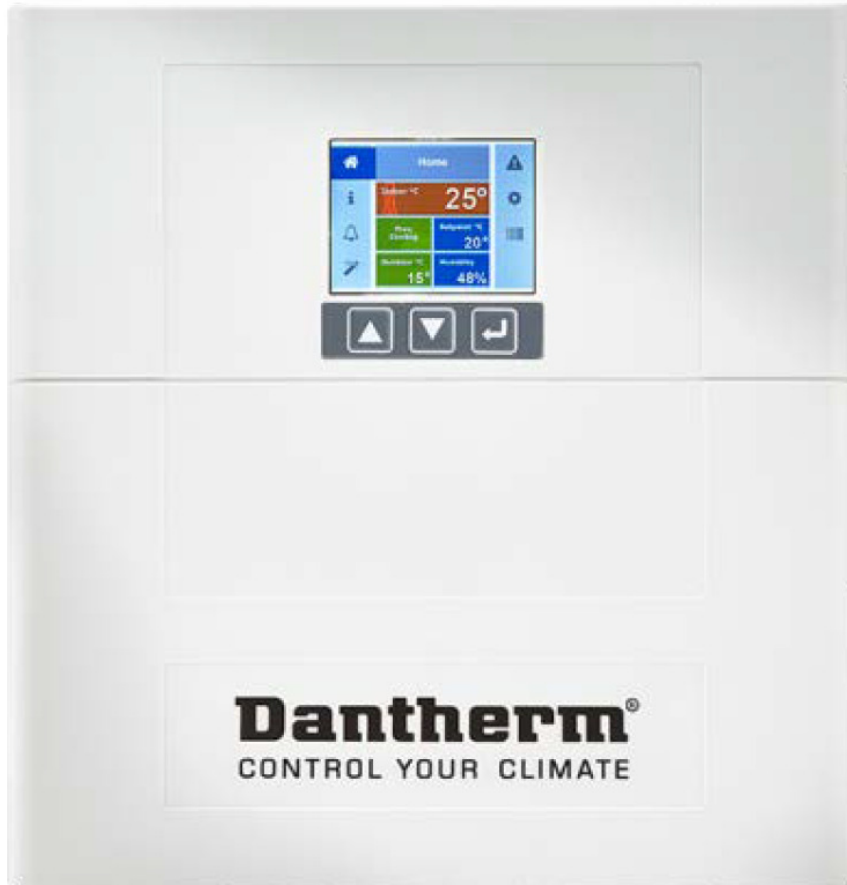


CC 3000 Controller

User's Manual



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Introduction

Overview

This document is a technical user manual for the new CC 3000 free cooling controller. CC 3000 controller is used for free cooling systems with or without additional air conditioner.

The controller can operate two Flexi boxes, two exhaust dampers/TC damper and two air conditioners.

Supports basic temperature control of temperature in enclosures and relative humidity functions, like change of operating mode, all to minimize energy consumption.

It has a color graphics user interface and an Ethernet connection for remote monitoring and control.

Revision history

Revision	Date	Author	Description
0.1	28-10-2015	CS	Initial draft version
0.2	16-05-2016	CS	Fan control scheme added
0.3	07-07-2016	CS	First draft release
0.4	31-10-2016	CS	Corrections in control configuration

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General Information

Introduction

This document provides information about the controller's functional, installation and configuration guidelines. It is expected that user, understand the document before installation.

Target Group

The user manual is targeted to technicians who install and maintain the unit.

This document is used when system setup is different from default, and adjustments to basic settings are needed.

Controller is setup by use of a configuration file that is uploaded to controller via SD card.

This gives a high flexibility regarding controller setup, but also requires high knowledge of controller and system, before changing anything from factory configuration.

Technical Description

Introduction

The CC3000 controller is based on latest technology within embedded microcontrollers. Embedded micro controller is a 32 bit Cortex M3 core.

User interface is designed with a 2,4 inch TFT color display.

Product configuration and firmware update can be done by use of standard SD card or SNMP over Ethernet / WEB GUI.

The CC3000 controller is enclosed in a special designed plastic enclosure, with UL rating 94-V0, dedicated for wall mount.

Control circuit is all low voltage and is designed according to EN/UL 60950.

Description

The CC3000 is designed as a single board controller, including all connections needed for supporting free cooling products.

It has connection for two flexi box/DFC products, two motorized dampers and two dry contacts for start/stop signal to AC/DC air conditioner.

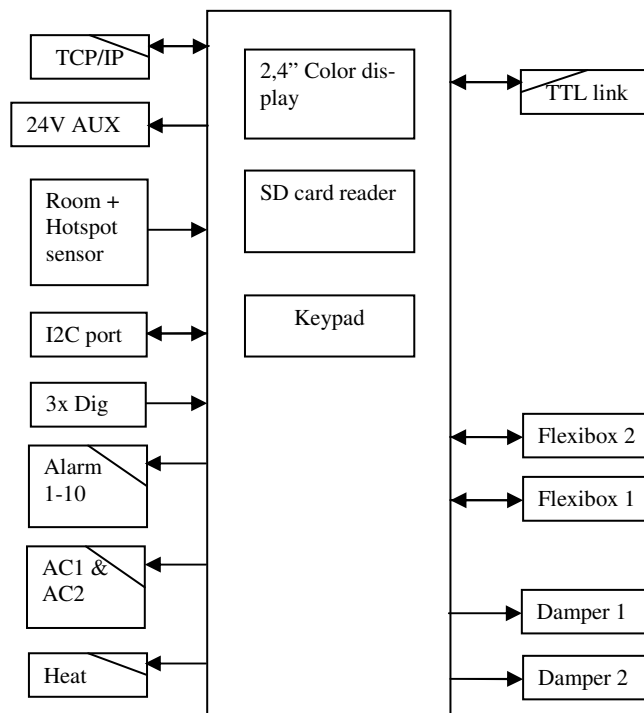
A dry contact for signal to heater unit is also provided.

10 dry contacts for alarming, full configurable.

All connections are done with multi connectors using spring loaded terminations.

LAN connection is provided for remote monitoring and setup using SNMP protocol.

Block Description



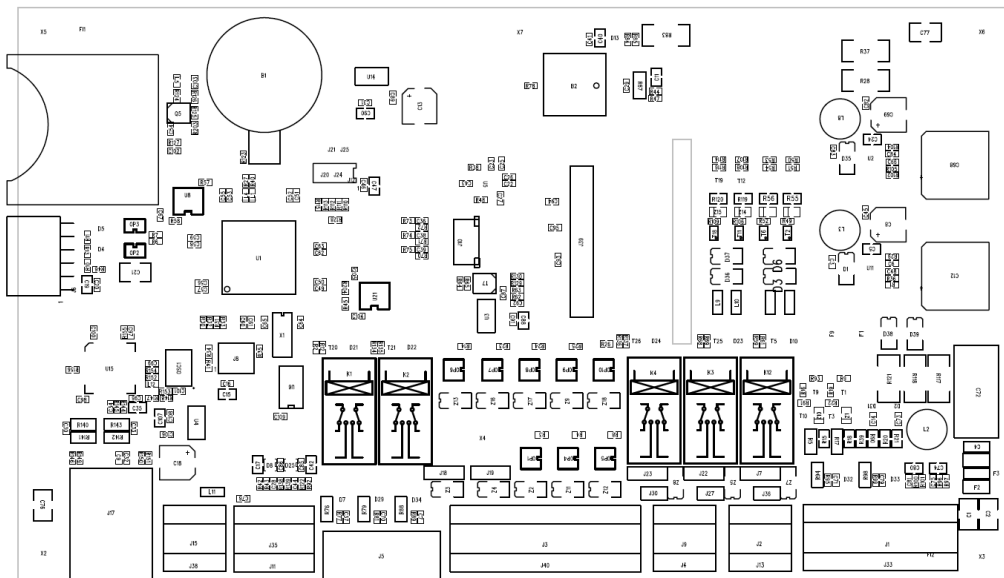


Fig. 1 Controller PCB layout

Technical Data

Items	Values/Range
Power supply voltage	40-60V DC
Internal power consumption	< 4W
Battery socket	CR2032
SD card socket	Standard SD card up to 32GB
TTL link	Serial communication line. Service port. 5V signalling TX,RX,gnd,5V
Ethernet	Magnetics RJ45 with status LED's SNMP protocol
24V DC AUX.	24V DC 100mA
Heater	Dry contact or 24V DC out. NO/NC.
I2C	Communication interface for 3,3V DC I2C components.(RH sensor, pressure sen- sor) Max wire length 1,5m
Temperature sensors, Room, hotspot	NTC type NTCLE100E3272GB0
3x Digital input.	For use with dry contacts. 1K pull up to 12V DC
10x Alarm output.	Dry contacts.

	<p>2x mechanical relay NO/NC. Max voltage 60V DC/100mA</p> <p>8x solid state relay. Max voltage 60V DC/100mA</p>
AC1/AC2 output.	<p>Dry contacts.</p> <p>2x mechanical relay, NO/NC or 24V DC</p>
Damper 1/Damper 2	24V DC open/close signal.
2x Flexi box	2x 8 wire interface for flexi box.

Connections

Overview

PCB component side

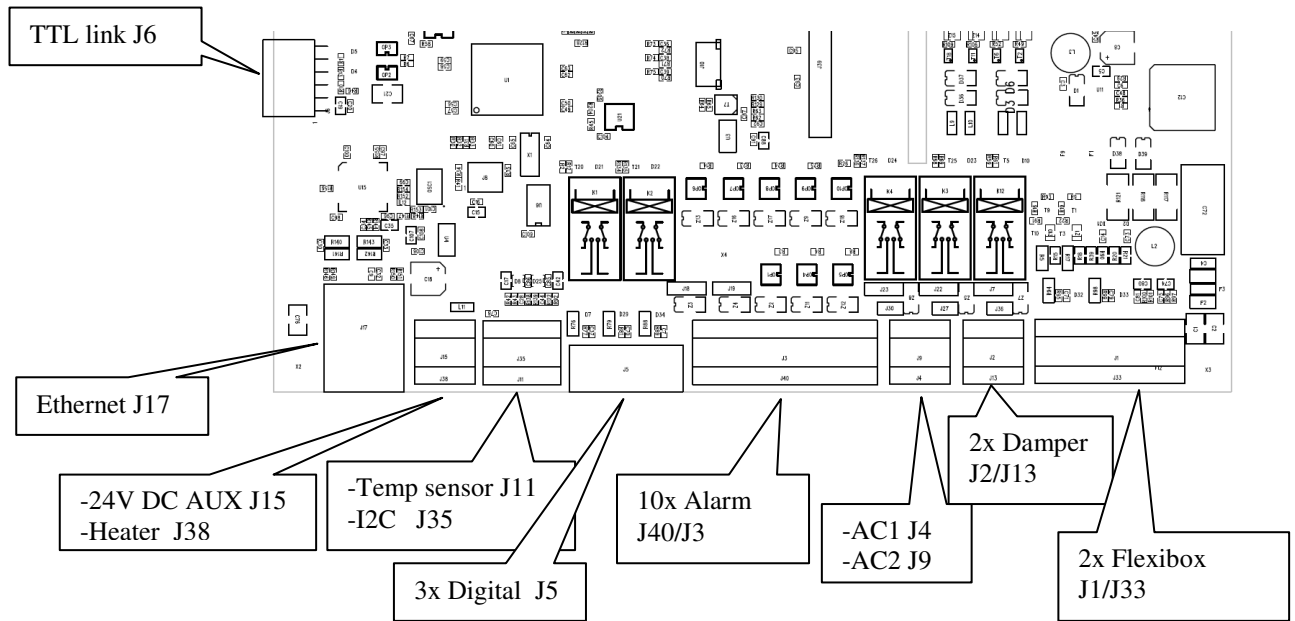


Fig. 2 Connector details

Flexibox

J1/J33 Anytek KE161151A000G (Mating type Anytek KD161050A000G)

- 1 +Supply (40-60V DC from Flexibox)
- 2 PWM1/2
- 3 Tacho 1/2
- 4 GND
- 5 Filter 1/2
- 6 GND
- 7 Ambient sensor 1/2
- 8 GND

Damper

J2/J13 Anytek KE061151A000G (Mating type Anytek KD061050A000G)

- 1 Close signal
- 2 Open signal
- 3 Common (Fused)

AC J9/J4 Anytek KE061151A000G (Mating type Anytek KD061050A000G)

1 AC1/2 /+24V
2 AC1/2
3 GND

AC outputs can be configured as dry contact or 0/24V DC output.

