Module 1

Hoogendoorn iSii Quick-Start Operation

Version 8 rev 2 – December 2017

iSii - Explorer

File   Edit   Extra   Help

iSii   ⚠ 2   💧 6   ⚡ 0   🌡 0   ≡ 8   ☀

My iSii (Training-EN)

- Hoogendoorn
  - Control Climate
  - Control General
  - Control Water
  - Energy Management

- 00 Meteo
  - Meteo
  - Weather actual

00 Meteo

My iSii - Meteo - Meteo station

File   Edit   View   Options   Help

Settings   Status   Alarms   Measure & Actuate   Service

Settings	Unit	Value
frost temperature: ViP	°C	1.0
wind speed storm	m/s	16.0
wind speed storm curtain	m/s	16.0
wind speed storm curtain running	m/s	16.0
selection wind direction: wind dry		Selection
selection wind direction: wind humid		Selection
selection wind direction: wind cold		Selection
selection wind direction: wind warm		Selection
radiation: delayed climate: max. radiation rise	(W/m²)/min	35
radiation: delayed climate: max. radiation drop	(W/m²)/min	20
computed maximum radiation level this day	W/m²	378
computed maximum radiation sum actual	J/cm²	14395

Press F1 for help

My iSii - Weather actual

File   Edit   View   Help

Meteo	
outside temperature: measurement	°C
wind speed: measurement	m/s
wind speed gusts: measurement	m/s
wind direction: measurement	
RH meteo: measurement	%
enthalpy weather	kJ/kg
radiation: measurement	%
radiation: delayed climate	W/m²
radiation: measurement	W/m²
radiation sum: measurement	J/cm²
PAR weather: measurement	µmol/m²/s
storm: status	
rain: status (1=rain 0=dry)	
frost: status	

F1 Help

My iSii (Training-EN)

2:28 PM
11/2/2017

Task 1. Personalise your user interface

1. Please watch the video "Customize My explorer"

2. Please watch the video "Create worksheets"

3. Create the folder "00 Meteo" just like the example above

4. Drag and drop the definitions from the Hoogendoorn explorer to your own explorer

5. Create the worksheet "00 Meteo" just like the example

6. Drag and drop the definitions from your own explorer to the worksheet

Settings	Unit	Value
frost temperature: ViP	°C	1.0
wind speed storm	m/s	16.0
computed maximum radiation level this day	W/m²	378

Press F1 for help

Task 2.   Personalise a setting list

1. Please watch the video "Customize a setting list"

2. Adapt the setting list like the example above

3. At what temperature it will freeze? ……. °C

4. What will happen with the ventilation control?

5. At what wind speed there is a storm? ……. m/s

6. What will happen with the ventilation control?

Colour	☐	Settings	Unit	Group	Factor	Axis	Min	Max	Avg
	☑	outside temperature: measurement	°C	Meteo station	1	->	-3.8	6.6	2.2
	☑	radiation sum: measurement	J/cm²	Meteo station	1	<-	0	518	156
	☑	radiation: measurement	W/m²	Meteo station	1	<-	0	317	41
	☑	rain: status (1=rain 0=dry)		Meteo station	10	<-	No	Yes	No
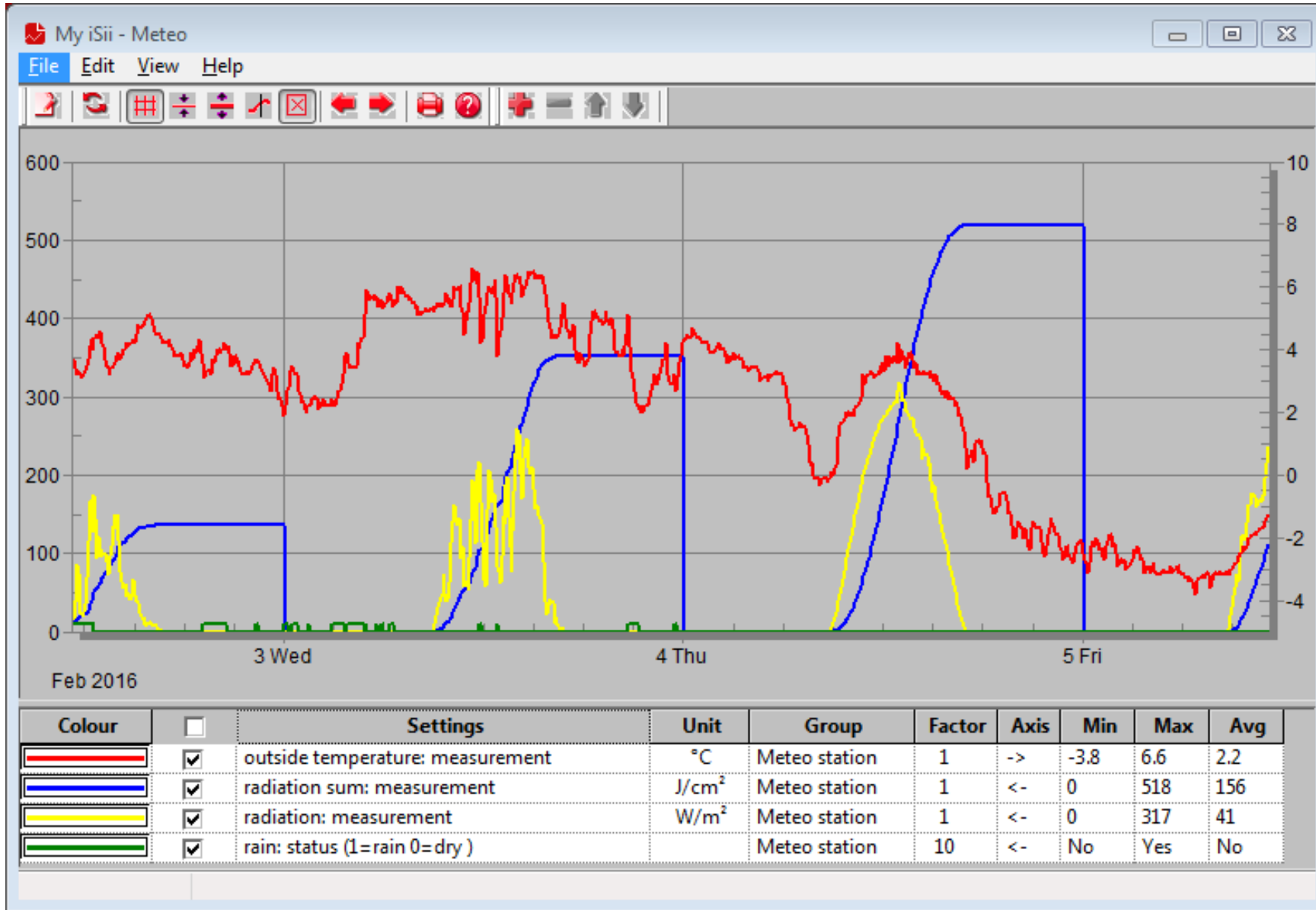
Task 3.   Create a new graph

1.   Please watch the video "Create a graph"

2.   Add a new graph to folder "00 Meteo"

3.   Enter name "Meteo"

4.   Drag and drop the graph to worksheet "00 Meteo"

5.   Change the period between 02-02-2016 00:00:00 and 05-02-2016 00:00:00

6.   Add the graph lines like the example above

7.   Change the scale values for the left and right axis

8.   Choose the right axis for the line "outside temperature: measurement"

9.   Use Factor for the line "rain: status (1=rain 0=dry)"

10. Was it raining during this period? ………

11. When was the most sunniest day? ………..

Task 4.   Personalise your user interface

1. Create the folder "10 Climate" just like the example above

2. Drag and drop the definitions from the Hoogendoorn explorer to your own explorer

3. Create the worksheet "10 Climate" just like the example

4. Drag and drop the definitions from your own explorer to the worksheet

		From	To	Now	1	2	3	4	
	Period state				On ▼	On ▼	Off ▼	Off ▼	Off
	Start time				00:00	00:00	00:00	00:00	04
	Relative to				Sunrise ▼	Sunset ▼	Clock ▼	Clock ▼	Clo
Baseline average	Change				01:00	01:00	00:00	00:00	00
18.4	Value			19.0	19.0	18.0	0.0	0.0	16
Influence		From	To	Now	1	2	3	4	
No influence ▼									

