iCon

Cooling (Advanced Setup)

Ver 18.06.00

Title Page

1. Cooling

Overview:

Any sensor within the system has the ability to control both the heating & cooling of a zone.

The system must be informed that cooling is required. This is achieved by setting parameter 3 in the Environmental settings.

Secondly, each zone must be allocated a Deadband (DB) . This is to ensure heating and cooling do not conflict. This is achieved by setting Deadband value in the Zone Profile.

The system can be used to activate passive cooling (Zone Temp above SP+DB) or activate cooling (Zone Temp above SP+DB+F1/2/3)

Cooling Operation

Cooling is activated when the zone temperature goes above SP + DB,

Cooling can either be enable / disabled at the sensor – see sensor section below.

If two levels of cooling devices are installed e.g. Passive Cooling & Active Cooling, the system can be configured in the following manor.

Passive Cooling
Activated above Zone SP + DB

Active Cooling
Activated above Zone SP + DB + F1
Activated above Zone SP + DB + F2
Activated above Zone SP + DB + F3
F1, F2, F3 can be used to bring in more devices or increase fan speed.

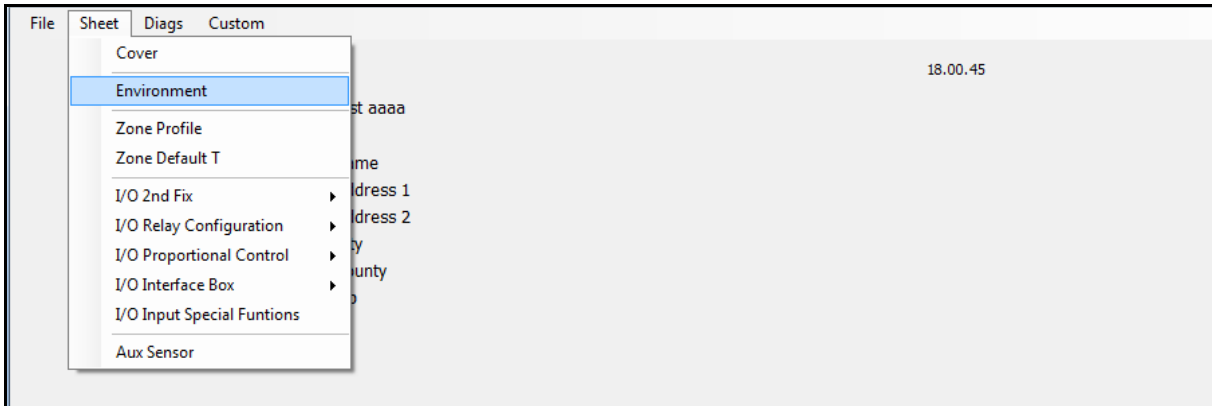## Configuring Cooling on the system - Steps a & b & c

Comment:
The system must be informed that cooling is required. This is achieved by setting parameter 3 in the Environmental settings.
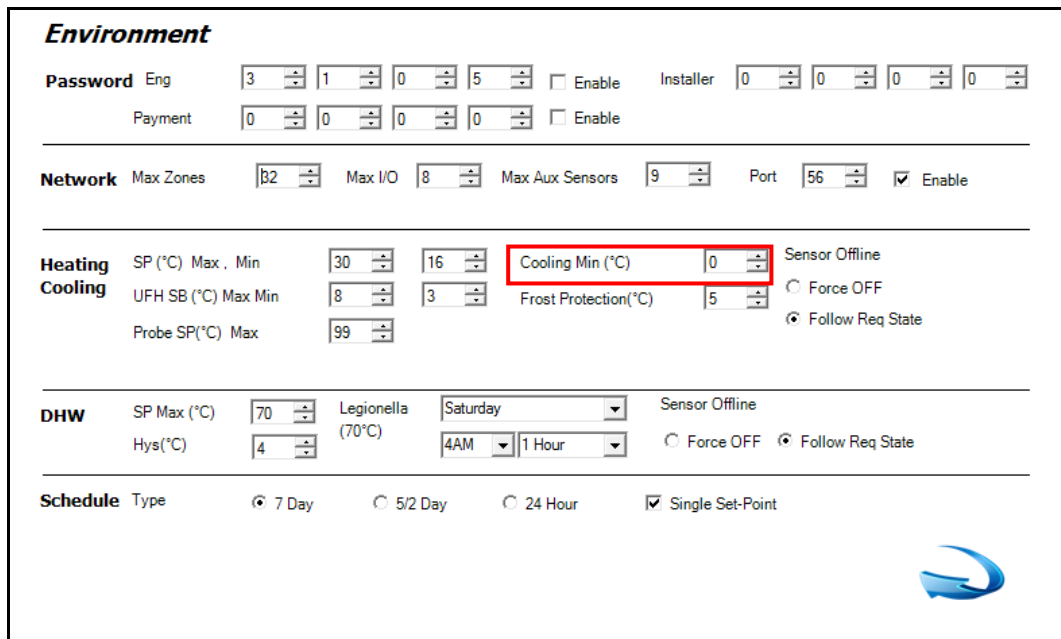
a) Overall System Cooling Setting - Environmental setting