Alarm J3/J40 Anytek KE201151A000G (Mating type Anytek KD201050A000G)

J40,1,2 AL1
J40,3,4 AL2
J40,5,6 AL3
J40,7,8 AL4
J40,9,10 AL5

J3,1,2 AL6
J3,3,4 AL7
J3,5,6 AL8
J3,7,8 AL9
J3,9,10 AL10

Alarm outputs are dry contacts.

Alarm 1 and 2 output are mechanical relay contact with NO/NC contact

Alarm 3-10 is solid state type.

Digital J5 FCI 20020110-C061A01LF (Mating type Anytek KD0610500000G)

1 DIG1 (1K pull up to 12V DC)
2 GND
3 DIG2 (1K pull up to 12V DC)
4 GND
5 DIG3 (1K pull up to 12V DC)
6 GND

**Temp. sensor
I2C comm.** J11/J35 Anytek KE081151A000G (Mating type Anytek KD081050A000G)

J11,1 Room temperature sensor. NTC type
J11,2 GND
J11,3 Hotspot temperature sensor NTC type
J11,4 GND

J35,1 +3,3V DC

J35,2 SCL
J35,3 SDA
J35,4 GND

**24V DC AUX
Heater**

J15/J38 Anytek KE061151A000G (Mating type Anytek KD061050A000G)

1 +24V DC 100mA
2 NC
3 GND

1 Heat/+24V
2 Heat
3 GND

Heater output can be configured as dry contact or 0/24 DC output.

TTL link

J6 AMP 281698-6

1 GND
2 NC
3 +5V input
4 TXD
5 RXD
6 NC

TTL link can be used with standard USB to TTL cable.
TTL link is galvanic isolated.

http://www.ftdichip.com/Support/Documents/DataSheets/Cables/DS_TTL-232R_CABLES.pdf

Ethernet

J17 RJ45 LAN connector CAT5/CAT6. PulseJack J0011D21BNL

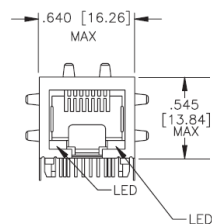


Fig. 3 RJ45 communication interface

Controller Operation GUI

Description

The CC3000 controller has a Graphical User Interface, GUI. GUI uses 2,4 Inch TFT color display and 3 button keypad for menu navigation. Display main page holds vital status information about operating conditions. Sub menus are available for detailed information or change of controller settings. Setting menus are password protected.

Display menu lay-out

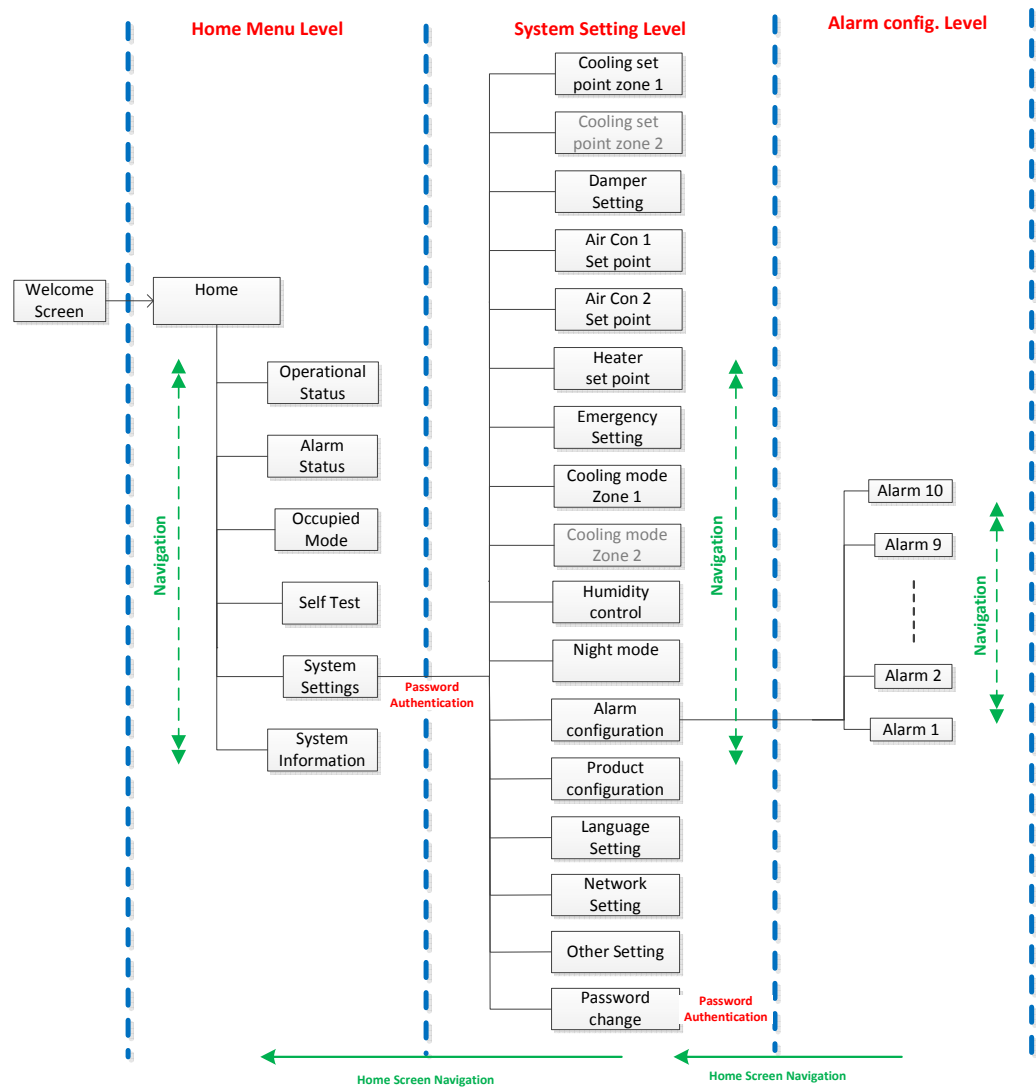


Fig. 4 Display menu lay-out

HOME Menu

Home menu gives information about :

- Indoor temperature.
 - Cooling set point
 - Outdoor temperature
 - Humidity. (if humidity sensor is connected)
 - Operational status. (In-active, Heating, Free-cooling, Active-cooling, Alarm)
-

Operational Status

Operational status menu informs about duration of the different operating states.

- Fan 1 operational duration in hours
- Fan 2 operational duration in hours
- A/C 1 operational duration in hours
- A/C 2 operational duration in hours
- Heater operational duration in hours

Fan 1 & 2 hour counters are increased when free cooling system is in operation.
A/C 1 & 2 hour counters are increased when air conditioner is in operation
Heater hour counter is increased when heater is in operation

Counters can only be reset over SNMP/WEB GUI or TTL link.

Alarm status

Alarm status menu gives information about which alarms is present currently.

Only alarms that are mapped to any of the 10 hardware alarm outputs are visible in this menu.

Only present alarms are visible, not historical alarms.

Available alarms:

- Low DC supply voltage
 - High DC supply voltage
 - Low indoor temperature
 - High indoor temperature level 1
 - High indoor temperature level 2
 - High indoor temperature level 3
 - Low indoor humidity
 - High indoor humidity
 - Filter pressure level 1 (optional analog pressure sensor)
 - Filter pressure level 2 (optional analog pressure sensor)
 - Fan 1
 - Fan 2
 - Onboard temperature sensor
 - Indoor temperature sensor
-

- Hotspot temperature sensor
- Ambient temperature sensor 1
- Ambient temperature sensor 2
- Digital input 1
- Digital input 2
- Digital input 3
- Filter guard 1 (Standard)
- Filter guard 2 (Standard)
- Network (LAN connection)
- Memory (Internal non volatile memory)
- SD card

Occupied mode

Occupied mode can be used by service personnel to obtain a suitable temperature in shelter during service job.

Temperature set point can be changed and the duration for the set point change.

- Setpoint °C (10-30 °C)
- Duration in minutes. (maximum 480 minutes)
- Disable/enable
- Exit. (Exits occupied mode and returns to normal mode)

Self test

Self test function can be used for diagnostics of system.

It runs through either an automatic sequency where all components are activated, or a manual function of each component.

- Stop/Start (Automatic sequency)
- None. (No components are activated. Normal mode)
- Dampers open.
- Fans
- Dampers close.
- Heater
- Air Con 1
- Air Con 2
- Alarm 1 (Alarm output will be toggled)
- Alarm 2 (Alarm output will be toggled)
- Alarm 3 (Alarm output will be toggled)
- Alarm 4 (Alarm output will be toggled)
- Alarm 5 (Alarm output will be toggled)
- Alarm 6 (Alarm output will be toggled)
- Alarm 7 (Alarm output will be toggled)
- Alarm 8 (Alarm output will be toggled)
- Alarm 9 (Alarm output will be toggled)

- Alarm 10 (Alarm output will be toggled)
 - Exit (Exits self test menu, and returns to normal mode)
-

System settings

Entry to sub menu, where system settings can be done.
To enter this menu, pass word is needed. (default password 0000)
All vital parameters for the system can be set in this menu.

System information

Product information and serial numbers are available under system information.

- SN. (Controller serial number)
 - FB 1. (information or serial number of Flexibox 1)
 - FB 2. (information or serial number of Flexibox 2)
 - A/C 1. (information or serial number of air conditioner 1)
 - A/C 2. (information or serial number of air conditioner 2)
 - FW. (Controller firmware version)
-

Cooling set point zone 1

Flexibox 1 fan control settings. Defines where cooling performance will have its minimum , maximum and start temperature.

P-band is between minimum and maximum.

Dual P-band can be configured.