heating temperature: ViP - °C | ventilation temperature lee side: ViP - °C | ventilation temperature wind side: ViP - °C
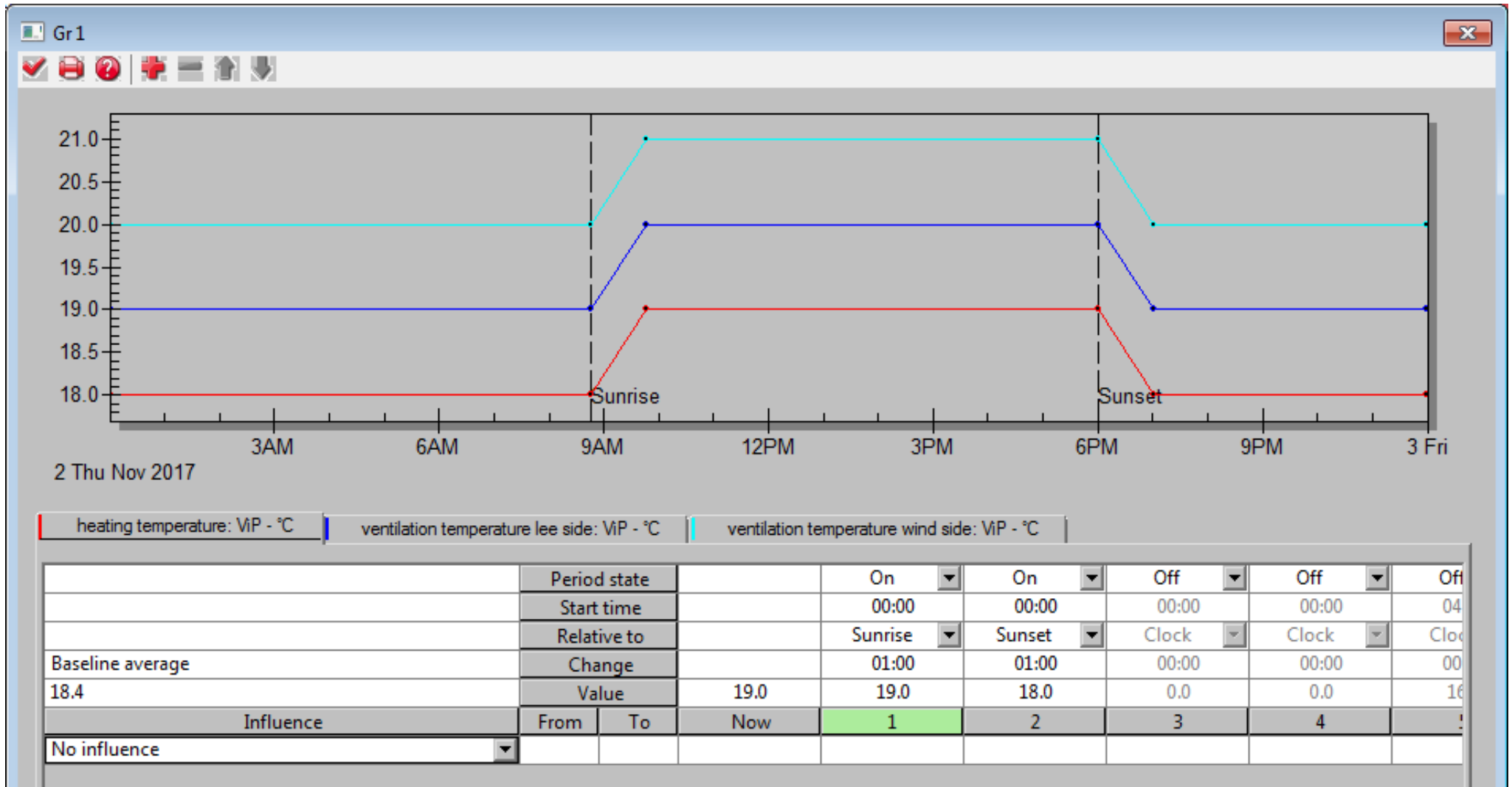
Task 5. Adapt the unique powerful graphical setpoints (ViPs)

1. Please watch the video "Change a ViP setting"

2. Please watch the video "Add a period to a ViP"

3. Please watch the video "Handy tips ViP setting"

4. Select and open the setpoints "heating temperature", "ventilation temperature lee side" and "ventilation temperature wind side" together

5. Change the setpoints until you get the same picture as the example below

6. How high is the computed heating temperature at the following points of time:

    a. 3 o'clock ….. °C

    b. 12 o'clock …. °C

    c. 21 o'clock …. °C

7. At what greenhouse temperature the vents at the lee side will open at 12 o'clock?

    a. 19 °C

    b. 20 °C

    c. 21 °C

					On ▾	On ▾	Off ▾	Off ▾	Off
		Period state			On ▾	On ▾	Off ▾	Off ▾	Off
		Start time			00:00	00:00	00:00	00:00	04
		Relative to			Sunrise ▾	Sunset ▾	Clock ▾	Clock ▾	Clo
Baseline average		Change			01:00	01:00	00:00	00:00	00
18.4		Value	19.0		19.0	18.0	0.0	0.0	16
Influence		From	To	Now	1	2	3	4	
radiation: measurement - W/m² ▾		200	500		1.5	0.0	0.0	0.0	0
No influence ▾									

Module 1 – Hoogendoorn iSii Quick-Start Operation
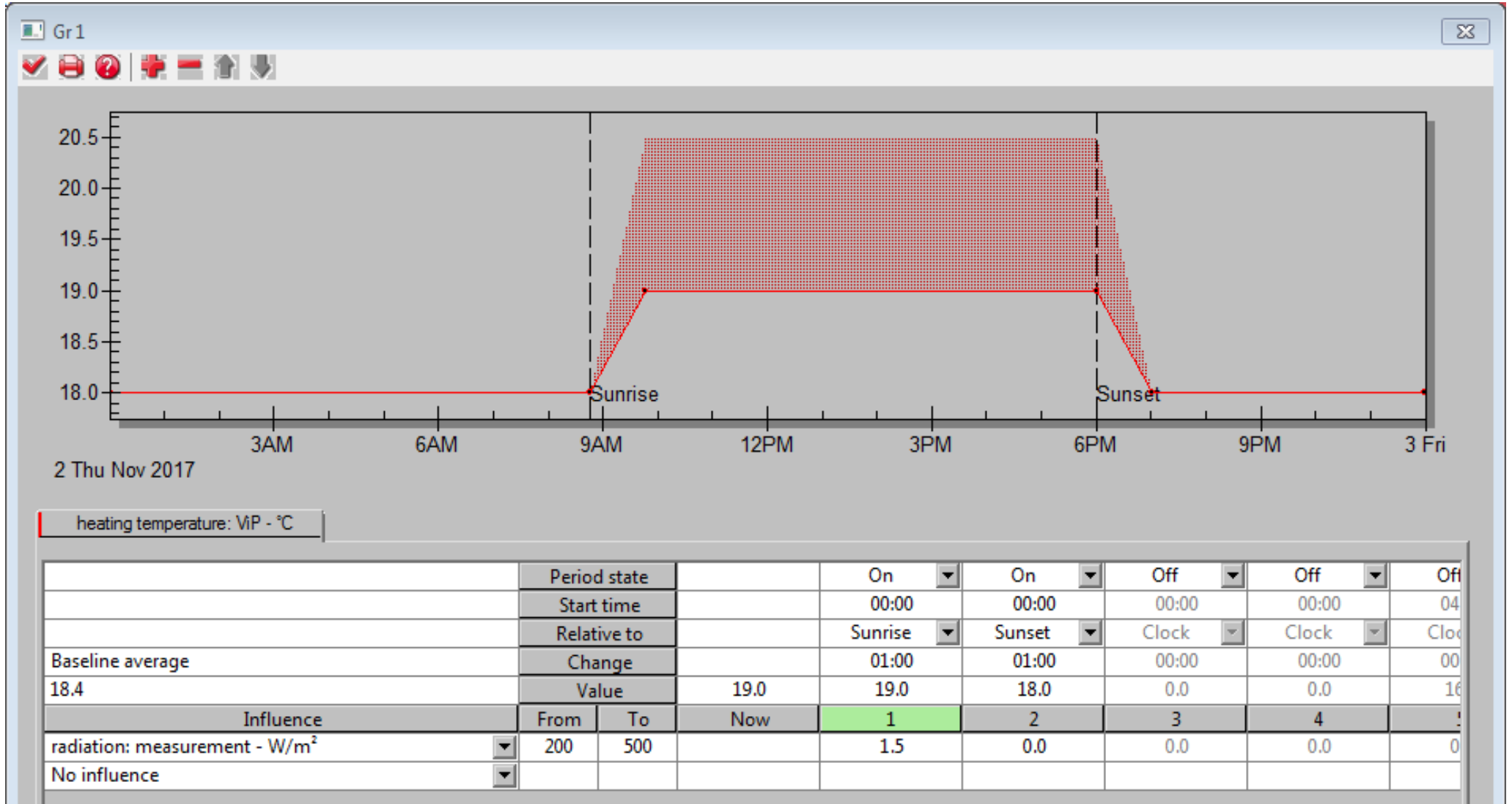
Task 6.   Adapt the unique powerful graphical setpoints (ViPs)

1. Please watch the video "Set an influence in a ViP"

2. Open the setting "heating temperature"

3. Change the setpoint until you get the same picture as the example above
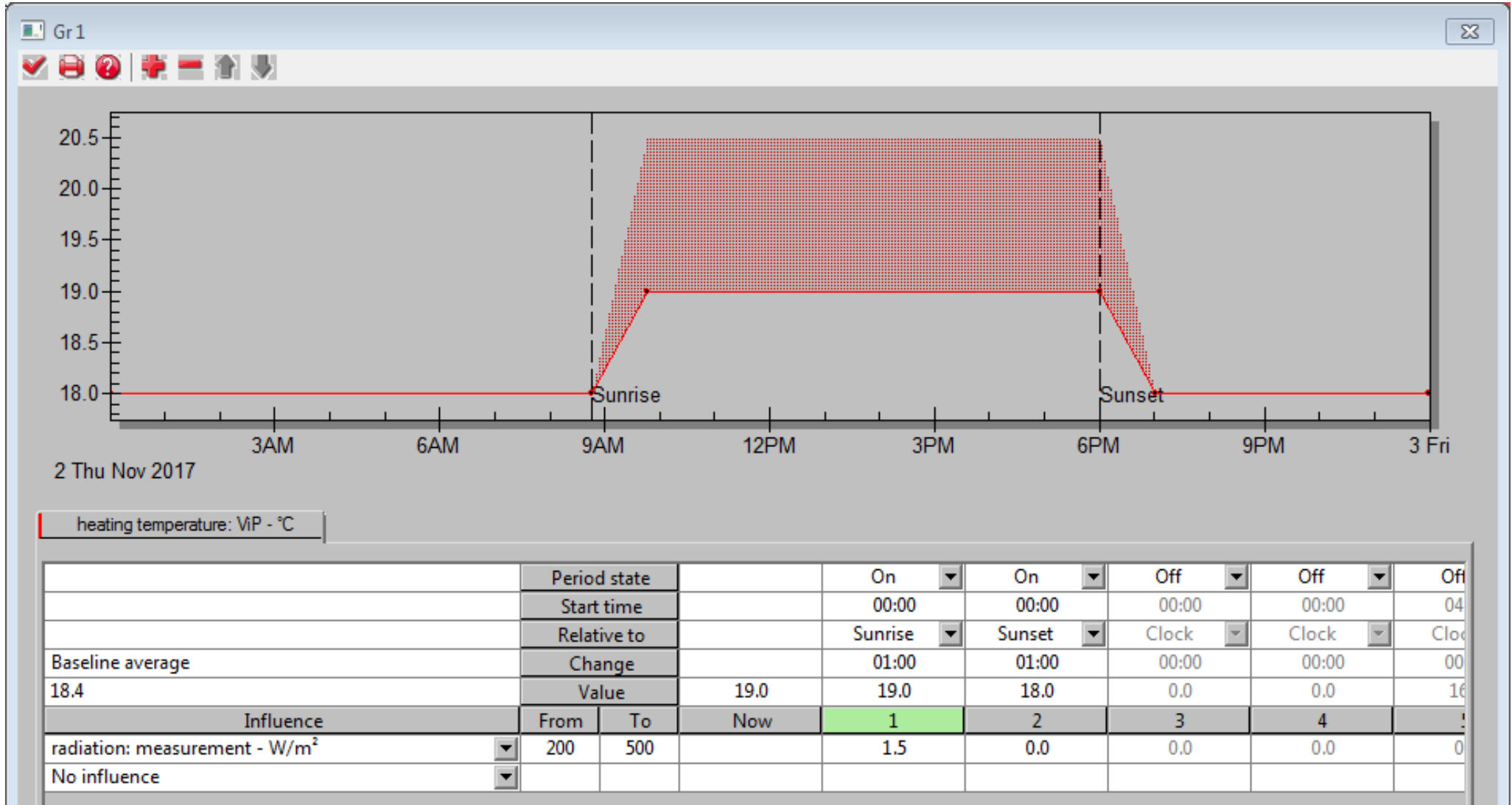
Task 7. Adapt the unique powerful graphical setpoints (ViPs)