Via CM Application

1. Select Environment Under Config. tab

2. **Enter the min cooling cut of point**

Comment:
This Min Cooling valve servers 2 functions;
a) Informs the system, that there is cooling required
   (Sensor now display an additional screen - cooling enabled)
b) Set the min cooling point, below which cooling will not be allowed.
   (Even if the occupant adjust their zone SP very low and the zone temperature reaches above SP+DB (Set Point and Dead Band), cooling will not activate if it is required below this min valve)
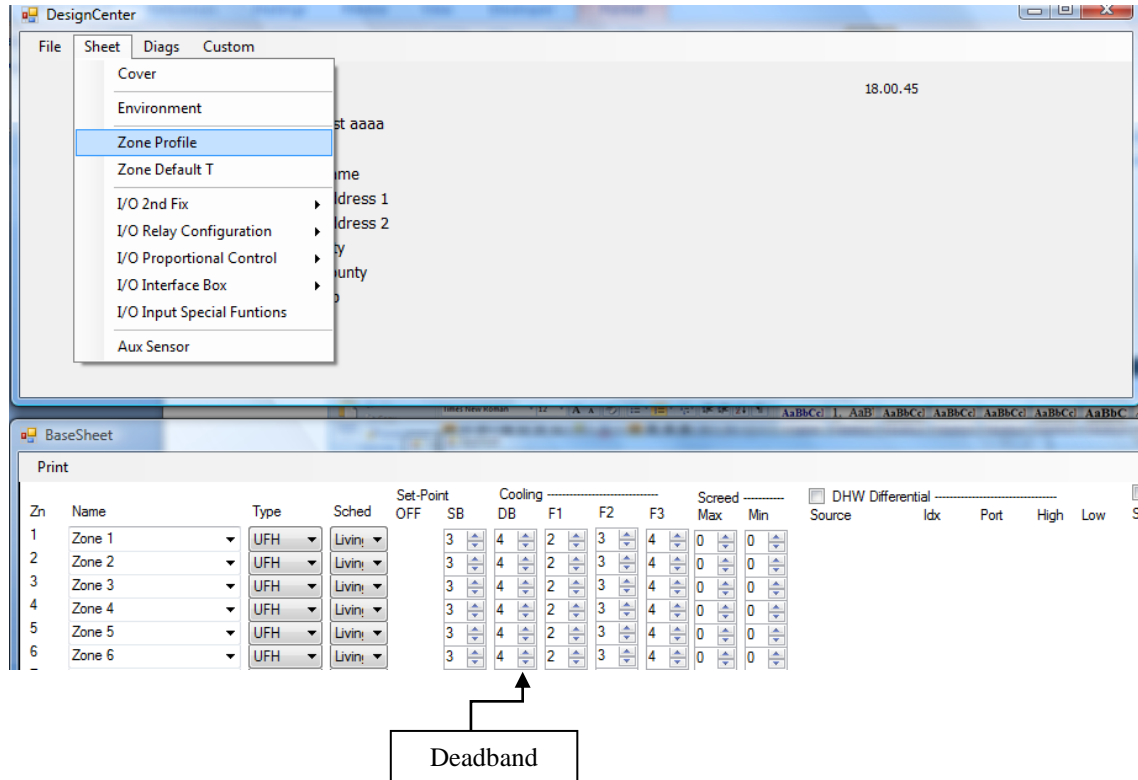
b) Setting the individual zone cooling activation threshold level – Deadband

Comment:

Each zone has the ability to have a separate Deadband Value
This Deadband value ensures heating and cooling do not conflict.