- Set point °C (defines the shelter temperature where cooling performance increases)
 - Min. °C (Defines the shelter temperature where cooling performance is minimum)
 - Max. °C (Defines the shelter temperature where cooling performance is maximum)
 - Midpoint 1 °C (Defines P-band 1, between min. and midpoint 1)
 - Midpoint 2 °C (Defines P-band 2, between midpoint 2 and max.)
 - Midpoint RPM (Defines fan speed in % of max speed)
 - Exit. (saves data and exits menu)
-

Cooling set point zone 2

Flexibox 2 fan control settings. Defines where cooling performance will have its minimum , maximum and start temperature.

P-band is between minimum and maximum.

Dual P-band can be configured.

- Set point °C (defines the shelter temperature where cooling performance increases)
 - Min. °C (Defines the shelter temperature where cooling performance is minimum)
 - Max. °C (Defines the shelter temperature where cooling performance is maximum)
 - Midpoint 1 °C (Defines P-band 1, between min. and midpoint 1)
 - Midpoint 2 °C (Defines P-band 2, between midpoint 2 and max.)
 - Midpoint RPM (Defines fan speed in % of max speed)
 - Exit. (saves data and exits menu)
-

Damper settings

Defines how damper is operated. Can be set in two different modes.
Normal mode is used for exhaust dampers, dynamic mode is used for intake dampers with integrated bypass function.

- 1. Normal/Dynamic. (Normal: Damper open/close, Dynamic: Damper 0-100%)
 - 2. Normal/Dynamic. (Normal: Damper open/close, Dynamic: Damper 0-100%)
 - Exit. (Saves settings and exits menu.)
-

Air Conditioner 1 set point

Settings for Air Conditioner 1 output.

- ON °C (shelter temperature where air conditioner starts)
 - OFF °C (shelter temperature where air conditioner stops)
 - Disable/Enable
 - Exit. (Saves settings and exits menu.)
-

Air Conditioner 2 set point

Settings for Air Conditioner 2 output.

- ON °C (shelter temperature where air conditioner starts)
 - OFF °C (shelter temperature where air conditioner stops)
 - Disable/Enable
 - Exit. (Saves settings and exits menu.)
-

Heater set point

Settings for heater output.

- ON °C (shelter temperature where heater starts)
 - OFF °C (shelter temperature where heater stops)
 - Exit. (Saves settings and exits menu.)
-

Emergency settings

Settings for emergency operation. In emergency operation free cooling is at full performance.

- Entry °C (shelter temperature where emergency cooling starts)
 - Exit °C (shelter temperature where emergency cooling stops)
 - Exit. (Saves settings and exits menu.)
-

**Cooling mode
zone 1**

Settings for cooling mode in cooling zone 1. Four different cooling modes can be set.

- Free cooling. (Only free cooling available)
- Standard. (Free cooling and A/C available)
- Energy save. (Free cooling and A/C available)
- Air-conditioning. (Only A/C available)
- Exit. (Saves settings and exits menu.)

**Cooling mode
zone 2**

Settings for cooling mode in cooling zone 1. Four different cooling modes can be set.

- Free cooling. (Only free cooling available)
- Standard. (Free cooling and A/C available)
- Energy save. (Free cooling and A/C available)
- Air-conditioning. (Only A/C available)
- Exit. (Saves settings and exits menu.)

**Humidity control
settings**

Settings for humidity control. Controller can change between the four different cooling modes or do set point offset, when passing humidity threshold.

- Max humidity level % (Humidity threshold)
- Setpoint offset. (Offsets cooling setpoint)
- Free cooling. (Only free cooling available)
- Standard. (Free cooling and A/C available)
- Energy save. (Free cooling and A/C available)
- Air-conditioning. (Only A/C available)
- Outdoor. (location of RH sensor)
- Disable/enable. (Humidity function)
- Exit. (Saves settings and exits menu.)

**Night mode
settings**

In night mode settings, controller can change between the four different cooling modes, limit max fan speed or do set point offset.

If this function is used, current data and time must be set.

- Disable/enable (Night mode function)
- Start time. (Defines at which time night mode function is active)
- End time. (Defines at which time night mode function is in-active)
- Current time. (clock setting)
- Current date. (Calendar setting)
- Max speed %. (Defines max.fan speed in % during night mode)

- Setpoint offset. (Cooling set point offset during night mode)
- Free cooling. (Only free cooling available)
- Standard. (Free cooling and A/C available)
- Energy save. (Free cooling and A/C available)
- Air-conditioning. (Only A/C available)
- Exit. (Saves settings and exits menu.)

Alarm configuration

Alarm configuration for the 10 hardware alarm outputs.

Any alarm that is configured to any of the 10 hardware alarm output, will also be send as SNMP alarm trap.

Each of the 10 hardware alarm outputs can be configured individually.

Alarm 1 and 2 output can take multiple alarms. Alarm 3-10 can only handle single alarm.

- Low voltage. (DC supply voltage low alarm)
- High voltage. (DC supply voltage high alarm)
- Temp. low. (Low temperature alarm.)
- Temp. high 1. (High temperature 1 alarm)
- Temp. high 2. (High temperature 2 alarm)
- Temp. High 3. (High temperature 3 alarm)
- Humidity low. (Low humidity alarm)
- Humidity high. (High humidity alarm)
- Filter flow 1 (Pressure level 1 alarm)
- Filter flow 2 (Pressure level 2 alarm)
- Fan 1. (Fan 1 alarm. Wrong RPM)
- Fan 2. (Fan 2 alarm. Wrong RPM)
- Onboard sensor (NTC fail)
- Room sensor. (NTC fail)
- Hotspot sensor. (NTC fail)
- Ambient 1 sensor. (NTC fail)
- Ambient 2 sensor. (NTC fail)
- Digital 1. (Digital 1 input active)
- Digital 2. (Digital 2 input avtive)
- Digital 3. (Digital 3 input active)
- Filterguard 1. (Digital filterguard 1 alarm)
- Filterguard 2. (Digital filterguard 2 alarm)
- Network. (Network fail. Ethernet)
- Memory. (Internal memory fail)
- SD card. (SD card fail)
- NO/NC. (alarm output normally open or normally closed)
- Exit. (Saves settings and exits menu.)

Product configuration

Product configuration menu is used to setup controller for the right product. The CC3000 controller can be used for different free cooling products. SD card must be inserted, and product list will pop up on display. Please choose right product for the application.

- Product name. (list of different product names)
- Exit. (Saves settings and exits menu.)

Language settings

List of optional languages. Insert SD card with language pack and upload correct language.

- Dansk
- Norsk
- Svensk
- etc
- Exit. (Saves settings and exits menu.)

Network settings

Settings for Ethernet connection and SNMP trap management.

- Static/DHCP. (static or dynamic IP address)
- IP address. (Read/write Controller IP address)
- Subnet mask.
- Gateway IP
- Trap manager 1 IP. (IP address of alarm trap manager 1)
- Trap manager 2 IP. (IP address of alarm trap manager 2)
- Exit. (Saves settings and exits menu.)

Other settings

Settings for generic parameters.

- Lead/lag (Enables air-conditioner lead/lag function)
- Dual zone. (Enables dual zone cooling configuration)
- English. (Enables English display language)
- Unit DgC/F. (Switch between Celsius or Fahrenheit display units)
- Backup configuration. (uploads present configuration to SD card)
- Default setting. (Back to default product settings)
- Exit. (Saves settings and exits menu.)

**Change
password**

Password change.

Present password must be typed in, before it can be changed to new password.

Installation and Configuration

Description

During installation, the CC3000 controller must be configured for the specific product setup.

When CC3000 is initially powered up with 48V DC, it will enter the product setup menu. Operator must insert SD card with list of supported products, and chose correct product, matching the actual site setup.

Default language pack is English. Local language pack can be uploaded from SD card.

When product and language pack information is up loaded, SD card can be removed from controller.

Settings are now stored in onboard nonvolatile memory.

If operational data log is required, a SD card must be present in the SD card socket.

CC3000 will generate a log file named stat_log.txt. (CSV file that can be imported to excel)

Default log interval is set to 1 minute. (log interval can be changed in configuration file)

TTL Interface

The serial interface between host and controller established using a **USB to serial TTL converter cable assembly**.

Connect the serial cable between host and controller. Start up a "**Terminal**" application in the host PC with following serial ports settings.

- baud rate - 9600
- data bits - 8
- parity - none
- stop bits - 1
- flow control - none.

Now the controller is ready to be accessed.

TTL cable type : **TTL-232R-3V3 or TTL-232R-5V**

<http://www.ftdichip.com/Products/Cables/USBTTLSerial.htm>

Ethernet

CC3000 Controller has a standard RJ45 connection for network connection.

This interface has a SNMP over TCP/IP included.

The SNMP function supports get/set and trap functions.

MIB file is available. RFC 1213

Network settings is done via GUI or SD card configuration setup.

Supports up to 3 different trap managers.

The CC3000 controller has a WEB GUI implemented.

To access WEB GUI use standard browser, and type in IP address of controller.

From WEB GUI most vital control parameters can be setup and monitored.

To check IP address of controller, use GUI and go to network settings.

Up load and down load of configuration, logfiles and firmware can be done via Ethernet port.

Use TFTP.

Eks. Download configuration file.

```
Tftp [ip address] get cc_cfg.txt
```

Eks. Up load configuration file.

```
Tftp [ip address] put cc_cfg.txt
```

Eks. Download log file. (from SD card)

```
Tftp [ip address] get stat_log.txt
```

Eks. Up load firmware.

```
Tftp -i [ip address] put cc3k_app.bin
```

First time up load of firmware may return Access violation, because internal memory is not erased and ready for upload.

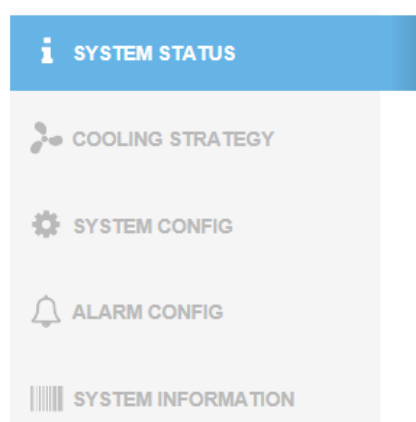
Try again after 2 minutes. Internal memory will now be ready.

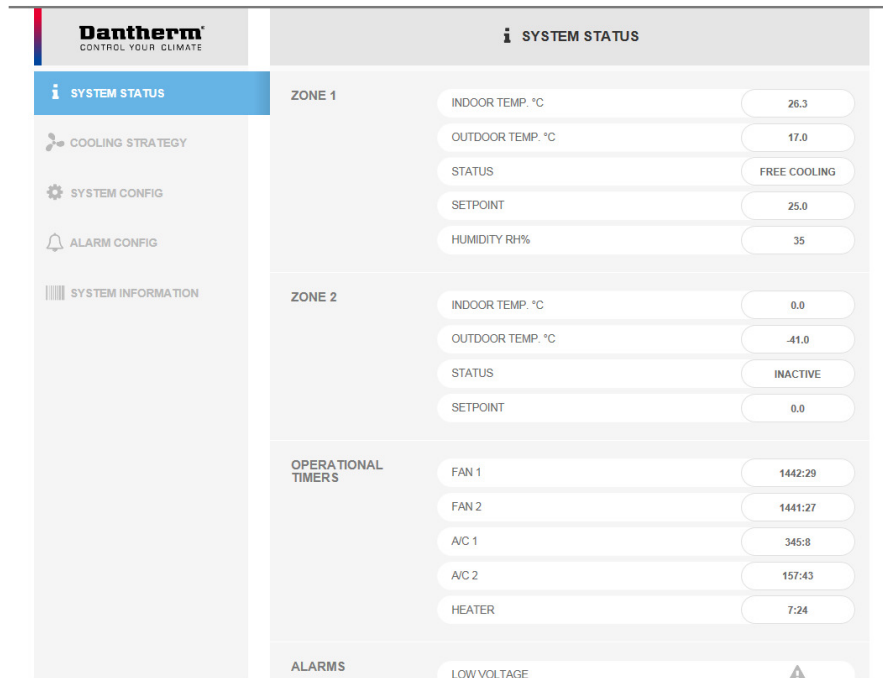
After up load of new firm ware a controller reset must be initiated .