1. How high is the computed heating temperature if the measured radiation is equal to:

   a. 100 W/m2   ……. °C

   b. 200 W/m2   ……. °C

   c. 300 W/m2   ……. °C

   d. 400 W/m2   ……. °C

   e. 500 W/m2   ……. °C

   f.   600 W/m2   ……. °C

My iSii - Climate actual

File Edit View Help

Greenhouse climate		Gr 1	Gr 3	Gr 2	Gr 4	
greenhouse temperature climate: measurement	°C	21.9	29.8	21.5	30.1	
heating temperature: computed	°C	19.0	19.0	20.0	19.6	
RH climate: measurement	%	84	72	82		
RH: ViP	%	80	0	80	0	
Ventilation lee side		Gr 1	Gr 2	Gr 3	Gr 4	
lee side ventilation temperature: computed	°C	20.0	19.0	21.0	19.6	
lee side vent position: computed	%	100	100	14	100	
lee side vent position: measurement	%	0	4	55	33	
Ventilation wind side		Gr 1	Gr 2	Gr 3	Gr 4	5=Afd 6
wind side ventilation temperature: computed	°C	21.0	21.0	23.0	21.6	20.5
wind side vent position: computed	%	47	59	10	69	0
wind side vent position: measurement	%	23	0	0	0	0
Heating general		Gr 1	Gr 2	Gr 3	Gr 4	
Heating circuit		1 rail	2 rail	3 rail	4 rail	
circuit pipe: measurement (I/O)	°C	30	25	13	20	
circuit pump: status		on	on	on	on	
		1 grow	2 grow	3 grow	4 grow	
circuit pipe: measurement (I/O)	°C	28	36	24	23	
circuit pump: status		off	off	off	off	

F1 Help

Task 8.   Personalise a survey

1. Please watch the video "Customize a survey"

2. Rename the survey "Climate measured actual" to "Climate actual"

3. Adapt the survey like the example above
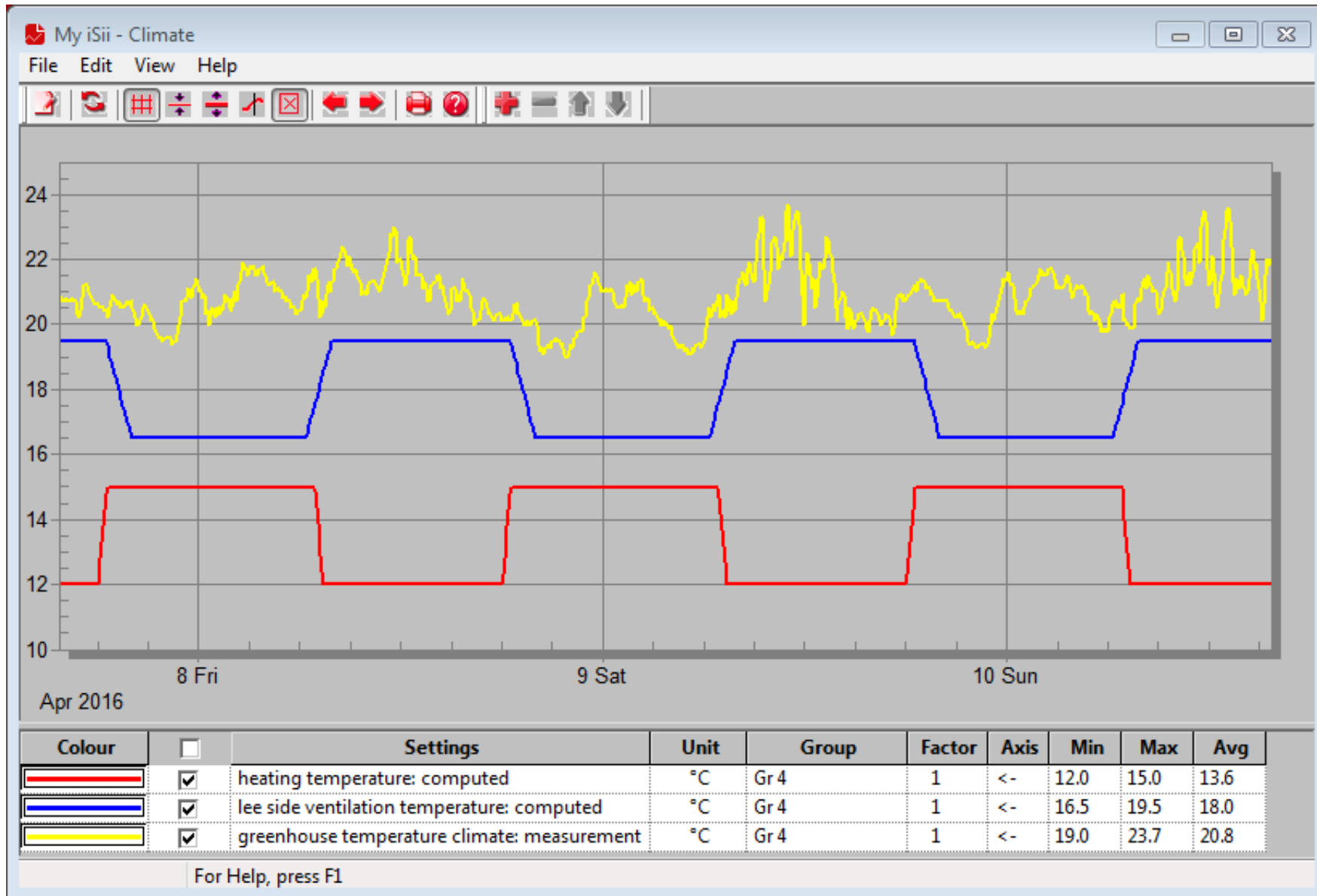
Task 9. Create a new graph

1. Add a new graph to folder "10 Climate"

2. Enter name "Climate"

3. Drag and drop the graph to worksheet "10 Climate"

4. Change the period between 07-04-2016 00:00:00 and 10-04-2016 00:00:00

5. Add the graph lines like the example above

6. Change the scale values: minimum to 10, maximum to 25

7. What is the highest greenhouse temperature? ……. °C

8. What is the lowest heating temperature? ……. °C

9. What is the avarage greenhouse temperature? ……. °C
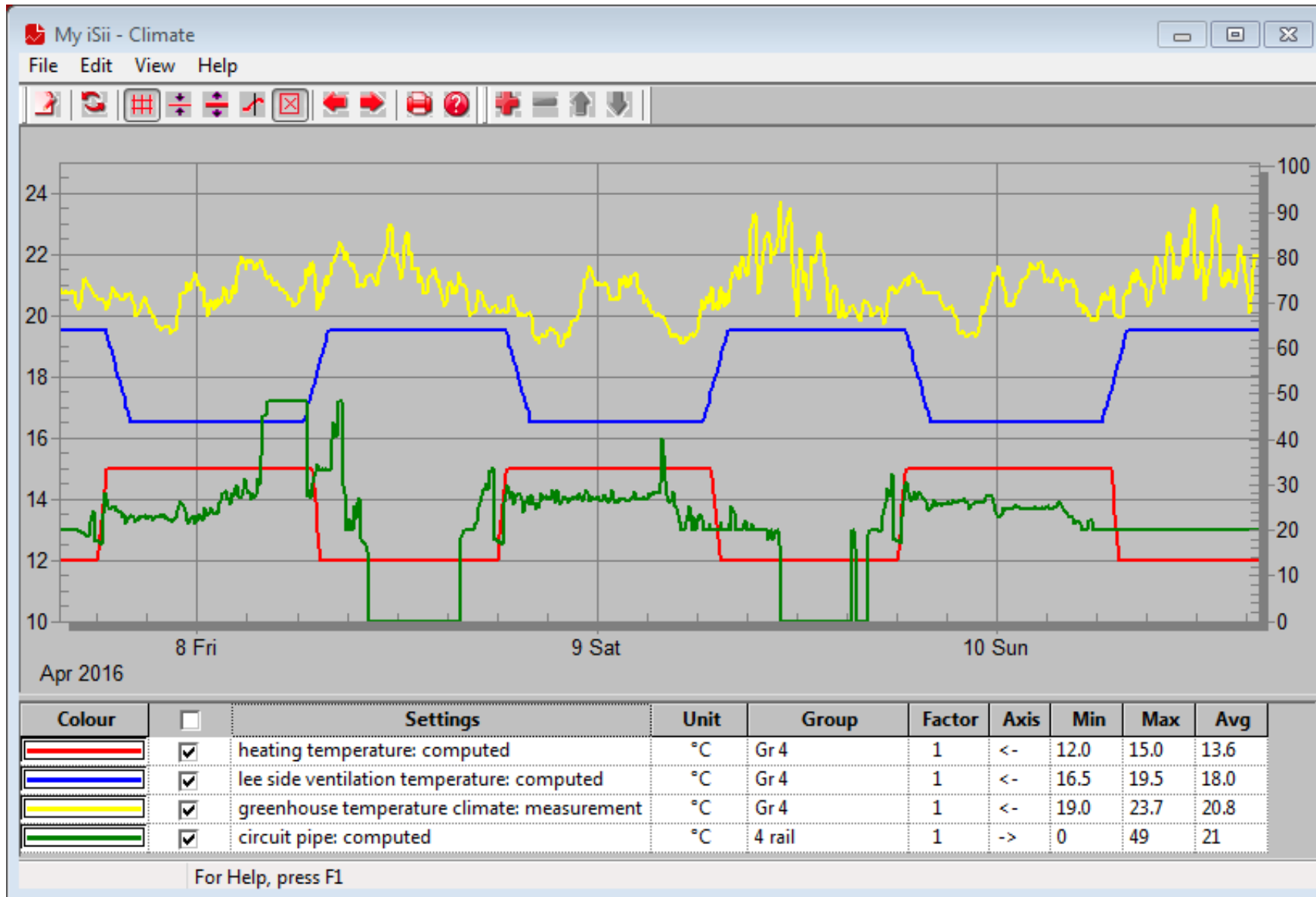
Task 10. Use a graph for more insight to the control

