



**iCon**

**Differential  
DHW & Energy Source**

**Touch Screen CC200  
Ver 18.6.1.105**

## Engineering

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Select  
Zone DHW Diff

Other Module need to setup Diff

- ❖ Relay Configuration
- ❖ Aux Sensors
- ❖ Input Config
- ❖ DHW Diff

# Differential : DHW & Energy Source

## Overview

Any DHW zone can have a "Aux Sensor" attached to addition heat source (e.g. Solar Pane , Landlord Plate Heat Exchanger , etc).

If the difference between the [DHW Cylinder and the Heat Source] is Greater Than [Hi ΔT setting] Then Diff Flag is Active

Diff Flag remains active until between the [DHW Cylinder and the Heat Source] is Less Than [Lo ΔT setting]

## Zone DHW Diff

*Zone DHW Differential*

Zn	Name	Source	Idx	Port	High	Low
1	Not a DHW Zone					
2	DHW	Aux_Sensor	1		5	2
3	Not a DHW Zone					
4	Not a DHW Zone					
5	Not a DHW Zone					
6	Not a DHW Zone					
7	Not a DHW Zone					
8	Not a DHW Zone					

1-8

9-16

17-24

25-32

## Relay Configuration

*Relay Configuration* I/O #1

#	Activation	Ena	Ovr
1	Diff 10	SP Ch2 10	
2			
3			
4			
5			
6			
7			
8			

IO #1 x

IO #2 x

IO #3 x

IO #4 x

IO #5 x

IO #6 x

IO #7 x

IO #8 x

Relays: 1-8

Relays: 9-16

## Relay Config

Command in Config List "Diff"

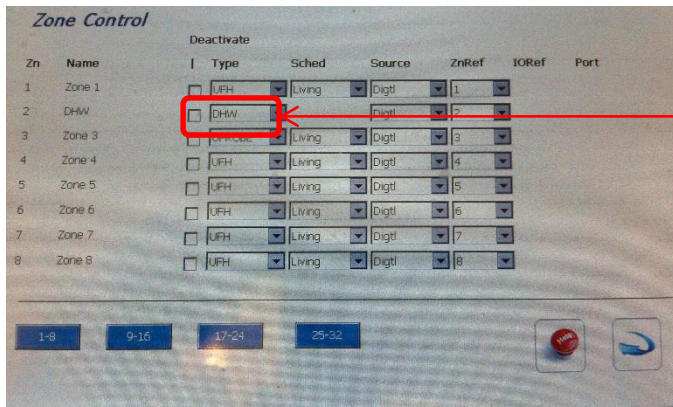
Diff Flag can be use to activate pump , digit on bottom refers to the **Zone No**

Diff 10

- NB:
- Diff ignores the respective zone schedule (Always ON)
  - Always use SPCH2/1 as enable , so zone only heats to required SP.

## Differential : Set Up

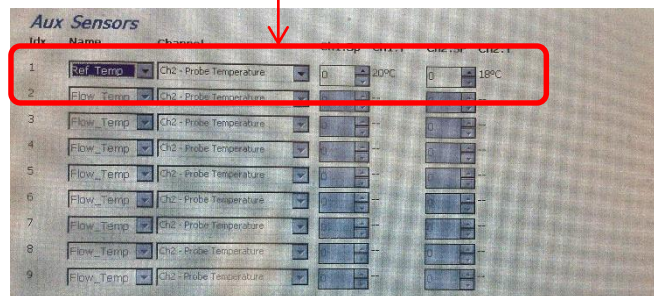
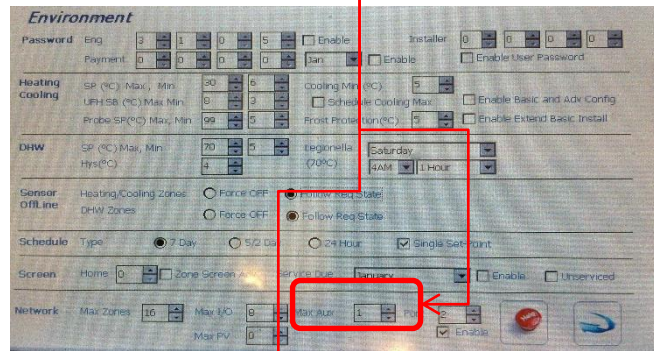
**Step 1:** Assign a DHW Zone e.g. Zone 10



**Step 2:** Assign a Differential Ref sensor i.e. Aux Sensor

- In Environment Tab : Enter Qty of Aux needed i.e.
- Make this Aux sensor a Type : Name: Ref Temp

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  - Make this Aux sensor a Type : Name: Ref Temp



**Step 3** Access “Zone DHW Diff” Tab

- Step 3** Access “Zone DHW Diff” Tab
- Against the DHW zone assign Source as AUX
  - Idx is associated with IDX in aux Sensor Tab
  - High (e.g. 5) Heat DHW is the Ref Temp is above 5 °C above DHW
  - Low (e.g.) Stop heat DHW if Ref Temp fall to within 2 °C above DHW



**Relay Config**  
Command in Config List **“Diff”**  
Diff Flag can be use to activate pump  
digit on bottom refers to the **Zone No**  
NB:  
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➤ Always use SPCH2/1 as enable , so zone only heats to required SP.