WEB GUI

WEB GUI can be used for easy configuration and monitoring.

Easy navigation between sections. Click and edit.





SD Card Interface

SD Card type: The controller supports SD card of size 1/2/4/8/16/32GB. The card shall be formatted in FAT/FAT32.

SD card is used for upload of product configuration, language pack, firmware update and can be used for storage of operational log data.

NOTE:

- *It is allowed, only to modify the data field mentioned in the configuration file and data should be within the specified range.*
- *Remember to close the updated configuration file (config.txt) from the SD card, before withdrawing from the host PC.*

TTL link

The TTL link interface is used for service / test purpose. System status information can be read out.

Configuration and settings can be changed.

Override function to verify correct connection of system components like Flexibox, dampers, sensors, etc.

TTL menu

Menu on TTL link is divided into main menu and sub menus.

Navigation is done by typing in letters and numbers from terminal program.

Header gives information about bootloader firmware version and application firmware version.

To enter sub menus press respective letter on PC keyboard.

Main menu:

* Dantherm Air Handling A/S., Skive, 7800 DENMARK
BL.Ver - 1.1 App.Ver - 0.64
Controller - CC3000

Calender - 12/4/2016 Time - 13.36

S - System Status
O - Override Mode
U - Display Serial No. Info
Q - Display Fan Config.
W - Display Damper Config.
E - Display Aircon. Config
R - Display Heater Config
T - Display Humidity Con. Config
Y - Display Control Config
A - Display Alarm Config
N - Display Network config
I - Display Operation Info.
P - Display Night program Info.
L - Display Error Status
C - Configure System
D - Dump config. to SD Card
X - Password Change
V - Operation Info. Reset
B - Config Serial Numbers
K - Set RTC Calender

System status

System status menu gives information about current system conditions.
Data is updated every time "s" key is pressed.

s

System Status

[General Information]

Voltage	: 20.0 Vdc	Alarm O/P 6	: 0
Dig1 I/P	: 1	Alarm O/P 7	: 0
Dig2 I/P	: 1	Alarm O/P 8	: 0
Dig3 I/P	: 1	Alarm O/P 9	: 0
Filter Grd 1 I/P	: 1	Alarm O/P 10	: 0
Filter Grd 2 I/P	: 1		
Alarm O/P 1	: 0		
Alarm O/P 2	: 0		
Alarm O/P 3	: 0		
Alarm O/P 4	: 0		
Alarm O/P 5	: 0		

Temperature [Deg C]

Onboard	: 41.0	Rel.Humidity	: 17.1 Rh%
Room	: 16.7	DewPoint	: -2.1 Deg C
HotSpot	: -41.0	Atmos. Pressure	: -1.0 KPa
Ambient 1	: -41.0	Filter Pressure	: 0 Pa
Ambient 2	: -41.0		
Shelter	: 16.7		

SET POINT > Zone 1: 15.0 Zone 2: 0.0
STATUS > Zone 1:FREE COOLING Zone 2: NONE

	Status	Duty Cycle	RPM	Status	Open %
Fan 1	: 1	100.0	0	Damper 1	: 1 100
Fan 2	: 1	100.0	0	Damper 2	: 0 0
AC 1	: 0	-	-		
AC 2	: 0	-	-		
Heater	: 0	-	-		

[Fan: 1-On 2-Boost] [Damper: 1-Open 2-Dynamic 3-Emergency] [A/C: 1-Timeout 2-ON]

NetWork:

Parameter	Range	Description
Voltage	0-60V DC	System DC supply voltage
Dig 1 I/P	0/1	Status of digital input. 0: short 1: open
Dig 2 I/P	0/1	Status of digital input. 0: short 1: open
Dig 3 I/P	0/1	Status of digital input. 0: short 1: open
Filter grd 1/I/P	0/1	Status of digital filter guard input. 0: short 1: open
Filter grd 2 I/P	0/1	Status of digital filter guard input. 0: short 1: open
Alarm O/P 1	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 2	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 3	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 4	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 5	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 6	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 7	0/1	Status of alarm output.

		0: No alarm 1: Alarm
Alarm O/P 8	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 9	0/1	Status of alarm output. 0: No alarm 1: Alarm
Alarm O/P 10	0/1	Status of alarm output. 0: No alarm 1: Alarm
Onboard	-40-80 °C	Onboard temperature measurement. Temperature sensor located on PCB
Room	-40-80 °C	Room temperature measurement.
Hotspot	-40-80 °C	Hotspot temperature measurement.
Ambient 1	-40-80 °C	Ambient air temperature measurement in Flexibox 1
Ambien 2	-40-80 °C	Ambient air temperature measurement in Flexibox 2
Shelter	-40-80 °C	Shelter temperature measurement. Derived from room sensor or hotspot sensor or both.
Rel. Humidity	0-100%	Relative humidity sensor reading. Optional.
Dewpoint	-40-80 °C	Dewpoint based on shelter RH reading and temperature reading.
Atmos. pressure		Optional
Filter pressure		Optional
Set Point	-40-80 °C	Actual cooling setpoint
Status		Operating status. -None -Heater -Recycling -Free cooling -Active cooling -Emergency -Intermediate
Fan 1	0-2 0-100% 0-5000	Status of fan 1. 0: Inactive 1: Active 2: Boost 0-100% Duty-cycle. (speed signal to fan)

		0-5000 Fan RPM
Fan 2	0-2 0-100% 0-5000	Status of fan 2. 0: Inactive 1: Active 2: Boost 0-100% Duty-cycle. (speed signal to fan) 0-5000 Fan RPM
AC 1	0-2	Status of Air-conditioner 1 output. 0: Inactive 1: Timeout. (restart/run timer) 2: Active
AC 2	0-2	Status of Air-conditioner 1 output. 0: Inactive 1: Timeout. (restart/run timer) 2: Active
Heater	0/1	Status of heater output. 0: Inactive 1: Active
Damper 1	0-3	Status of damper output. 0: Closed 1: Open 2: Modulating 3: Emergency open
Damper 2	0-3	Status of damper output. 0: Closed 1: Open 2: Modulating 3: Emergency open
Network		

Fig. 5 parameter details

Override mode

[OverRide Parameters]

[Control Signals/Drives/Functions]

1.Alarm 1 : 0/1 6.Alarm 6 : 0/1 11.AC 1 : 0/1 16.Fan 1 PWM : 0-100%
2.Alarm 2 : 0/1 7.Alarm 7 : 0/1 12.AC 2 : 0/1 17.Fan 2 PWM : 0-100%

3.Alarm 3 : 0/1 8.Alarm 8 : 0/1 13.Damper 1 : 0/1
4.Alarm 4 : 0/1 9.Alarm 9 : 0/1 14.Damper 2 : 0/1
5.Alarm 5 : 0/1 10.Alarm 10 : 0/1 15.Heater : 0/1

[Tempr/Humidity/Flow Sensors]

18.On Board Tempr : -40 - 100 'C 22.Ambient 2 Tempr. : -40 - 100 'C
19.Room Tempr. : -40 - 100 'C 23.Shelter Tempr. : -40 - 100 'C
20.Hot Spot Tempr.: -40 - 100 'C 24.Relative humidity : 40 - 90 Rh%
21.Ambient 1 Tempr.: -40 - 100 'C 25.Filter Pressure : 75 - 750 Pas-
cal

S - System Status C - Clear Override Q - Quit

To enter override menu type “o” on keyboard.

Enter password and press enter.

To override any of the 25 items, type line number followed by semicolon and override value followed by enter.

Eks. Override room temperature to 25 C.

Type: 19;25 followed by enter.

Parameter	Range	Description
1. Alarm 1	0/1	Override alarm 1 output. 0:Alarm output deactivated 1: Alarm output activated
2. Alarm 2	0/1	Override alarm 2 output. 0:Alarm output deactivated 1: Alarm output activated
3. Alarm 3	0/1	Override alarm 3 output. 0:Alarm output deactivated 1: Alarm output activated
4. Alarm 4	0/1	Override alarm 4 output. 0:Alarm output deactivated 1: Alarm output activated
5. Alarm 5	0/1	Override alarm 5 output. 0:Alarm output deactivated 1: Alarm output activated
6. Alarm 6	0/1	Override alarm 5 output. 0:Alarm output deactivated 1: Alarm output activated

7. Alarm 7	0/1	Override alarm 7 output. 0:Alarm output deactivated 1: Alarm output activated
8. Alarm 8	0/1	Override alarm 8 output. 0:Alarm output deactivated 1: Alarm output activated
9. Alarm 9	0/1	Override alarm 9 output. 0:Alarm output deactivated 1: Alarm output activated
10. Alarm 10	0/1	Override alarm 10 output. 0:Alarm output deactivated 1: Alarm output activated
11. AC1	0/1	Override AC 1 output. 0:Output deactivated 1: Output activated
12. AC2	0/1	Override AC 2 output. 0:Output deactivated 1: Output activated
13. Damper 1	0/1	Override Damper 1 output. 0:Damper close output active 1: Damper open output active
14. Damper 2	0/1	Override Damper 2 output. 0:Damper close output active 1: Damper open output active
15. Heater	0/1	Override Heater output. 0: Heater output deactive 1: Heater output active
16. Fan 1 PWM	0-100%	Fan 1 speed signal 0-100% dutycycle 0: Fan stop 100: Fan full speed.
17. Fan 2 PWM	0-100%	Fan 2 speed signal 0-100% dutycycle 0: Fan stop 100: Fan full speed.

18. Onboard temp.	-40-100 °C	Override Onboard temp. sensor. -40-100 °C Used to simulate other temperature than actual sensor temperature.
19. Room temp.	-40-100 °C	Override Room temp. sensor. -40-100 °C Used to simulate other temperature than actual sensor temperature.
20. Hotspot temp.	-40-100 °C	Override Hotspot temp. sensor. -40-100 °C Used to simulate other temperature than actual sensor temperature.
21. Ambient 1 temp.	-40-100 °C	Override Ambient 1 temp. sensor. -40-100 °C Used to simulate other temperature than actual sensor temperature.
22. Ambient 2 temp.	-40-100 °C	Override Ambient 2 temp. sensor. -40-100 °C Used to simulate other temperature than actual sensor temperature.
23. Shelter temp	-40-100 °C	Override Shelter temp. -40-100 °C Used to simulate other temperature than actual temperature.
24. Relative humidity	0-100%	Override RH sensor value. 0-100% Used to simulate other RH value than actual RH value.
25. Filter pressure	0-750pa	Override filter pressure. 0-750pa Used to simulate other filter pressure drop value than actual pressure drop.
S		"S" command can be used after setting override value to get an update of system status based on new override values.
C		"C" command will clear any override values.