1. Add a graph line "circuit pipe: computed" to the graph

2. Use the right axis

3. Change the scale value of the right axis: minimum to 0, maximum to 101

4. The pipe temperature is computed:

    a. when the greenhouse temperature is lower than the computed heating temperature

    b. when the greenhouse temperature is lower than the computed ventilation temperature

    c. based on the setpoint minimum pipe temperature

5. Why the measured pipe temperature is sometimes 0 degrees?

    a. The pump is off

    b. There is no heat demand in the greenhouse

    c. The boiler is off

Colour	☐	Settings	Unit	Group	Factor	Axis	Min	Max	Avg
(red)	☑	heating temperature: computed	°C	Gr 4	1	<-	12.0	15.0	13.6
(blue)	☑	lee side ventilation temperature: computed	°C	Gr 4	1	<-	16.5	19.5	18.0
(yellow)	☑	greenhouse temperature climate: measurement	°C	Gr 4	1	<-	19.0	23.7	20.8
(green)	☑	circuit pipe: computed	°C	4 rail	1	->	0	49	21
(cyan)	☑	curtain: position	%	Gr 4 LUXOUS 1547 D FR	1	->	0.0	100.0	15.8

For Help, press F1
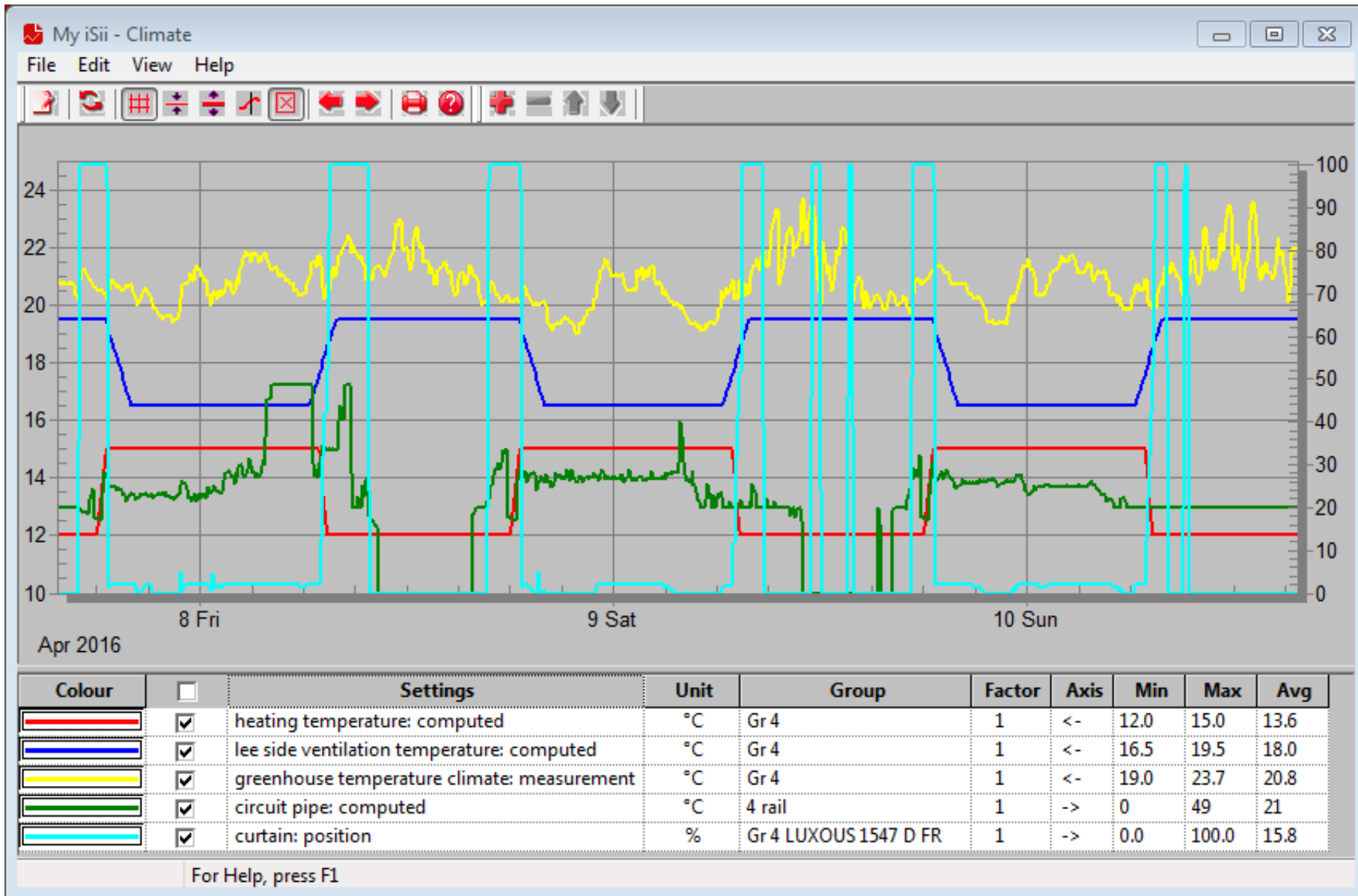
Task 11. Use a graph for more insight to the control

1. Add a graph line "curtain: position" to the graph

2. Use the right axis

3. Zoom in to Friday 8 April

4. Which picture is right?

    a. Curtain is closed: curtain position = 100%

    b. Curtain is closed: curtain position = 0%

5. Why the curtain is opened during the day?:

    a. Greenhouse temperature is high enough

    b. Outside temperature is high enough

    c. Radiation is high enough

Task 12. Personalise your user interface

1. Create the folder "11 Ventilation" just like the example above

2. Drag and drop the definitions from the Hoogendoorn explorer to your own explorer

3. Create the worksheet "11 Ventilation" just like the example above

4. Drag and drop the definitions from your own explorer to the worksheet

My iSii - Lee side - Gr 1

File   Edit   View   Options   Help

Settings | Status | Alarms | Measure & Actuate | Service

Settings	Unit	Value
lee side vent position minimum: ViP	%	10
lee side vent position maximum: ViP	%	100
lee side vent position humidity: ViP	%	8.8
lee side control windinfluence: ViP	%	50
lee side influence moderate - large ventilate: ViP	%	50
lee side control: P-band selection		automatic

