period in which water may be applied, based on time.

radiation: start relative to

radiation: start time - h:m

radiation: stop relative to

radiation: stop time - h:m

radiation sum start: ViP - J/cm²

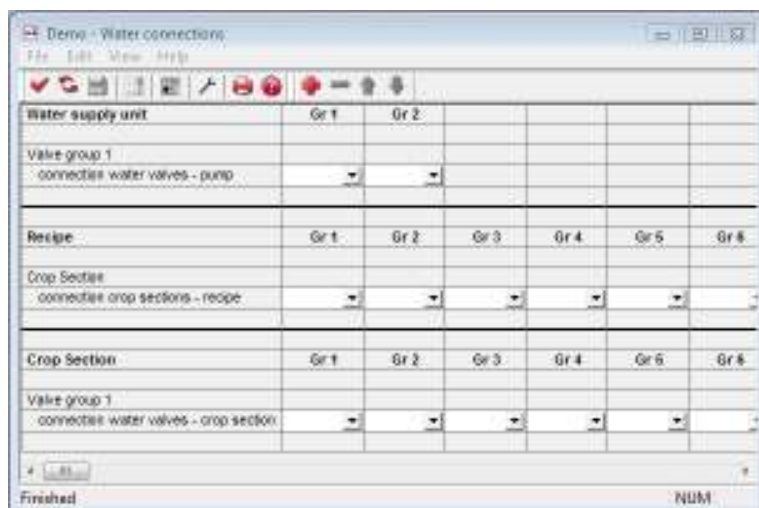
radiation threshold start: ViP - W/m²

These settings enable you to set the period in which water may be applied, based on the radiation sum.

If the measured radiation sum is higher than the 'radiation sum start: ViP' setting, and the currently measured radiation is higher than the 'radiation threshold start: ViP' setting, the system may start during the delay time.

6. Water connections

You can adjust the group connection survey of the Water connections as follows:



Then the valves and crop sections can be connected as the following example:

Demo - Water connections						
File Edit View Help						
Water supply unit	Gr 1	Gr 2				
Valve group 1						
connects water valves - pump	▼	Gr 8 ▼ Gr 9 Gr 10				
Recipe	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6
Crop Section						
connects crop sections - recipe	▼	▼	▼	▼	▼	▼
Crop Section	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6
Valve group 1						
connects water valves - crop section	▼	▼	▼	Gr 8 ▼	Gr 9 ▼	Gr 10 ▼