		If system is left in override mode it will automatically return to normal operation after 10 minutes
Q		"Q" Will quite override menu and return main menu.

Display Serial No. Info. Menu gives access to information , no editing is possible.
To edit parameters, use config serial number menu "B"

[Serial Number Information]

- 1. CC Sn. :
- 2. Fan 1 Sn. :
- 3. Fan 2 Sn. :
- 4. A/C 1 Sn. :
- 5. A/C 2 Sn. :

To enter serial No. info menu type "u" on keyboard.

Return to main menu, press enter.

This menu gives information about controller serial no. and serial number of connected products.

Controller serial number will be preset from factory.

Serial number of connected products must be typed in manually during installation. Not required.

Parameter	Range	Description
1. CC Sn.	32 digits	Serial number of CC3000 controller
2. Fan 1 Sn.	32 digits	Serial number of Flexibox 1
3. Fan 2 Sn.	32 digits	Serial number of Flexibox 2
4. A/C 1 Sn.	32 digits	Serial number of Air-conditioner 1
5. A/C 1 Sn.	32 digits	Serial number of Air-conditioner 2

Display Fan Config Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

```
[Cooling Fan Configuration]

Fan 1      Fan 2

1.OFF Temp           [xT0] [-40-80]: 14.0    :14.0
2.IDLE ON Temp       [xT1] [-40-80]: 15.0    :15.0
3.IDLE entry Temp    [xT2] [-40-80]: 15.0    :15.0
4.MID POINT 1 Temp   [xT3] [-40-80]: 20.0    :20.0
5.SET POINT Temp     [xTs] [-40-80]: 15.0    :15.0
6.MID POINT 2 Temp   [xT4] [-40-80]: 20.0    :20.0
7.HIGH SPEED Temp    [xT5] [-40-80]: 20.0    :20.0
8.EXTND HS entry Temp [xT6] [-40-80]: 27.0    :20.0
9.EXTND HS exit Temp [xT7] [-40-80]: 25.0    :18.0
10.BOOST entry Temp  [xT8] [-40-80]: 27.0    :27.0
11.BOOST exit Temp   [xT9] [-40-80]: 22.0    :22.0

12.IDLE_RPM          [xR1] [0-9999]: 500     :500
13.MID POINT RPM     [xR2] [0-9999]: 1800    :1800
14.HIGH SPEED RPM    [xR3] [0-9999]: 1800    :1800
15.EXTND HS RPM      [xR4] [0-9999]: 0       : 0
16.IDLE Duty Cycle   [xD1] [0-100]: 20      : 20
17.MID Duty Cycle    [xD2] [0-100]: 80      : 80
18.HIGH SPEED Duty Cycle [xD3] [0-100]: 80      : 80
19.EXTND HS Duty Cycle [xD3] [0-100]: 65      : 65
20.BOOST Duty Cycle  [xD4] [0-100]: 100     :100
21.Dead Band RPMCycle [DBx] [100-1000]: 100   :100

22.Override - Digi.1 [x/0-100]: x         :x
23.Override - Digi.2 [x/0-100]: x         :x
24.Override - Digi.3 [x/0-100]: x         :x
25.Override - Sensor Fail [x/0-100]: x         :x
26.Sens.Sel. OB/RA/HS/A2/A1/ST [0-5]: 5         :5
27.Tacho pulse/rev [1-8]: 3         :3
28.Tacho Control Ena/Dis [0/1]: 0         :0
29.Ctrl type [0-10V/PWM] [0/1]: 0         :0
30.Enable [0/1]: 1         :1
```

To enter display fan config menu type “q” on keyboard.

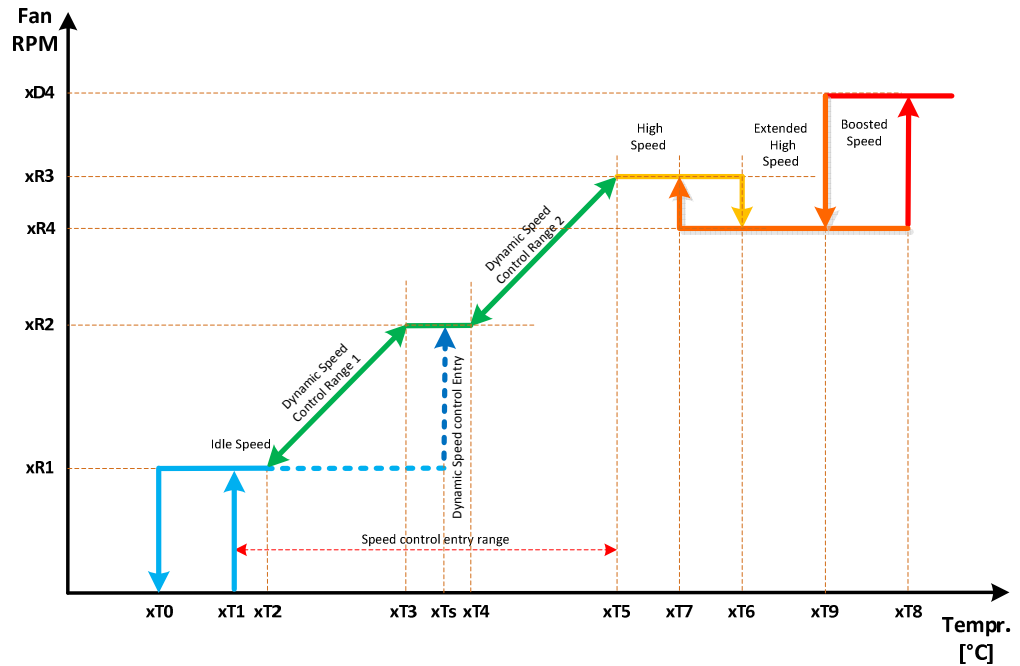
Return to main menu, press enter.

This menu gives information about how cooling strategy is setup for fan 1 and fan 2 (Flexibox 1&2), and specific settings related to fan type.

Parameter	Range	Description
1. OFF temp	-40-80°C	Temperature where fan is switched off.
2. Idle ON	-40-80°C	Temperature where fan is switched ON at idle

temp		speed. Minimum free cooling performance.
3. Idle entry temp.	-40-80 °C	Temperature where p-band starts.
4. Midpoint 1 temp.	-40-80 °C	Temperature where p-band 1 stops. (If dual slope fan strategy is used.)
5. Set point temp.	-40-80 °C	Temperature where fan enters p-band
6. Midpoint 2 temp.	-40-80 °C	Temperature where p-band 2 starts. (If dual slope fan strategy is used.)
7. High speed temp.	-40-80 °C	Temperature where fan runs high speed RPM
8. Extnd HS entry temp.	-40-80 °C	Temperature where fan enters extended high speed RPM.
9. Extnd HS exit temp.	-40-80 °C	Temperature where fan exits extended high speed RPM
10. Boost entry temp.	-40-80 °C	Temperature where fan enters maximum speed. 100% dutycycle.
11. Boost exit temp.	-40-80 °C	Temperature where fan exits maximum speed.
12. Idle RPM	0-9999	Fan speed at idle ON temperature.
13. Midpoint RPM	0-9999	Fan speed at midpoint temperature.
14. High speed RPM	0-9999	Fan speed at high speed temperature.
15. Extnd HS RPM	0-9999	Fan speed at extnd HS temperature.
16. Idle duty cycle	0-100	Fan speed duty cycle at idle ON temperature. (Only used for fans without tacho feedback)
17. Mid duty cycle	0-100	Fan speed duty cycle at midpoint temperature. (Only used for fans without tacho feedback)
18. High speed duty cycle	0-100	Fan speed duty cycle at high speed temperature. (Only used for fans without tacho feedback)
19. Extnd HS duty cycle	0-100	Fan speed duty cycle at extnd HS temperature. (Only used for fans without tacho feedback)
20. Boost duty cycle	0-100	Fan speed duty cycle at Boost temperature. (Only used for fans without tacho feedback)
21. Deadband RPM cycle	100-1000	RPM deadband setting for fan failure detection. If fan RPM is outside target RPM +/- deadband, gives fan alarm
22. Override dig 1	x/0-100	Digital input can be setup to have impact on fan performance.

		X: No action 0-100: Fan speed
23. Override dig 2	x/0-100	Digital input can be setup to have impact on fan performance. X: No action 0-100: Fan speed
24. Override dig 3	x/0-100	Digital input can be setup to have impact on fan performance. X: No action 0-100: Fan speed
25. Override sensor fail	x/0-100	Temperature Sensor fail can be setup to have impact on fan performance. X: No action 0-100: Fan speed
26. Sens. Sel. OB/RA/HS/A2/A1/ST	0-5	Setup for which temperature sensor to control fan. 0: Onboard temperature sensor 1: Return air temperature sensor 2: Hotspot temperature sensor 3: Ambient 2 temperature sensor 4: Ambient 1 temperature sensor 5: Shelter temperature.
27. Tacho pulse/rev.	1-8	Defines how many tacho pulses per revolution the specific fan gives. Must be setup to comply with Flexibox fan.
28. Tacho control ena/dis	0/1	Defines if fan runs closed loop control or open loop control. Open loop control is used for fans without tacho feedback 0: Closed loop 1: Open loop
29. Ctrl type	0/1	Defines amplitude of fan speed control signal. 0-10V amplitude or 0-48V amplitude. Both signals have 5KHz switch frequency. 0: 0-10V (used for 0-10V controlled fans) 1: 0-48V (Used for PWM controlled fans)
30. Enable	0/1	Enable or disable fan control. 0: Disable 1: Enable.



Fan control scheme

Display Damper Config

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

Damper Configuration

	Damper 1	Damper 2
1.LOWER Close Temp	[dT0] [-40-80]: 14.0	: -10.0
2.LOWER Open Temp	[dT1] [-40-80]: 15.0	: -8.0
3.UPPER Open Temp	[dT2] [-40-80]: 18.0	: 18.0
4.UPPER Close Temp	[dT3] [-40-80]: 20.0	: 20.0
5.EMGNCY Close Temp	[dT4] [-40-80]: 22.0	: 22.0
6.EMGNCY Open Temp	[dT5] [-40-80]: 27.0	: 27.0
7.Override - Digi.1	[x/0/1]: x	: x
8.Override - Digi.2	[x/0/1]: x	: x
9.Override - Digi.3	[x/0/1]: x	: x
10.Override - Sensor Fail	[x/0/1]: x	: x
11.Sens.Sel. OB/RA/HS/A2/A1/ST	[0-5]: 5	: 4
12.Damper Run dur. Sec.	[30 - 300]: 60	: 60
13.Enable	[0/1/2]: 1	: 1

To enter damper config menu type “W” on keyboard.

Return to main menu, press enter.