Press F1 for help

Task 13. Personalise your user interface

1. Adapt the setting list like the example above
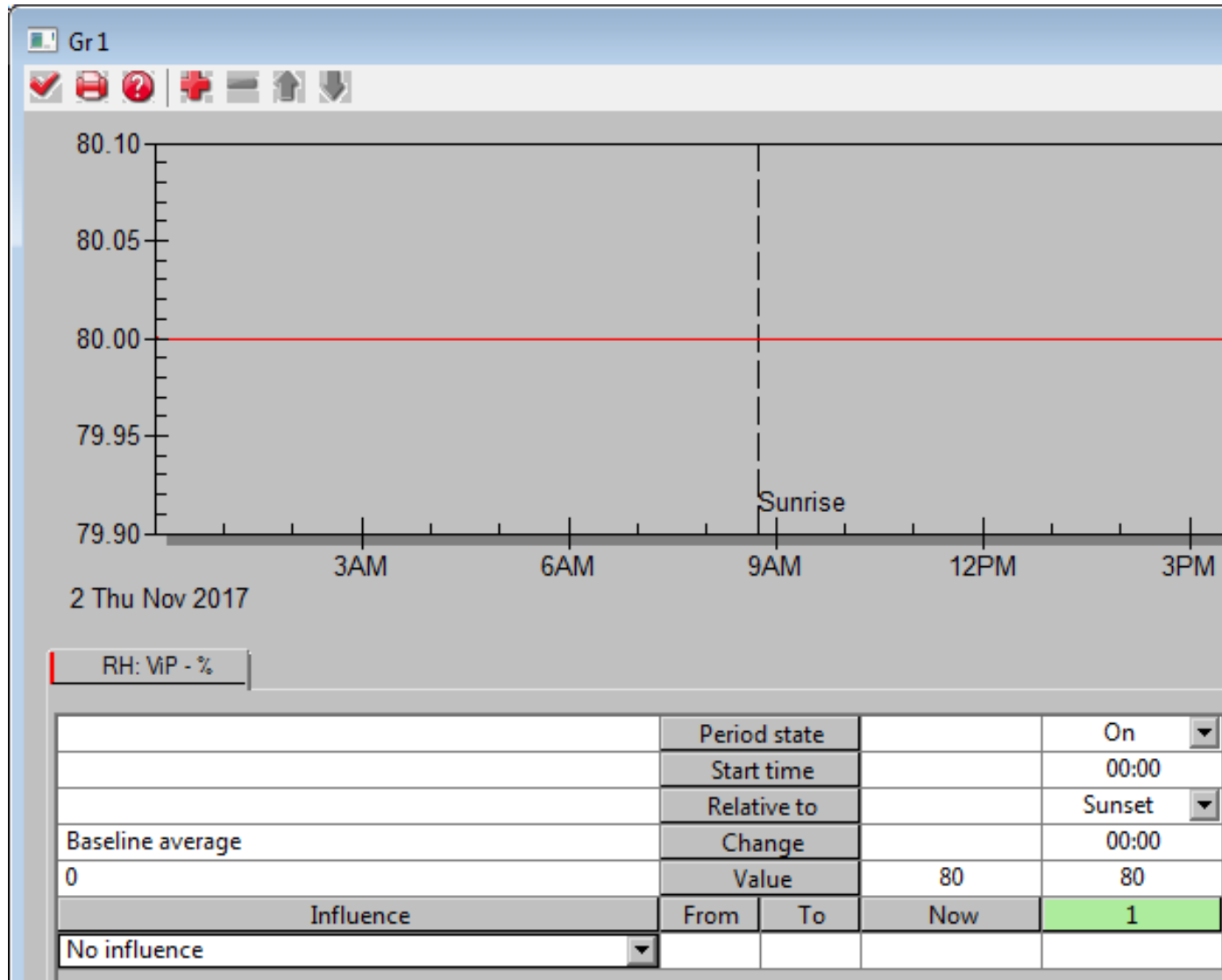
Task 14. Adapt the unique powerful graphical setpoints (ViPs)

1. The "basic" setpoint for RH is like the example above

lee side vent position humidity: ViP - %

	Period state			On ▼	
	Start time			00:01	
	Relative to			Clock ▼	
Baseline average	Change			00:00	
0.0	Value		8.8	0.0	
Influence	From	To	Now	1	
ventilation: deviation RH average - ViP - % ▼	0	5	8.8	10.0	
No influence ▼					
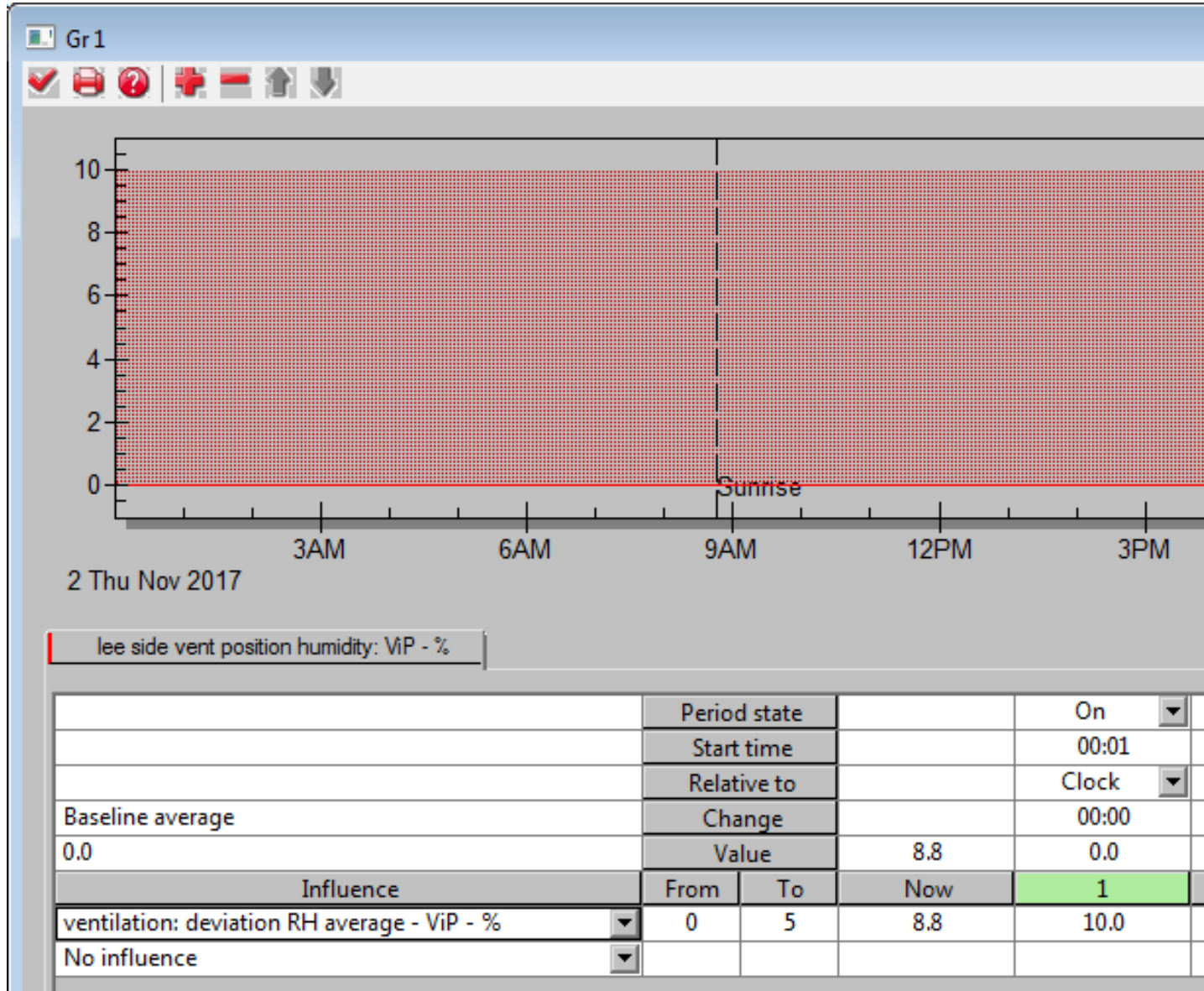
Task 15. Adapt the unique powerful graphical setpoints (ViPs)

1. Select and open the setpoint "lee side vent position humidity"

2. Change the setpoint until you get the same picture as the example above

3. What is the "vent position humidity"when the measured RH is:

   a. 79 %   …….%

   b. 80 %   …….%

   c. 81 %   …….%

   d. 82 %   …….%

   e. 83 %   …….%

   f. 84 %   …….%

   g. 85 %   …….%

   h. 86 %   …….%

Maximum Water Vapour Concentration

in grams per m³ at 1000 mbar

Temp	Relative Humidity										
	100%	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%
0	4.8	4.6	4.4	4.1	3.9	3.6	3.4	3.2	2.9	2.7	2.4
1	5.2	4.9	4.7	4.4	4.2	3.9	3.6	3.4	3.1	2.9	2.6
2	5.6	5.3	5.0	4.7	4.4	4.2	3.9	3.6	3.3	3.1	2.8
3	6.0	5.7	5.4	5.1	4.8	4.5	4.2	3.9	3.6	3.3	3.0
4	6.4	6.0	5.7	5.4	5.1	4.8	4.5	4.1	3.8	3.5	3.2
5	6.8	6.5	6.1	5.8	5.4	5.1	4.8	4.4	4.1	3.7	3.4
6	7.3	6.9	6.5	6.2	5.8	5.5	5.1	4.7	4.4	4.0	3.6
7	7.8	7.4	7.0	6.6	6.2	5.8	5.4	5.0	4.7	4.3	3.9
8	8.3	7.9	7.5	7.0	6.6	6.2	5.8	5.4	5.0	4.6	4.1
9	8.8	8.4	7.9	7.5	7.1	6.6	6.2	5.7	5.3	4.9	4.4
10	9.4	8.9	8.5	8.0	7.5	7.1	6.6	6.1	5.6	5.2	4.7
11	10.0	9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0
12	10.7	10.1	9.6	9.1	8.5	8.0	7.5	6.9	6.4	5.9	5.3
13	11.4	10.8	10.2	9.7	9.1	8.5	8.0	7.4	6.8	6.3	5.7
14	12.1	11.5	10.9	10.3	9.7	9.1	8.5	7.9	7.3	6.7	6.0
15	12.9	12.2	11.6	10.9	10.3	9.6	9.0	8.4	7.7	7.1	6.4
16	13.7	13.0	12.3	11.6	10.9	10.2	9.6	8.9	8.2	7.5	6.8
17	14.5	13.8	13.1	12.3	11.6	10.9	10.2	9.4	8.7	8.0	7.3
18	15.4	14.6	13.9	13.1	12.3	11.6	10.8	10.0	9.2	8.5	7.7
19	16.3	15.5	14.7	13.9	13.1	12.3	11.4	10.7	9.8	9.0	8.2
20	17.3	16.4	15.6	14.7	13.9	13.0	12.1	11.3	10.4	9.5	8.7
21	18.4	17.5	16.5	15.6	14.7	13.8	12.9	11.9	11.0	10.1	9.2
22	19.5	18.5	17.5	16.5	15.6	14.6	13.6	12.7	11.7	10.7	9.7
23	20.6	19.6	18.6	17.5	16.5	15.5	14.4	13.4	12.4	11.3	10.3
24	21.8	20.7	19.6	18.6	17.5	16.4	15.3	14.2	13.1	12.0	10.9
25	23.1	21.9	20.8	19.6	18.5	17.3	16.2	15.0	13.9	12.7	11.5
26	24.4	23.2	22.0	20.8	19.5	18.3	17.1	15.9	14.7	13.4	12.2
27	25.8	24.5	23.2	21.9	20.7	19.4	18.1	16.8	15.5	14.2	12.9
28	27.3	25.9	24.6	23.2	21.8	20.5	19.1	17.7	16.4	15.0	13.6
29	28.8	27.4	25.9	24.5	23.1	21.6	20.2	18.7	17.3	15.9	14.4
30	30.4	28.9	27.4	25.9	24.3	22.8	21.3	19.8	18.3	16.7	15.2
31	32.1	30.5	28.9	27.3	25.7	24.1	22.5	20.9	19.3	17.7	16.1
32	33.9	32.2	30.5	28.8	27.1	25.4	23.7	22.0	20.3	18.6	16.9
33	35.7	33.9	32.2	30.4	28.6	26.8	25.0	23.2	21.4	19.6	17.9
34	37.7	38.8	33.9	32.0	30.1	28.2	26.4	24.5	22.6	20.7	18.8
35	39.7	37.7	35.7	33.7	31.7	29.8	27.8	25.8	23.8	21.8	19.8
36	41.8	39.7	37.6	35.5	33.4	31.3	29.3	27.2	25.1	23.0	20.9
37	44.0	41.8	39.6	37.4	35.2	33.0	30.8	28.8	26.4	24.2	22.0
38	46.3	44.0	41.7	39.4	37.0	34.7	32.4	30.1	27.8	25.5	23.2
39	48.7	46.3	43.8	41.4	39.0	36.5	34.1	31.7	29.2	26.8	24.4