Via PC Application
In Zone Profile

Deadband

Note: If DB Set to -1, this zone will ignore cooling
If DB set to "-1": Zone does not allowing cooling
Note Sensor still can say CL , but at console the system will force Sensor Display back to "Sch"

Via Console

➢ Engineering Menu
➢ Zone Set Points

c) <u>Configuring relays:</u>

<u>Comment:</u>
Any relay can be configured to be activated by the following list.

<u>Via CM Application</u>
In CONFIG.

c	Cl	**Zone Air Cooling**

Zone temperature is greater than the Set-Point (SP) plus the A/C Deadband

		Cl Fan 1

Zone Air Cooling Fan 1
Zone temperature is greater than the Set-Point (SP) plus the Deadband plus the Cl Fan 1 Offset

||	Cl Fan 2

Zone Air Cooling Fan 2
Zone temperature is greater than the Set-Point (SP) plus the Deadband plus the Cl Fan 2 Offset

|||	Cl Fan 3

Zone Air Cooling Fan 3
Zone temperature is greater than the Set-Point (SP) plus the Deadband plus the Cl Fan 3 Offset

&	Z-H/C	**Zone Heating & Cooling**

ANY zone calling for heat when **NO** zone is calling for cooling OR, **ANY** zone is calling for cooling.
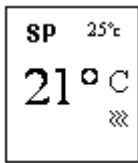
(Note: Cooling has priority)
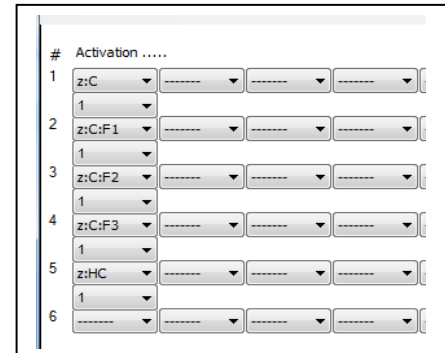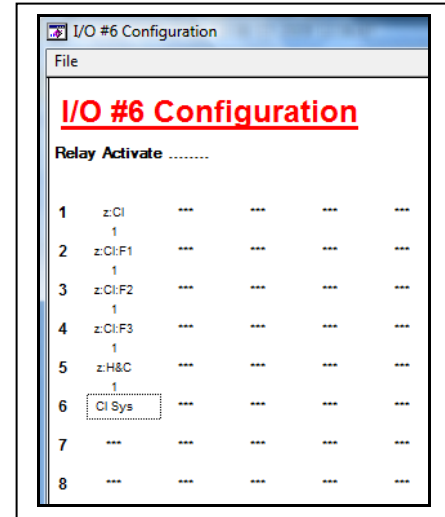
Cooling at Sensor
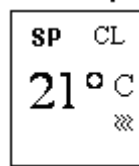
Pressing the Mode key will change the Sensor State from
- ➢ Timer (Heating Only) to
- ➢ Timer (Heating & Cooling – when cooling is enabled at the console by setting to cooling Minimum setting to a value greater than "0") to
- ➢ STOP to
- ➢ DISABLE.

As the mode key is presses the display will appear as follows:
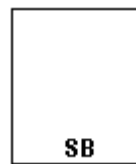
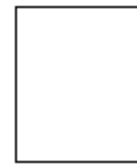| Timer (Heating Only)	Timer (Heating & Cooling)	STOP (Heating in SetBack, Cooling OFF)	DISABLE (Heating in Frost Protection, Cooling OFF)
SP 25°C 21° C	SP CL 21° C	SB	
	"CL" symbol is displayed momentarily.		

Using the Proportional Valve (PV) to manage cooling

Example 1: 0-10v signal controlling FCU (Fan Coil Unit)   using Hottest Zone

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Reference

Source	Hottest Zone
Min	SP+SB
Max	SP+SB+F3

Overview:

The system will scan all the zone for the following criteria

    a) Zones with cooling enabled.

    b) Zones calling for cooling

    c) Zone with the largest ΔT , between [SP+SB] and [Zone Temp]

Typically the system will use the hottest zone, however, if a person in another zone adjust down their Set Point (SP) to a low valve , because they required extra cooling, the system will use this zone as it's reference, because the system will recognise this zone has the larger ΔT , between [SP+SB] and [Zone Temp]