This menu gives information about how cooling strategy is setup for damper 1

and damper 2, and specific settings related to damper type.

Parameter	Range	Description
1. Lower close temp.	-40-80 °C	Temperature setting where damper closes.
2. Lower open temp.	-40-80 °C	Temperature setting where damper opens.
3. Upper open temp.	-40-80 °C	Temperature setting where damper opens. Used in applications where free cooling and A/C are used together. Upper open temperature setting must be set to same value as A/C off temp.
4. Upper close temp.	-40-80 °C	Temperature setting where damper closes. Used in applications where free cooling and A/C are used together. Upper close temperature setting must be set to same value as A/C on temp.
5. Emergency close temp.	-40-80 °C	Temperature settings where damper closes. Exit from emergency free cooling.
6. Emergency open temp.	-40-80 °C	Temperature settings where damper opens. Emergency free cooling entry.
7. Override digi 1	x/0/1	Digital input can be setup to have impact on damper function. X: No action 0: Damper close 1; Damper open
8. Override digi 2	x/0/1	Digital input can be setup to have impact on damper function. X: No action 0: Damper close 1; Damper open
9. Override digi 3	x/0/1	Digital input can be setup to have impact on damper function. X: No action 0: Damper close 1; Damper open
10. Override sensor fail	x/0/1	Sensor fail can be setup to have impact on damper function. X: No action 0: Damper close 1; Damper open
11. Sens. Sel. OB/RA/HS/A2/A1/ST	0-5	Setup for which temperature sensor to control Damper. 0: Onboard temperature sensor 1: Return air temperature sensor 2: Hotspot temperature sensor

		3: Ambient 2 temperature sensor 4: Ambient 1 temperature sensor 5: Shelter temperature.
12. Damper run dur. Sec.	30-300	Setup of damper run duration. Must comply with specific damper run time from closed to fully open. Important if dynamic damper operation is used. Value is in seconds.
13. Enable	0/1/2	Enable/disable damper operation. 0:Disable 1:Open/close operation. 2: Dynamic damper operation. (Modulating)

Display Aircon Config

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

```
[Air Con. Configuration]
                                     A/C 1      A/C 2
1.ON Temp                          [cT0] [-40-80]: 20.0      :22.0
2.OFF Temp                          [cT1] [-40-80]: 18.0      :20.0
3.Override - Digi.1                  [x/0/1]: x                :x
4.Override - Digi.2                  [x/0/1]: x                :x
5.Override - Digi.3                  [x/0/1]: x                :x
6.Override - Sensor Fail              [x/0/1]: x                :x
7.Sens.Sel. OB/RA/HS/A2/A1/ST        [0-5]: 5                  :5
8.Min. ON duration Sec.               [60-3600]: 60             :60
9.Restart time-out Sec.               [60-3600]: 60             :60
10.Enable                             [0/1]: 0                  :0
```

To enter aircon. config menu type “E” on keyboard.

Return to main menu, press enter.

This menu gives information about how cooling strategy is setup for Aircon 1 and Aircon 2, and specific settings related to Aircon. type.

Parameter	Range	Description
1. ON temp.	-40-80 °C	Temperature setting where A/C output is activated.
2. OFF temp.	-40-80 °C	Temperature setting where A/C output is deactivated.
3. Override digi 1	x/0/1	Digital input can be setup to have impact on Aircon. function. X: No action 0: A/C off 1; A/C on
4. Override digi 2	x/0/1	Digital input can be setup to have impact on Aircon. function. X: No action 0: A/C off 1; A/C on
5. Override digi 3	x/0/1	Digital input can be setup to have impact on Aircon. function. X: No action 0: A/C off 1; A/C on
6. Override sensor fail	x/0/1	Sensor fail can be setup to have impact on Aircon function. X: No action 0: A/C off 1; A/C on
7. Sens. Sel. OB/RA/HS/A2/A1/ST	0-5	Setup for which temperature sensor to control Aircon. 0: Onboard temperature sensor 1: Return air temperature sensor 2: Hotspot temperature sensor 3: Ambient 2 temperature sensor 4: Ambient 1 temperature sensor 5: Shelter temperature.
8. Min ON duration sec.	60-3600	Aircon minimum ON duration time. Specifies how long time aircon is forced to run when first started. Must be setup to comply with Aircon manufacture recommendations. Value in seconds.
9. Restart time-out	60-3600	Aircon. restart delay time. Specifies pause time for aircon. when first

sec.		stopped. Must be setup to comply with Aircon manufacture recommendations. Value in seconds.
10. Enable	0/1	Enable/disable of aircon function. 0:Disable 1:Enable

Display heater Config

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

[Heater Configuration]

```

1.ON Temp [hT0] [-40-80]: 5.0
2.OFF Temp [hT1] [-40-80]: 16.0

3.Override - Digi.1 [x/0/1]: x
4.Override - Digi.2 [x/0/1]: x
5.Override - Digi.3 [x/0/1]: x
6.Override - Sensor Fail [x/0/1]: x
7.Sens.Sel. OB/RA/HS/A2/A1/ST [0-5]: 5
8.Enable [0/1]: 1

```

To enter heater config menu type “R” on keyboard.

Return to main menu, press enter.

This menu gives information about how heater strategy is setup for heater out-

put.

Parameter	Range	Description
1. ON temp.	-40-80 °C	Temperature where heater output is active.
2. OFF temp.	-40-80 °C	Temperature where heater output is de-active
3. Override digi 1	x/0/1	Digital input can be setup to have impact on Heater function. X: No action 0: Heater off 1; Heater on
4. Override digi 2	x/0/1	Digital input can be setup to have impact on Heater function. X: No action 0: Heater off 1; Heater on
5. Override digi 3	x/0/1	Digital input can be setup to have impact on Heater function. X: No action 0: Heater off 1; Heater on
6. Override sensor fail	x/0/1	Sensor fail can be setup to have impact on Heater function. X: No action 0: Heater off 1; Heater on
7. Sens. Sel. OB/RA/HS/A2/A1/ST	0-5	Setup for which temperature sensor to control heater. 0: Onboard temperature sensor 1: Return air temperature sensor 2: Hotspot temperature sensor 3: Ambient 2 temperature sensor 4: Ambient 1 temperature sensor 5: Shelter temperature.
8. Enable	0/1	Enable/disable of heater function. 0:Disable 1: Enable.

Display humidity control Config

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

[Humidity Control Configuration]

```

1.Relative Humidity Entry           [40-100]: 40.0
2.Relative Humidity Exit            [40-100]: 0.0
3.Cooling Mode Fc/Std/Ps/Acon      [0-3]: 0
4.Temp. Set Point Offset            [-10-10]: 10
5.Sensor Position Int/Ext          [0/1]: 0
6.Enable                            [0/1]: 1

```

To enter heater config menu type “T” on keyboard.

Return to main menu, press enter.

This menu gives information about how humidity strategy is setup for cooling system

Parameter	Range	Description
1. Relative humidity entry	40-100%	Temperature where humidity function is active.
2. Relative humidity exit	40-100%	Temperature where humidity function is de-active.
3. Cooling mode FC/STD/PS /Acon	0-3	Specifies which cooling mode to be used when RH function is active. 0: Only free cooling 1: Standard mode. (Freecooling and A/C) 2: Power save mode. (Freecooling and A/C) 3: Only A/C
4. Tempr. Set point offset	-10-10 °C	Specifies set point offset when RH function is active. Can move set point up to 10 °C up/down.
5. Sensor position Int/Ext	0/1	Setup of RH sensor location. 0:Indoor. 1:Outdoor.
6. Enable	0/1	Enable/disable RH function.

		0:Disable. 1: Enable.
--	--	--------------------------

**Display control
Config**

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

[System Control Configuration]

1.Vdc Low entry	[18-60]:	42
2.Vdc Low exit	[18-60]:	48
3.Vdc High entry	[18-60]:	60
4.Vdc High exit	[18-60]:	60
5.Temp Low Limit	[(-40)-80]:	5
6.Temp High Limit 1	[(-40)-80]:	28
7.Temp High Limit 2	[(-40)-80]:	29
8.Temp High Limit 3	[(-40)-80]:	30
9.Temp Limit Hyst.	[(-20)-20]:	2
10.Humidity Low level	[0-100]:	60
11.Humidity Upper Level	[0-100]:	30
12.Filter Pressure Level 1	[60-400]:	100
13.Filter Pressure Level 2	[60-400]:	200
14.Filter Pressure Hyst.	[(0-400):	50
15.Cooling Zones	[1/2]:	1
16.Cooling Mode Fc/Std/Ps/Acon	[0-3]:	0
17.Neg. Cool Delta override	[0/1]:	1
18.Neg. Cool Delta hyst.	[-10 - 10]:	3
19.Cooling Delta	[-10 - 10]:	3
20.Shelter Temp(RA/HS/BOTH) [STsel]	[0-2]:	0
21.AC Lead/Lag (Dis/Ena) [LLe]	[0/1]:	0
22.Cooling Mode [XZone] Fc/Std/Ps/Acon	[0-3]:	1
23.Neg. Cool Delta override [XZone]	[0/1]:	1
24.Neg. Cool Delta hyst. [XZone]	[-10 -10]:	3
25.Cooling Delta [XZone]	[-10 - 10]:	3
26.Fan 1 - None/Zone1/2	[0/1/2]:	1
27.Fan 2 - None/Zone1/2	[0/1/2]:	2
28.A/C 1 - None/Zone1/2	[0/1/2]:	1
29.A/C 2 - None/Zone1/2	[0/1/2]:	2
30.Damper 1 - None/Zone1/2	[0/1/2]:	1
31.Damper 2 - None/Zone1/2	[0/1/2]:	2
32.Heater - None/Zone1/2	[0/1/2]:	1
33.Status Log Dis/Ena.	[0/1]:	1
34.Log interval in min.	[1-60]:	1
35.Alarm1 NO/NC Type	[0/1]:	0
36.Alarm2 NO/NC Type	[0/1]:	0
37.Alarm3 NO/NC Type	[0/1]:	0
38.Alarm4 NO/NC Type	[0/1]:	0
39.Alarm5 NO/NC Type	[0/1]:	0
40.Alarm6 NO/NC Type	[0/1]:	0

```

41.Alarm7 NO/NC Type           [0/1]: 0
42.Alarm8 NO/NC Type           [0/1]: 0
43.Alarm9 NO/NC Type           [0/1]: 0
44.Alarm10 NO/NC Type          [0/1]: 0
45.Alarm1 delay sec            [0-100]: 10
46.Alarm2 delay sec            [0-100]: 10
47.Alarm3 delay sec            [0-100]: 10
48.Alarm4 delay sec            [0-100]: 10
49.Alarm5 delay sec            [0-100]: 10
50.Alarm6 delay sec            [0-100]: 10
51.Alarm7 delay sec            [0-100]: 10
52.Alarm8 delay sec            [0-100]: 10
53.Alarm9 delay sec            [0-100]: 10
54.Alarm10 delay sec           [0-100]: 10
55.AC 1 NO/NC Type             [0/1]: 0
56.AC 2 NO/NC Type             [0/1]: 0
57.Dig.1 NO/NC Type            [0/1]: 0
58.Dig.2 NO/NC Type            [0/1]: 0
59.Dig.3 NO/NC Type            [0/1]: 0
60.Dig.2 Func.  OvrRd/SpOff/modex [0-2]: 0
61.Dig.3 Func.  OvrRd/SpOff/modex [0-2]: 0
62.Dig.2 SetPoint Offset        [-10 - 10]: 0
63.Dig.3 SetPoint Offset        [-10 - 10]: 0
64.Dig.2 Trigger mode Fc/Std/Ps/Acon [0-3]: 0
65.Dig.3 Trigger mode Fc/Std/Ps/Acon [0-3]: 0
66.Filter Grd 1 NO/NC Type      [0/1]: 0
67.Filter Grd 2 NO/NC Type      [0/1]: 0

68.Tempr. Unit Deg C/F         [0/1]: 0
69.Language English Dis/Ena    [0/1]: 1

```

To enter Control config menu type “Y” on keyboard.