Task 16. Humidity

1. What is the maximum humidity at 14 °C? ……. g/m3

2. What is the absolute humidity at 14 °C and RH at 80%? ……. g/m3

3. What is the humidity deficit in that situation? ……. g/m3

Maximum Water Vapour Concentration

in grams per m³ at 1000 mbar

Temp	Relative Humidity										
	100%	95%	90%	85%	80%	75%	70%	65%	60%	55%	50%
0	4.8	4.6	4.4	4.1	3.9	3.6	3.4	3.2	2.9	2.7	2.4
1	5.2	4.9	4.7	4.4	4.2	3.9	3.6	3.4	3.1	2.9	2.6
2	5.6	5.3	5.0	4.7	4.4	4.2	3.9	3.6	3.3	3.1	2.8
3	6.0	5.7	5.4	5.1	4.8	4.5	4.2	3.9	3.6	3.3	3.0
4	6.4	6.0	5.7	5.4	5.1	4.8	4.5	4.1	3.8	3.5	3.2
5	6.8	6.5	6.1	5.8	5.4	5.1	4.8	4.4	4.1	3.7	3.4
6	7.3	6.9	6.5	6.2	5.8	5.5	5.1	4.7	4.4	4.0	3.6
7	7.8	7.4	7.0	6.6	6.2	5.8	5.4	5.0	4.7	4.3	3.9
8	8.3	7.9	7.5	7.0	6.6	6.2	5.8	5.4	5.0	4.6	4.1
9	8.8	8.4	7.9	7.5	7.1	6.6	6.2	5.7	5.3	4.9	4.4
10	9.4	8.9	8.5	8.0	7.5	7.1	6.6	6.1	5.6	5.2	4.7
11	10.0	9.5	9.0	8.5	8.0	7.5	7.0	6.5	6.0	5.5	5.0
12	10.7	10.1	9.6	9.1	8.5	8.0	7.5	6.9	6.4	5.9	5.3
13	11.4	10.8	10.2	9.7	9.1	8.5	8.0	7.4	6.8	6.3	5.7
14	12.1	11.5	10.9	10.3	9.7	9.1	8.5	7.9	7.3	6.7	6.0
15	12.9	12.2	11.6	10.9	10.3	9.6	9.0	8.4	7.7	7.1	6.4
16	13.7	13.0	12.3	11.6	10.9	10.2	9.6	8.9	8.2	7.5	6.8
17	14.5	13.8	13.1	12.3	11.6	10.9	10.2	9.4	8.7	8.0	7.3
18	15.4	14.6	13.9	13.1	12.3	11.6	10.8	10.0	9.2	8.5	7.7
19	16.3	15.5	14.7	13.9	13.1	12.3	11.4	10.7	9.8	9.0	8.2
20	17.3	16.4	15.6	14.7	13.9	13.0	12.1	11.3	10.4	9.5	8.7
21	18.4	17.5	16.5	15.6	14.7	13.8	12.9	11.9	11.0	10.1	9.2
22	19.5	18.5	17.5	16.5	15.6	14.6	13.6	12.7	11.7	10.7	9.7
23	20.6	19.6	18.6	17.5	16.5	15.5	14.4	13.4	12.4	11.3	10.3
24	21.8	20.7	19.6	18.6	17.5	16.4	15.3	14.2	13.1	12.0	10.9
25	23.1	21.9	20.8	19.6	18.5	17.3	16.2	15.0	13.9	12.7	11.5
26	24.4	23.2	22.0	20.8	19.5	18.3	17.1	15.9	14.7	13.4	12.2
27	25.8	24.5	23.2	21.9	20.7	19.4	18.1	16.8	15.5	14.2	12.9
28	27.3	25.9	24.6	23.2	21.8	20.5	19.1	17.7	16.4	15.0	13.6
29	28.8	27.4	25.9	24.5	23.1	21.6	20.2	18.7	17.3	15.9	14.4
30	30.4	28.9	27.4	25.9	24.3	22.8	21.3	19.8	18.3	16.7	15.2
31	32.1	30.5	28.9	27.3	25.7	24.1	22.5	20.9	19.3	17.7	16.1
32	33.9	32.2	30.5	28.8	27.1	25.4	23.7	22.0	20.3	18.6	16.9
33	35.7	33.9	32.2	30.4	28.6	26.8	25.0	23.2	21.4	19.6	17.9
34	37.7	38.8	33.9	32.0	30.1	28.2	26.4	24.5	22.6	20.7	18.8
35	39.7	37.7	35.7	33.7	31.7	29.8	27.8	25.8	23.8	21.8	19.8
36	41.8	39.7	37.6	35.5	33.4	31.3	29.3	27.2	25.1	23.0	20.9
37	44.0	41.8	39.6	37.4	35.2	33.0	30.8	28.8	26.4	24.2	22.0
38	46.3	44.0	41.7	39.4	37.0	34.7	32.4	30.1	27.8	25.5	23.2
39	48.7	46.3	43.8	41.4	39.0	36.5	34.1	31.7	29.2	26.8	24.4

Task 17. Dehumidify

1. Outside conditions: 14 °C, 80% RH

   Inside condition: 18 °C, 90% RH

   Can we use the vents to dehumidify? Yes/No

2. Outside conditions: 14 °C, 100% RH

   Inside condition: 18 °C, 90% RH

   Can we use the vents to dehumidify? Yes/No

3. Outside conditions: 17 °C, 100% RH

   Inside condition: 18 °C, 90% RH

   Can we use the vents to dehumidify? Yes/No

Humidity deficit table (grams of water per m³ air)

Temperature °C	RH% 95	90	85	80	75	70	65	60	55	50	45	40	35	30
15	0,6	1,3	1,9	2,6	3,2	3,9	4,5	5,2	5,8	6,5	7,1	7,7	8,4	9
16	0,7	1,4	2,1	2,7	3,4	4,1	4,8	5,5	6,2	6,9	7,5	8,2	8,9	9,6
17	0,7	1,5	2,2	2,9	3,6	4,4	5,1	5,8	6,5	7,3	8	8,7	9,4	10,2
18	0,8	1,5	2,3	3,1	3,9	4,6	5,4	6,2	6,9	7,7	8,5	9,2	10	10,8
19	0,8	1,6	2,4	3,3	4,1	4,9	5,7	6,5	7,3	8,2	9	9,8	10,6	11,4
20	0,9	1,7	2,6	3,5	4,3	5,2	6,1	6,9	7,8	8,7	9,5	10,4	11,2	12,1
21	0,9	1,8	2,8	3,7	4,6	5,5	6,4	7,4	8,3	9,2	10,1	11	12	12,9
22	1	2	2,9	3,9	4,9	5,9	6,8	7,8	8,8	9,8	10,7	11,7	12,7	13,7
23	1	2,1	3,1	4,1	5,2	6,2	7,2	8,2	9,3	10,3	11,3	12,4	13,4	14,4
24	1,1	2,2	3,3	4,4	5,5	6,5	7,6	8,7	9,8	10,9	12	13,1	14,2	15,3
25	1,2	2,3	3,5	4,6	5,8	6,9	8,1	9,2	10,4	11,6	12,7	13,9	15	16,2
26	1,2	2,4	3,7	4,9	6,1	7,3	8,5	9,8	11	12,2	13,4	14,6	15,9	17,1
27	1,3	2,6	3,9	5,2	6,5	7,7	9	10,3	11,6	12,9	14,2	15,5	16,8	18,1
28	1,4	2,7	4,1	5,5	6,8	8,2	9,6	10,9	12,3	13,7	15	16,4	17,7	19,1
29	1,4	2,9	4,3	5,8	7,2	8,6	10,1	11,5	13	14,4	15,8	17,3	18,7	20,2
30	1,5	3	4,6	6,1	7,6	9,1	10,6	12,2	13,7	15,2	16,7	18,2	19,8	21,3
31	1,6	3,2	4,8	6,4	8	9,6	11,2	12,8	14,4	16,1	17,7	19,3	20,9	22,5
32	1,7	3,4	5,1	6,8	8,5	10,2	11,9	13,6	15,3	17	18,6	20,3	22	23,7
33	1,8	3,6	5,4	7,1	8,9	10,7	12,5	14,3	16,1	17,9	19,6	21,4	23,2	25
34	1,9	3,8	5,7	7,5	9,4	11,3	13,2	15,1	17	18,9	20,7	22,6	24,5	26,4
35	2	4	6	7,9	9,9	11,9	13,9	15,9	17,9	19,9	21,8	23,8	25,8	27,8
36	2,1	4,2	6,3	8,4	10,5	12,5	14,6	16,7	18,8	20,9	23	25,1	27,2	29,3
37	2,2	4,4	6,6	8,8	11	13,2	15,4	17,6	19,8	22	24,2	26,4	28,6	30,8
38	2,3	4,6	6,9	9,3	11,6	13,9	16,2	18,5	20,8	23,2	25,5	27,8	30,1	32,4
39	2,4	4,9	7,3	9,7	12,2	14,6	17	19,5	21,9	24,4	26,8	29,2	31,7	34,1
40	2,6	5,1	7,7	10,2	12,8	15,4	17,9	20,5	23	25,6	28,2	30,7	33,3	35,8