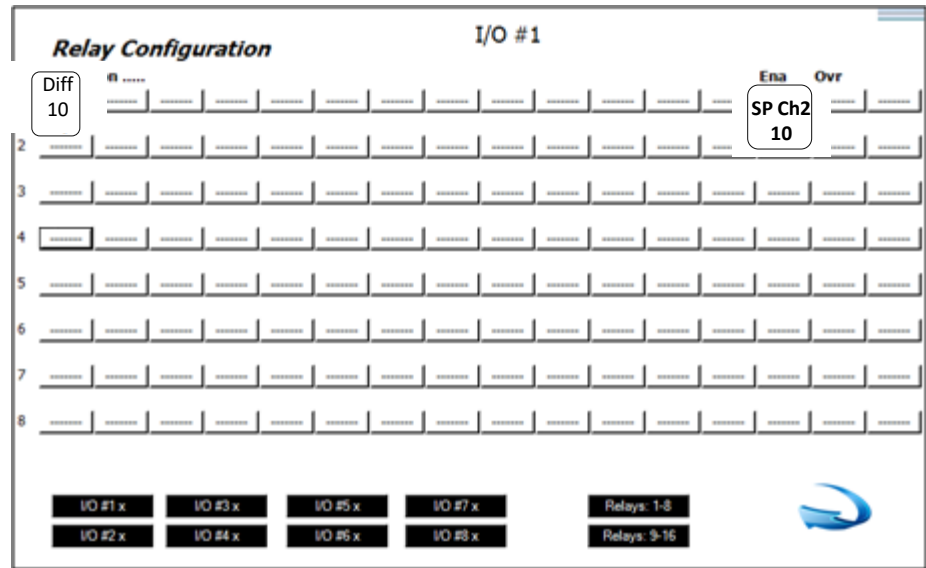
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Command in Config List **“Diff”**  
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Diff Flag can be use to activate pump  
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## Diff – Zone

Application:	Diff switch FCU to heating
Comments:	<ol style="list-style-type: none"><li>1. If Room SP is <math>\Delta T</math>(e.g. 5°C) above same room air temp, switch FCU to cooling</li><li>2. Limit the above operation , if room temp is above a limit e.g. 24°C)</li></ol>
Solution	<p>0-10v LL1 – Cooling (as usual)</p> <p>Switch : Relay x:x (R2:1 Virtual I/O) Activate By Differential between SP &amp; Air</p> <p>0-10v LL2 – Heating (Factoring in Diff user setting)</p>



Diff – Zone  
LL1 – Cooling (as usual)

0-10v LL1 – Cooling (as usual)

Switch : Relay x:x (R2:1 Virtual I/O) Activate By Differential between SP & Air

PV #1 LL: Primary

x./PV #1

x./PV #2

x./PV #3

x./PV #4

x./PV #5

x./PV #6

x./PV #7

x./PV #8

x./PV #9

x./PV #10

x./PV #11

x./PV #12

x./PV #13

x./PV #14

x./PV #15

x./PV #16

Output Max

10

Min

0

Min

20

Max

25

Type

SP + DB

Type

SP + DB + F3

Ref-Src

Zone

Idx

Bathroom

D.Max

255

D.Min

0

Reference

Zone T : 0°C

Interval(s)

20

Switch

Relay

Idx

IO #2

☐ Cutoff Hi Enable

☐ Enable Flow

☐ Cutoff Lo Enable

☐ Enable Dec Pt

☐ Emulate

☐ Nt Low Limit

☐ Cal

☐ Reverse DAC for Cold Water

☒ Primary

☐ Secondary

Init Ht

18.06.01-57 - 2.3

Comeragh Controls  
Intelligent Control Systems

Sheet	0	Title	IO_Pv1_LL1
Ref	Dove House Tech	Client	Alternative Heat
Date	10/08/2018	Contact	()

# Diff – Zone

## Set up Diff

Comments:

Diff between air & SP (Currently Ref is I/O probe or Aux Sensor)  
Diff Hi & Low (If ref Zone air):  
Hi & Low valve would be same = 5

Zone Differential

Zn	Name	Source	Idx	Port	High	Low
1	Zone 1	Zone	Ch 1		5	
2	Zone 2	None				
3	Zone 3	None				
4	Zone 4	None				
5	Zone 5	None				
6	Zone 6	None				
7	Zone 7	None				
8	Zone 8	None				

1-8

9-16

17-24

25-32

Help

Diff – Zone  
Set up LL2

0-10v LL2 – Heating (Factoring in Diff user setting)

**PV #1 LL: Secondary**

x<sub>1</sub>x/PV #1

x<sub>1</sub>x/PV #2

x<sub>1</sub>x/PV #3

x<sub>1</sub>x/PV #4

x<sub>1</sub>x/PV #5

x<sub>1</sub>x/PV #6

x<sub>1</sub>x/PV #7

x<sub>1</sub>x/PV #8

x<sub>1</sub>-/PV #9

x<sub>1</sub>-/PV #10

x<sub>1</sub>-/PV #11

x<sub>1</sub>-/PV #12

x<sub>1</sub>-/PV #13

x<sub>1</sub>-/PV #14

x<sub>1</sub>-/PV #15

x<sub>1</sub>-/PV #16

Up Rev

Output

Max

10

Min

0

D.Max

20

D.Min

0

Min

13

Max

16

Lim

24

Type

SP - Dt - F3

Type

SP - Dt

Ref-Src

Zone

Idx

Zone 1

Interval(s)

20

Switch

Relay

Idx

IO #1

Primary

Secondary

Cutoff Hi Enable

Cutoff Lo Enable

Emulate

Cal

Enable Flow

Enable Dec Pt

Nt Low Limit

Reverse DAC.1

Init-It

Load Line:  
Rectangular Option

Limit  
Max Set to Valve = 24

Min Limit  
Options  
SP-Δ  
SP-Δ-F1  
SP-Δ-F2  
SP-Δ-F3(Use This)

Max Limit  
Options  
SP-Δ (Use This)  
SP-Δ-F1  
SP-Δ-F2  
SP-Δ-F3