Return to main menu, press enter.

This menu gives information about general setting for CC3000 controller.

Parameter	Range	Description
1. Vdc Low entry	18-60	Supply voltage low level system shut down
2. Vdc Low exit	18-60	Supply voltage low level system recover
3. Vdc High entry	18-60	Supply voltage high level system shut down
4. Vdc High exit	18-60	Supply voltage high level system recover
5. Temp Low limit	-40-80	Low temperature alarm limit.
6. Temp High limit 1	-40-80	High temperature alarm limit 1
7. Temp High Limit 2	-40-80	High temperature alarm limit 2

8. Temp High Limit 3	-40-80	High temperature alarm limit 3
9. Temp Limit hyst	-20-20	Temperature alarm limit hysteresis.
10. Humidity Low level	0-100	Humidity function low level threshold
11. Humidity upper level	0-100	Humidity function high level threshold
12. Filter Pressure level 1	60-400	Filter pressure drop alarm level 1. Pa.
13. Filter Pressure level 2	60-400	Filter pressure drop alarm level 2. Pa.
14. Filter Pressure hyst.	0-400	Filter pressure drop alarm level hysteresis.
15. Cooling Zones	1-2	Defines 1 or 2 cooling zones in operation.
16. Cooling mode	0-3	Defines cooling mode of system. 0:Free cooling mode. Low power consumption 1:Standard mode (Interchange between free cooling or A/C). Medium/high power consumption. 2:Power save mode. First priority free cooling, second priority A/C. Medium power consumption. 3:A/C mode. High power consumption.
17. Neg. Cool delta override	0-1	Enables/disables negative cooling delta override function. Prevent free cooling system to operate if ambient temperature is higher than room temperature – hysteresis. 0:Disabled 1:Enabled
18. Neg. Cool delta hyst.	-10-10	Defines the hysteresis of the negative cooling delta override. See point 17.
19. Cooling delta	-10-10	Defines the minimum temperature difference between the cooling set point and ambient temperature, to switch between free cooling or A/C, if standard mode is configured.
20. Shelter Temp.	0-2	Shelter temperature is the controlling parameter. Shelter temperature can be defined as following. 0:Return air sensor. 1:Hotspot sensor. 2:Highest of return air or hotspot.
21. AC	0/1	Enables/disables lead/lag function on aircon-

Lead/lag		ditioner. If two airconditioners are connected, running them in lead/lag will result in even wear. 0:Disabled 1:Enabled
22. Cooling mode Xzones	0-3	Defines cooling mode of extra system zone if dual zone is enabled. 0:Free cooling mode. Low power consumption 1:Standard mode (Interchange between free cooling or A/C). Medium/high power consumption. 2:Power save mode. First priority free cooling, second priority A/C. Medium power consumption. 3:A/C mode. High power consumption.
23. Neg. Cool Delta override Xzone	0-1	Enables/disables negative cooling delta override function. Prevent free cooling system to operate if ambient temperature is higher than room temperature – hysteresis. 0:Disabled 1:Enabled
24. Neg. Cool Delta Hyst. Xzones	-10-10	Defines the hysteresis of the negative cooling delta override. See point 23.
25. Cooling delta Xzones	-10-10	Defines the minimum temperature difference between the cooling set point and ambient temperature, to switch between free cooling or A/C, if standard mode is configured.
26. Fan1 Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone 1: Cooling Zone 1 2: Cooling Zone 2
27. Fan 2 Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone 1: Cooling Zone 1 2: Cooling Zone 2
28. A/C 1 Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone

		1: Cooling Zone 1 2: Cooling Zone 2
29. A/C 2 Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone 1: Cooling Zone 1 2: Cooling Zone 2
30. Damper 1 Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone 1: Cooling Zone 1 2: Cooling Zone 2
31. Damper 2 Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone 1: Cooling Zone 1 2: Cooling Zone 2
32. Heater Zone	0/1/2	Definition of which zone the module belongs to. Module can also be used as stand alone with individual settings. 0: stand alone 1: Cooling Zone 1 2: Cooling Zone 2
33. Status log	0/1	Enable/disable of logging function. If enabled controller will dump operational data on SD card with predefined log interval.
34. Log interval	1-60	Logging interval. See point 33.
35. Alarm 1	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
36. Alarm 2	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
37. Alarm 3	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
38. Alarm 4	0-1	Normally open / normally closed configuration

		of alarm dry contact output. 0:NO 1:NC
39. Alarm 5	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
40. Alarm 6	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
41. Alarm 7	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
42. Alarm 8	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
43. Alarm 9	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
44. Alarm 10	0-1	Normally open / normally closed configuration of alarm dry contact output. 0:NO 1:NC
45. Alarm 1 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
46. Alarm 2 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
47. Alarm 3 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
48. Alarm 4 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
49. Alarm 5 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
50. Alarm 6 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
51. Alarm 7 de-	0-100	Hardware alarm output delay in seconds.

lay		Defines time from error occurs to alarm output is activated.
52. Alarm 8 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
53. Alarm 9 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
54. Alarm 10 delay	0-100	Hardware alarm output delay in seconds. Defines time from error occurs to alarm output is activated.
55. AC 1 contact type	0-1	Air conditioner dry contact output can be configured as normally open or normally closed. 0:NO 1:NC
56. AC 2 contact type	0-1	Air conditioner dry contact output can be configured as normally open or normally closed. 0:NO 1:NC
57. Dig 1 input type	0-1	Digital input can be configured as normally open or normally closed. 0:NO 1:NC
58. Dig 2 input type	0-1	Digital input can be configured as normally open or normally closed. 0:NO 1:NC
59. Dig 3 input type	0-1	Digital input can be configured as normally open or normally closed. 0:NO 1:NC
60. Dig 2 function	0-2	Configuration of digital input function. 0:Normal override mode. (defined in modules) 1:Setpoint offset (See point 62/63) 2:Mode change. (See point 16)
61. Dig 3 function	0-2	Configuration of digital input function. 0:Normal override mode. (defined in modules) 1:Setpoint offset (See point 62/63) 2:Mode change. (See point 16)
62. Dig 2 setp offset	-10-10	Configuration off cooling set point offset.
63. Dig 3 setp offset	-10-10	Configuration off cooling set point offset.
64. Dig 2 trig-	0-3	Configuration of operational mode change

ger mode		0:Free cooling 1:Standard 2:Power save 3: A/C See point 16.
65. Dig 3 trigger mode	0-3	Configuration of operational mode change 0:Free cooling 1:Standard 2:Power save 3: A/C See point 16.
66. Filter Grd 1	0-1	Configuration of filter guard input. Can be set to normally open or normally closed. 0:NO 1:NC
67. Filter Grd 2	0-1	Configuration of filter guard input. Can be set to normally open or normally closed. 0:NO 1:NC
68. Tempr. Unit C/F	0-1	Setting of temperature unit Celcius or Fahrenheit. 0:Celcius 1:Fahrenheit
69. language	0-1	

Display Alarm Config

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

[Alarm Mapping Configuration]

Error	<->	Alarm		1		2		3		4		5		6		7		8		9		10		
1.Voltage Low		[PSM]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
2.Voltage High		[THL]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
3.Tempr Low		[F1]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
4.Tempr Limit 1		[F2]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
5.Tempr Limit 2		[F3]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
6.Tempr Limit 3		[OS]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
7.Humid. Low		[RS]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
8.Humid. High		[AS]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
9.Fltr Pressure 1		[SS]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
10.Fltr Pressure 2		[CS]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0
11.Fan 1		[D1]	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0	:	0

```

12.Fan 2           [D2]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
13.Onboard Sens   [DX]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
14.Room Sens      [FG]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
15.Hotspot Sens   [PI]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
16.Ambient 1 Sens [PI]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
17.Ambient 2 Sens [PI]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
18.Dig 1 I/P      [AS]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
19.Dig 2 I/P      [SS]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
20.Dig 3 I/P      [CS]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
21.Filter I/P 1   [D1]: 1 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
22.Filter I/P 2   [D2]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
23.Network        [DX]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
24.Int storage    [FG]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0
25.SD Card        [PI]: 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0 : 0

```

Note; Only Alarm 1 and 2 accepts Mutiple Error

To enter Alarm config menu type “A” on keyboard.
Return to main menu, press enter.
This menu gives information about Alarm mapping for CC3000 controller.

Parameter	Range	Description
1. Voltage Low		Low voltage error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
2. Voltage High		High voltage error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
3. Tempr Low		Room temperature low error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
4. Tempr. Limit 1		Room temperature limit 1 error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
5. Tempr. Limit 2		Room temperature limit 2 error. Threshhold is set in control config menu.

		Error can be routed to any alarm output from 1-10.
6. Tempr. Limit 3		Room temperature 3 error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
7. Humid. Low		Room humidity Low error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
8. Humid. High		Room humidity High error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
9. Fltr. pressure 1		Analog filter pressure 1 error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
10. Fltr. pressure 2		Analog filter pressure 2 error. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
11. Fan 1		Fan 1 error. Missing rotation feedback or wrong RPM value. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
12. Fan 2		Fan 2 error. Missing rotation feedback or wrong RPM value. Threshhold is set in control config menu. Error can be routed to any alarm output from 1-10.
13. Onboard sens.		Onboard temperature sensor error.

		Sensor open or short circuit. Error can be routed to any alarm output from 1-10.
14. Room sens.		Room temperature sensor error. Sensor open or short circuit. Error can be routed to any alarm output from 1-10.
15. Hotspot sens.		Hotspot temperature sensor error. Sensor open or short circuit. Error can be routed to any alarm output from 1-10.
16. Ambient 1 sens.		Ambient 1 temperature sensor error. Sensor open or short circuit. Error can be routed to any alarm output from 1-10.
17. Ambient 2 sens.		Ambient 2 temperature sensor error. Sensor open or short circuit. Error can be routed to any alarm output from 1-10.
18. Dig 1 I/P		Digital 1 input active. Can be routed to any alarm output from 1-10.
19. Dig 2 I/P		Digital 2 input active. Can be routed to any alarm output from 1-10.
20. Dig 3 I/P		Digital 3 input active. Can be routed to any alarm output from 1-10.
21. Filter I/P 1		Filter 1 error. Can be routed to any alarm output from 1-10.
22. Filter I/P 2		Filter 2 error. Can be routed to any alarm output from 1-10.
23. Network		
24. Int storage		Internal memory error. Can be routed to any alarm output from 1-10.
25. SD card		SD card error. Can be routed to any alarm output from 1-10.