Task 18. Humidity deficit

1. What is a "perfect" RH when the temperature is 20 °C? ……. %

2. What is a "perfect" HD when the temperature is 20 °C? ……. %

Task 19. Personalise your user interface

1. Create the folder "20 Irrigation" just like the example above

2. Drag and drop the definitions from the Hoogendoorn explorer to your own explorer

3. Create the worksheet "20 Irrigation" just like the example above

4. Drag and drop the definitions from your own explorer to the worksheet

My iSii - Recipes - Tomaten zomer

File　Edit　View　Options　Help

Settings | Status | Alarms | Measure & Actuate | Service

Settings	Unit	Value
unit phase 2 supply		cc/plant
phase 2 supply amount: ViP		100.0
EC control EC value: ViP	EC	1.5
pH control: pH value	pH	5.5
interval: ViP	m	15
delay time: ViP	m	45
type of start recipe		daily repeating
start- en stopconditions		Selection
time: start relative to		clock
time: start time	h:m	08:00
time: stop relative to		clock
time: stop time	h:m	16:00
radiation: start relative to		clock
radiation: start time	h:m	08:30
radiation: stop relative to		sunset
radiation: stop time	h:m	-04:30
radiation sum start: ViP	J/cm^2	220
radiation threshold start: ViP	W/m^2	150

Press F1 for help
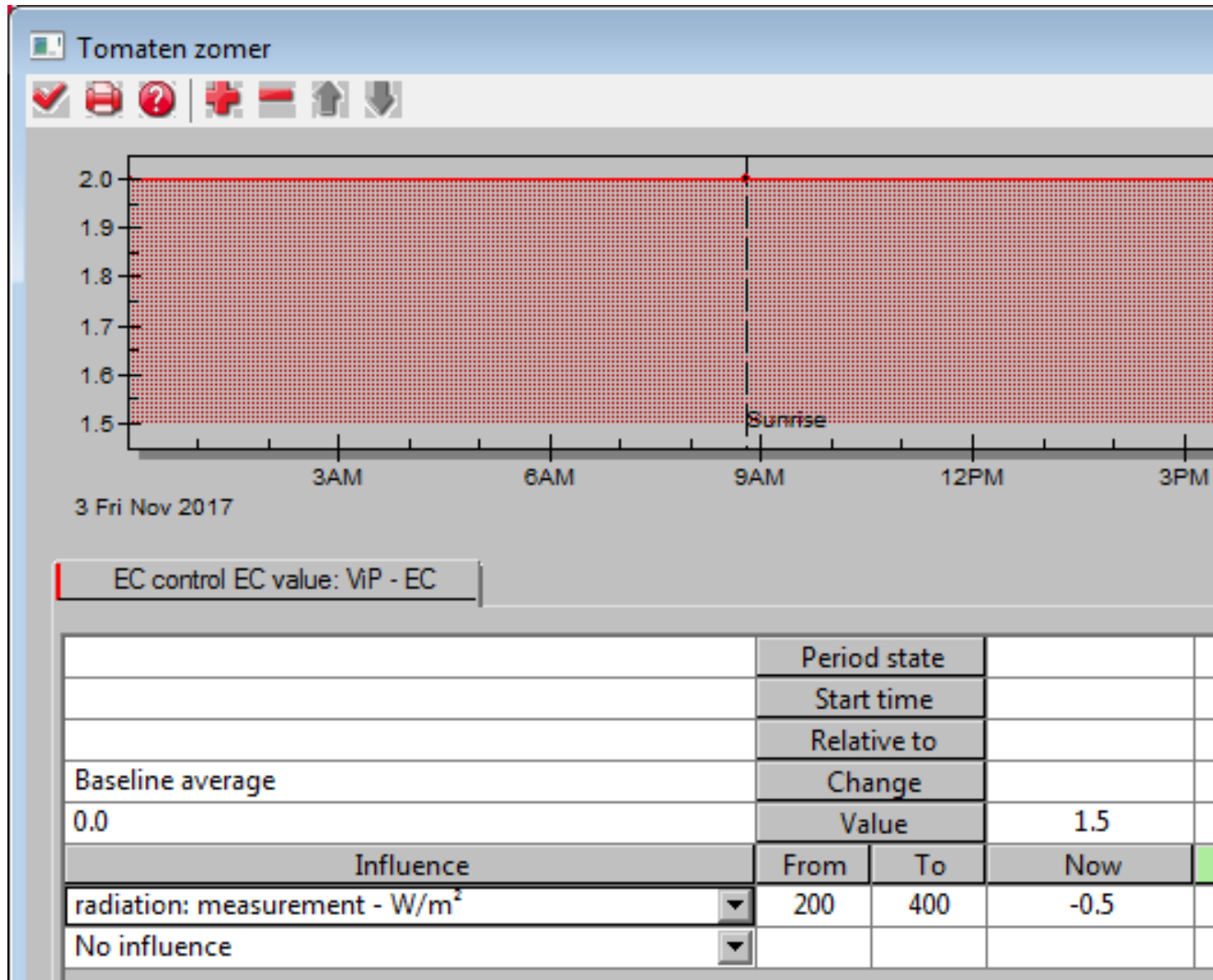
Task 20. Personalise a setting list

1. Adapt the setting list like the example above

2. What is the minimum time between 2 drip cycles? …… minutes

3. What is the maximum time between 2 drip cycles? …… minutes

4. At what radiation sum will a drip cycle start? …… J/cm2

Tomaten zomer

3 Fri Nov 2017

radiation sum start: ViP - J/cm²

			On ▼
	Period state		On ▼
	Start time		00:00
	Relative to		Sunrise ▼
Baseline average	Change		00:00
0	Value	220	220
Influence	From	To	Now	1
wind speed: measurement - m/s ▼	5.0	10.0	0	-40
No influence ▼				
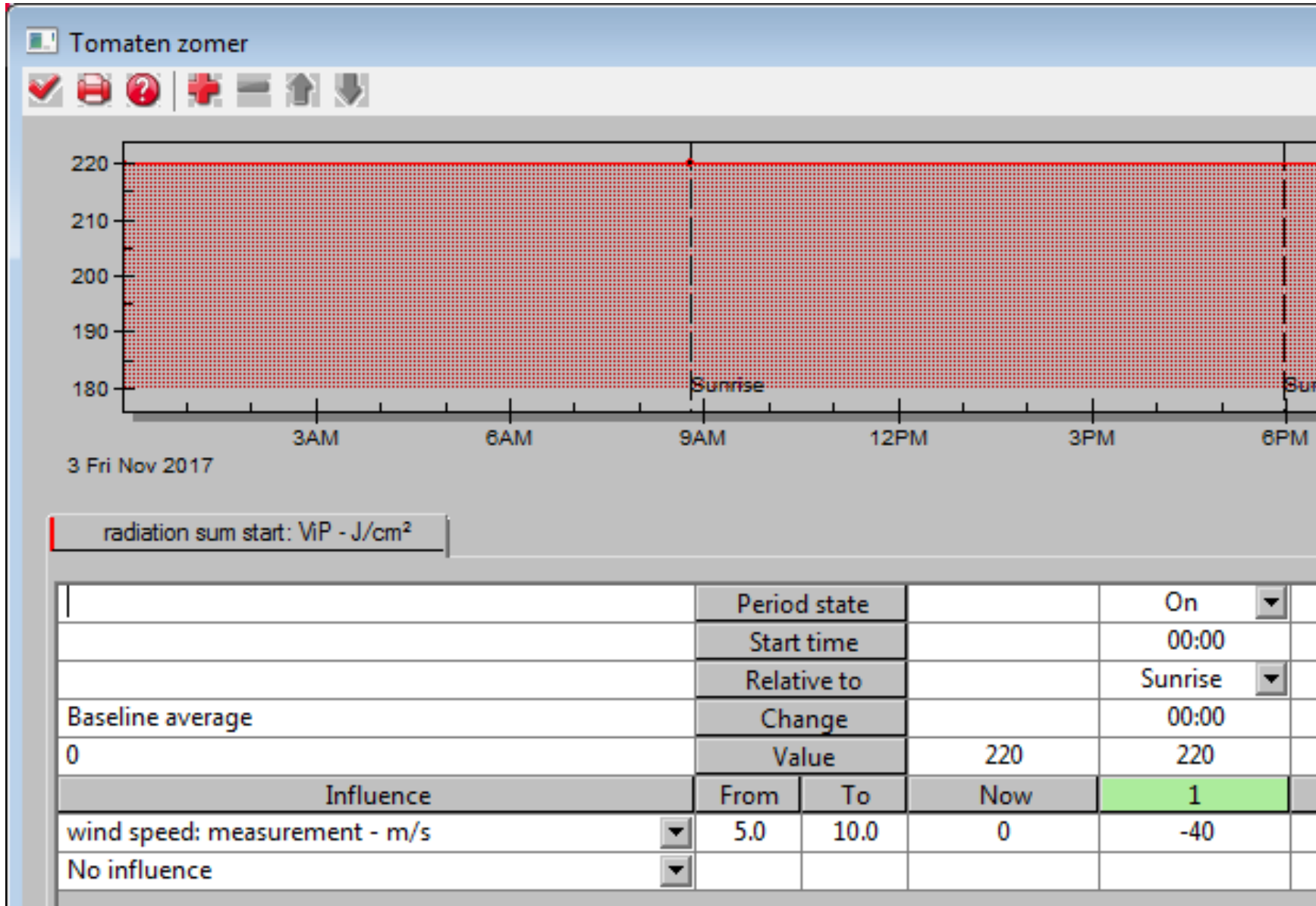
Task 21. Adapt the unique powerful graphical setpoints (ViPs)

1. Select and open the setpoint "radiation sum start"

2. Change the setpoint until you get the same picture as the example above

3. What is the goal of the influence "wind speed" in this setpoint?

   …………………………………..

4. What is the "radiation sum start" when the measured wind speed is:

   a. 4 m/s …… J/cm2

   b. 5 m/s …… J/cm2

   c. 6 m/s …… J/cm2

   d. 7 m/s …… J/cm2

   e. 8 m/s …… J/cm2

   f. 9 m/s …… J/cm2

   g. 10 m/s…… J/cm2

   h. 11 m/s…… J/cm2

Tomaten zomer

	Period state	
	Start time	
	Relative to	
Baseline average	Change	
0.0	Value	1.5

Influence	From	To	Now	
radiation: measurement - W/m²	200	400	-0.5	
No influence				

Task 22. Adapt the unique powerful graphical setpoints (ViPs)

1. Select and open the setpoint "EC control EC value"

2. Change the setpoint until you get the same picture as the example above

3. What is the goal of the influence "radiation" in this setpoint?

   …………………………………..

4. What is the "EC value" when the radiation measurement is:

   a. 190 W/m2   …… EC

   b. 200 W/m2   …… EC

   c. 300 W/m2   …… EC

   d. 400 W/m2   …… EC

   e. 410 W/m2   …… EC

My iSii - Pump - Gr 1

File   Edit   View   Options   Help

Settings | Status | Alarms | Measure & Actuate | Service

Settings	Unit	Value
pump: stop / continue		
pump: pause time	h:m	00:00

Press F1 for help

Task 23. Personalise a setting list

1. Adapt the setting list like the example above

2. The fertilizer tanks are nearly empty. How can you pause the current irrigation?

   ………………………

   ………………………

3. The pump is stopped during a running irrigation because of an EC alarm. What are you going to do now?

   ………………………

   ………………………

   ………………………

Status	Description	Group	Start time ▼	End time	Deactivator	Signal
⊗	general: time difference noted: clock control is provided	Gr 1	11/3/2017 8:17:43 AM	11/3/2017 8:17:53 AM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	11/2/2017 8:02:09 PM	11/2/2017 8:02:19 PM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	11/2/2017 6:21:15 PM	11/2/2017 6:21:25 PM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	11/2/2017 2:21:50 PM	11/2/2017 2:22:00 PM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	11/2/2017 8:00:26 AM	11/2/2017 8:00:36 AM		Signal: 1
⊗	general: operation: no communication	Gr 1	11/1/2017 10:00:36 PM	11/2/2017 8:01:04 AM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	11/1/2017 10:59:34 AM	11/1/2017 10:59:44 AM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	10/31/2017 3:53:29 PM	10/31/2017 3:53:39 PM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	10/31/2017 2:57:25 PM	10/31/2017 2:57:35 PM		Signal: 1
⊗	general: time difference noted: clock control is provided	Gr 1	10/31/2017 1:24:20 PM	10/31/2017 1:24:30 PM		Signal: 1
🔑⊗	water: crop section with valves from different pumps	Gr 1	10/26/2017 10:15:43 AM			Signal: 2
🔑⊗	water: crop section: no valve connected	Gr 2	10/26/2017 10:15:43 AM			Signal: 2
🔑⊗	water: crop section: no valve connected	Gr 3	10/26/2017 10:15:43 AM			Signal: 2
🔑⊗	water: crop section: no valve connected	Gr 4	10/26/2017 10:15:43 AM			Signal: 2
🔑⊗	Bus 1: communication error control station - EtherCAN	30} EtherCAN	10/26/2017 7:09:37 AM			
🔑⊗	Bus 2: communication error control station - EtherCAN	13 Veldbus controler	10/26/2017 7:09:37 AM			Signal: 1
🔑⊗	water: level tray: maximum water level	Gr 2	10/26/2017 7:08:58 AM			Signal: 1
🔑⊗	water: pH too high	Gr 1	10/26/2017 7:08:37 AM			Signal: 2

Total: 18

Task 24.   Alarms

1. Open the Total alarm survey

2. What is the difference between "grey lines" and "white lines"

    …………………………

    …………………………

    …………………………

3. How many signals can be activated? …………..

4. What is a "deactivator"?

    …………………………

    …………………………

    …………………………

Alarms view : My iSii

View　Mark　Help

Status	Description	Group	Start time	End time	Deactivator	Signal
⊗	plant condensation: no discharge	Gr 4 Phalaenopsis	4/1/2016 3:34:11 PM	4/1/2016 2:00:56 PM	ERS (restart)	Signal: 1
⊗	plant condensation: no discharge	Gr 4 Phalaenopsis	4/1/2016 3:01:00 PM	4/1/2016 2:00:56 PM	ERS (restart)	Signal: 1
🔑⊗	aspirator: RH measurement wrong / wet ball dry	MB zone 1	4/1/2016 2:37:50 PM			Signal: 1
🔑⊗	plant condensation: no discharge	Gr 1 Tomato	4/1/2016 2:37:20 PM		training-en	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:34:11 PM	4/1/2016 2:00:56 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:29:35 PM	4/1/2016 2:02:43 PM	ERS (restart)	Signal: 1
🔑⊗	climate: greenhouse temperature too high	Gr 2 Sweet pepper	4/1/2016 2:26:49 PM			Signal: 1
🔑⊗	climate: greenhouse temperature too high	Gr 4 Phaleenopsis	4/1/2016 2:26:49 PM			Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:03:44 PM	4/1/2016 1:02:09 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:02:50 PM	4/1/2016 2:28:35 PM	ERS (restart)	Signal: 1
⊗	plant condensation: no discharge	Gr 4 Phalaenopsis	4/1/2016 2:02:45 PM	4/1/2016 1:01:42 PM	training-nl	Signal: 1
🔑⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:02:20 PM		training-en	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:02:06 PM	4/1/2016 2:07:05 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:02:02 PM	4/1/2016 2:02:02 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:02:01 PM	4/1/2016 2:00:56 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:01:01 PM	4/1/2016 2:00:56 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:01:01 PM	4/1/2016 2:00:55 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 2:01:00 PM	4/1/2016 2:00:56 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 1:03:13 PM	4/1/2016 1:01:50 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 1:02:55 PM	4/1/2016 1:01:41 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 1:02:50 PM	4/1/2016 1:01:52 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 1:02:46 PM	4/1/2016 2:01:16 PM	ERS (restart)	Signal: 1
⊗	plant condensation: faulty connection	Gr 4 Phalaenopsis	4/1/2016 1:02:45 PM	4/1/2016 1:01:42 PM	ERS (restart)	Signal: 1

Total: 23

Task 25.   Alarms

1. Open the Total alarm survey

2. Deselect the General alarms, the Irrigation alarms and the Energy alarms

3. Mark the plant condensation alarms as viewed

4. Why do we have an RH measurement alarm (use the help screens)?

   ………………………

5. How can we solve this alarm?

   ………………………

   ……………………

6. Why do we have the temperature alarms (use the help screens)?

   ………………………

7. How can we solve these alarms?

   ………………………

   ……………………

Task 26.   Alarms

1. Add the setting list "Aspirators" to the folder "10 Climate"

2. Drag and drop the setting list to the worksheet "10 Climate"

3. Click on the tab "Alarms"

4. Select Alarm signal 5

5. Change the delay time alarm to 01:00
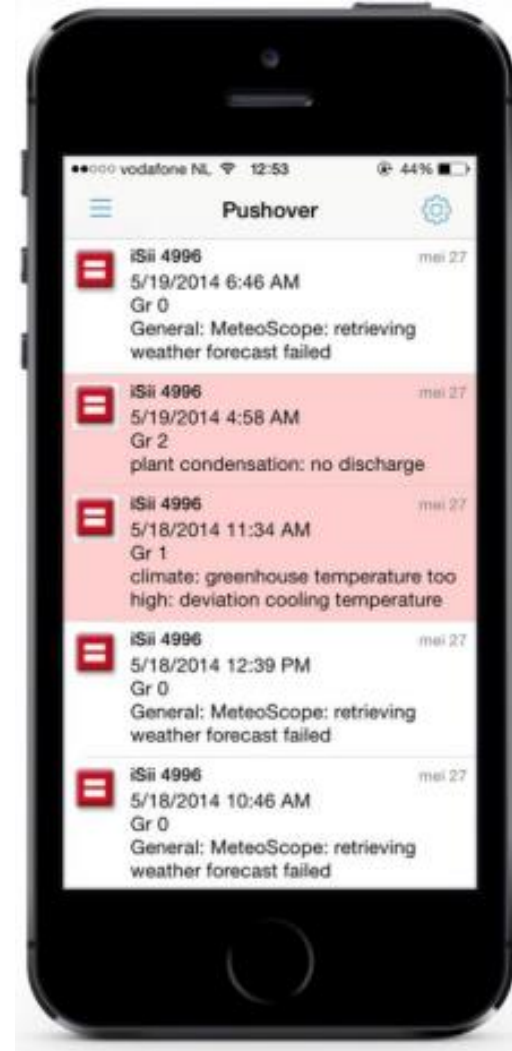
Task 27.　　Alarms

1. When there is an alarm you have to solve it. Give the right priority of your actions:

☐ Reset the OctAlarm

☐ Solve the alarm

☐ First take a coffee

☐ Switch off the buzzer with the alarm box

☐ Switch off the lamp

☐ Open the alarm survey

☐ Mark the alarm as viewed