Display Network Config

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

[Network Parameters Configuraiton]

```

1.DHCP Enable [0/1]: 1
2.IP ADDRESS : 0.0.0.0
3.Subnet Mask : 0.255.255.0
4.Default Gateway : 192.168.1.0
5.NTP Server IP : 192.168.1.0
6.SNMP Port [Def. 161] : 161
7.SNMP Trap Mngr 1 : 10.45.9.0
8.SNMP Trap Mngr 1 Port [Def. 162] : 162
9.SNMP Trap Mngr 2 : 10.45.9.0
10.SNMP Trap Mngr 2 Port [Def. 162] : 162
11.SNMP Trap Mngr 3 : 10.40.55.22
12.SNMP Trap Mngr 3 Port [Def. 162] : 162
13.SNMP Community Name [16 Character]: public
14.Host Name [16 Character] : CC3000
15.User Name [8 Character] : admin
16.Password [8 Character] : admin
    
```

To enter Network config menu type “N” on keyboard.

Return to main menu, press enter.

This menu gives information about network settings for CC3000 controller.

Parameter	Range	Description
1. DHCP enable	0-1	Dynamic or static IP address. 0:Static 1:Dynamic
2. IP adress		IP address used if static IP function is enabled.
3. Subnet mask		Used if static IP address function is enabled
4. Default gateway		Used if static IP address function is enabled
5. NTP server IP		IP address of network time protocol server.
6. SNMP port		Default port definition for SNMP function. 161

7. SNMP Trap Mngr 1		IP address of SNMP trap manager 1
8. SNMP trap Mngr 1 port		Default port definition for SNMP trap manager 1 162
9. SNMP Trap Mngr 2		IP address of SNMP trap manager 2
10. SNMP trap Mngr 2 port		Default port definition for SNMP trap manager 2 162
11. SNMP Trap Mngr 3		IP address of SNMP trap manager 3
12. SNMP trap Mngr 3 port		Default port definition for SNMP trap manager 3 162
13. SNMP Community name		Default community name: public
14. Host name		Name of host controller.
15. User name		Default user name for login: admin
16. Password		Not used.

Display Operation info.

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “V”

[Operation Durations]

```

[ Hour | Minute ]
1.Fan 1      :   17   11
2.Fan 2      :   17   11
3.Air Con 1  :    0    0
4.Air Con 2  :    0    0
5.Damper     :    0    0
6.Heater     :    0    0

```

To enter operation info menu type “T” on keyboard.

Return to main menu, press enter.

This menu gives information about operational hours on fans, A/C, damper, heater.

Parameter	Range	Description
1. Fan 1		Operational hours and minutes of Fan 1
2. Fan 2		Operational hours and minutes of Fan 2
3. Air Con 1		Operational hours and minutes of Air conditioner 1
4. Air Con 2		Operational hours and minutes of Air conditioner 2
5. Damper		Not used.
6. Heater		Operational hours and minutes of Heater.

Display Night program info.

Menu gives access to information , no editing is possible.
To edit parameters, use configure system menu “C”

[Night Mode Control Configuration]

```

1.Start Time [hh/mm]: 23:15
2.End Time [hh/mm]: 02:45
3.Max Fan Speed Rpm % [0-100]: 100
4.Set Point Offset [-10-10]: 10
5.Cooling Mode Fc/Std/Ps/Acon [0-3]: 0
6.Enable [0/1]: 1

```

To enter Night program info menu type “P” on keyboard.
Return to main menu, press enter.
This menu gives information about Night cooling settings.

Parameter	Range	Description
1. Start time	hh/mm	Start time for night mode operation.
2. End time	hh/mm	End time for night mode operation
3. Max Fan speed RPM	0-100	Fan speed reduction during night time.
4. Set point offset	-10-10	Cooling setpoint offset during night time.
5. Cooling mode	0-3	Cooling mode during night time. 0:Free cooling.

		1:Standard 2:Power save 3:Air condition.
6. Enable	0-1	Enable/disable of night time function. 0:Disable 1:Enable

Display Error status

Menu gives access to information , no editing is possible.

```
[Error Status]
V Low: 1      RH High: 0      Hotspt Sens: 1      Fltr Dig2: 0
V Hgh: 0      Fltr Anal: 0     Amb1 Sens: 1       N/W : 0
Temp Low: 0   Fltr Ana2: 0     Amb2 Sens: 1       NVM : 0
Tempr H1: 0   Fan1: 0          Dig1: 0            SD Crd: 0
Tempr H2: 0   Fan2: 0          Dig2: 0
Tempr H3: 0   Obd Sens: 0     Dig3: 0
RH Low : 0    Room Sens: 0     Fltr Dig 1: 0

[Masked Error Status]
V Low: 1      RH High: 0      Hotspt Sens: 0      Fltr Dig2: 0
V Hgh: 0      Fltr Anal: 0     Amb1 Sens: 0       N/W : 0
Temp Low: 0   Fltr Ana2: 0     Amb2 Sens: 0       NVM : 0
Tempr H1: 0   Fan1: 0          Dig1: 0            SD Crd: 0
Tempr H2: 0   Fan2: 0          Dig2: 0
Tempr H3: 0   Obd Sens: 0     Dig3: 0
RH Low : 0    Room Sens: 0     Fltr Dig 1 : 0
```

To enter Error status menu type “L” on keyboard.
Return to main menu, press enter.
This menu gives information about system errors.

Parameter	Range	Description
1. V Low	0-1	Low DC voltage error
2. V Hgh	0-1	High DC voltage error
3. Temp low	0-1	Room low temperature error
4. Tempr H1	0-1	Room high temperature 1 error
5. Tempr H2	0-1	Room high temperature 2 error
6. Tempr H3	0-1	Room high temperature 3 error

7. RH Low	0-1	Low humidity error
8. RH High	0-1	High humidity error
9. Fltr Ana1	0-1	Filter 1 pressure drop error
10. Fltr Ana2	0-1	Filter 2 pressure drop error
11. Fan1	0-1	Fan 1 error
12. Fan2	0-1	Fan 2 error
13. Obd sens	0-1	Onboard temperature sensor error
14. Room sens	0-1	Room temperature sensor error
15. Hotspot sens	0-1	Hotspot temperature sensor error
16. Amb1 sens	0-1	Ambient temperature sensor 1 error.
17. Amb2 sens	0-1	Ambient temperature sensor 2 error.
18. Dig1	0-1	Digital 1 input
19. Dig2	0-1	Digital 2 input
20. Dig3	0-1	Digital 3 input
21. Fltr Dig 1	0-1	Filter guard 1
22. Fltr Dig 2	0-1	Filter guard 2
23. N/W	0-1	Nor flash error
24. NVM	0-1	Eeprom error
25. SD Crd	0-1	SD card error

Configure system Menu gives access to editing all control parameters.
Requires password. (Default password is 0000)

Configuration/Settings Menu

```

1 - Fan 1           2 - Fan 2
3 - Damper 1       4 - Damper 2
5 - A/C 2           6 - A/C 1
7 - Heater          8 - Humidity
9 - System          10 - Alarm
11 - Night Pgm     12 - Network
Q - Quit           X - Save & Quit

```

To enter Configure system menu type “C” on keyboard.

Controller will prompt for password. Type in valid password to get access to menu.

Return to main menu, press enter.

This menu gives access to all control parameters.

To enter relevant module settings type corresponding number and press enter.

See above sections for display menus to navigate and setting up parameters.

Parameters are changed by typing in respective line number followed by semi-colon and enter.

Eks. Change fan 1 off temperature setting:

Type 1 enter. (Will enter fan 1 parameter menu)

Type 1;10 enter. (changes fan 1 off temp. setting to 10 °C)

Type x. (Will save and exit to configuration menu)

Type x. (Will save and quit to main menu.)

In parameter setting sub menus following commands are available.

E - Existing Config. U - Updated config.
Q - Quit X - Save & Quit

E: Will show existing parameters.

U: Will show edited parameters

Q: Will quit menu without saving parameter changes.

X: Will save and quit menu.

Parameter	Range	Description
1. Fan 1		Parameter settings for Fan 1 control strategy
2. Fan 2		Parameter settings for Fan 2 control strategy
3. Damper 1		Parameter settings for damper 1 control strategy
4. Damper 2		Parameter settings for damper 2 control strategy
5. A/C 1		Parameter settings for air conditioner 1 control strategy
6. A/C 2		Parameter settings for air conditioner 2 control strategy
7. Heater		Parameter settings for heater control strategy
8. Humidity		Parameter settings for humidity control strategy
9. System		System control parameter settings
10. Alarm		Configuration of hardware alarm outputs
11. Night Pgm		Parameter settings for night mode.
12. Network		Network settings

Dump config to SD card

Menu will dump present controller configuration file to SD card.
Requires presence of SD card in SD card socket.
Type “X” to initiate function.

Password change

Change of default password can be done using this function.
Type in “X”, and controller will prompt for present password.

Eks.

```
x
-----

Enter Password:
0000

Password Verified

Enter New Password
Q - Quit
1111
Retype New Password Again
1111
Updated Password
```

Operation info re-set

Operational counters can be reset using this menu.
Type in “V” to enter menu.
Controller will prompt for password

To change counter values type line number followed by semicolon and new value.

Eks.

Type 1;5;4 enter (Will change fan 1 operational counter value to 5 hours and 4 minutes.

Type “X” for save and quit.

```
v
-----
```

Enter Password:

1111

Password Verified

[Operation Durations]

	[Hour		Minute]
1.Fan 1	:	17		11	
2.Fan 2	:	17		11	
3.Air Con 1	:	0		0	
4.Air Con 2	:	0		0	
5.Damper	:	0		0	
6.Heater	:	0		0	

E - Existing Data. U - Updated config.
Q - Quit X - Save & Quit

Config serial numbers

Serial number of system modules like Flexibox and A/C can be typed in using config serial number menu.

Type “B” to enter menu.
Controller will prompt for password.

CC (Controller) serial number cannot be edited.

See section Display serial No. info, for details about input.

b

Enter Password:

1111

Password Verified

[Serial Number Information]

1.CC	Sn. :	
2.Fan 1	Sn. :	
3.Fan 2	Sn. :	
4.A/C 1	Sn. :	
5.A/C 2	Sn. :	

E - Existing Data. U - Updated config.
Q - Quit X - Save & Quit

Eks.

Change Fan 1 Sn. to 123456789.

Type 2;123456789 enter (Line number followed by Sn. and enter)

Set RTC calendar

Clock and calendar can be setup manually using this menu.
To prevent clock and calendar settings to be reset when controller is without DC supply, a small coin cell battery CR2032 must be installed in controller.
If controller is connected to a network, date and time can be retrieved from a network time server. NTP.

To enter menu type “K”.
Controller will prompt for password.
Type in clock and date followed by enter.

Type in clock and date in following format.

DD/MM/YYYY/HH/MM

Eks.

k

Enter Password:

1111

Password Verified

Calendar - 15/4/2016 Time - 13.13

Enter Date and Time: DD/MM/YYYY/HH/MM

X - Exit
