EC Vent

GB User Manual

Contents

1 Warnings

The following admonitions will be presented in the different sections of the document.

⚠ **Danger**
• Make sure that the Mains supply to the unit is disconnected before performing any maintenance or electrical work!
• All electrical connections must be carried out by an authorized installer and in accordance with local rules and regulations.

2 Product Description

2.1 Room unit

The objective of the room unit is to display the information provided by the installed sensors and make it possible for the user to enter desired settings. The room unit is equipped with 2 internal sensors; Temperature and humidity sensor, which register the temperature and humidity in the location of the installed room unit. It is possible to connect 2 extra sensors to the internal connection block.

Up to 10 room units can be active simultaneously.

Note:

The installed room units can only be regulated one by one. It is not possible to perform settings on two or more controls simultaneously!

In order for the room unit to function the control board needs to be installed and connected. See "Installation Instructions" for more information.
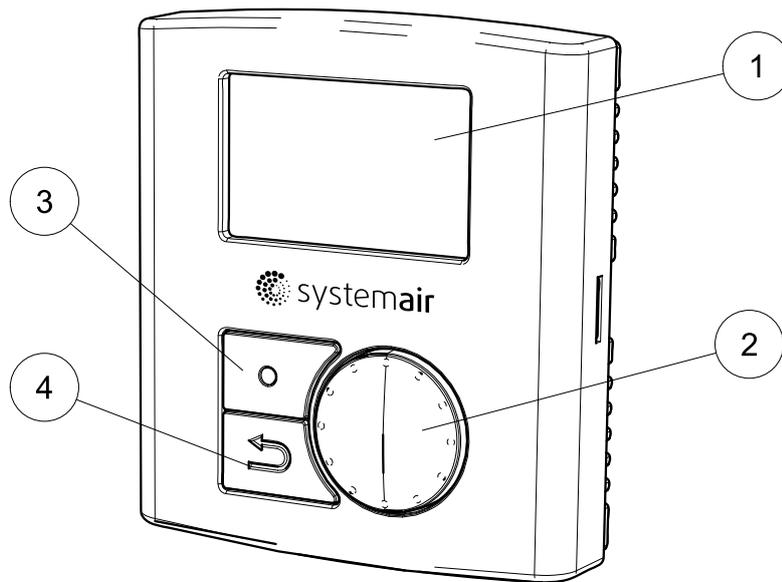
Fig. 1 Room unit components

Position	Description	Explanation
1	Display	Shows symbols, menus and settings
2	Selection knob	Move through the menu lists or change settings and values by turning the knob left or right
3	Confirm button	Confirm menu choices or settings by pressing the button
4	Back button	Step back in the menu levels by pressing the button

2.1.1 Display Symbols

Symbol	Description	Explanation
	Fan speed	Illustrates the current set fan speed. The speed setting is stepless or in steps determined by the user. The speed is also displayed as percentage of the maximum fan speed at the bottom of the display (valid if manual mode is selected) Empty symbol equals stopped fan and completely filled symbol equals maximum speed (100%) The fan speed can be set manually by turning the selection knob while in manual mode.
	Temp set	Illustrates the current set temperature. Temperature icon is connected to the set point for the heater/cooler. If no heater/cooler controller is activated the icon indicates the setting of the first temperature controller for the fan. If there are no temperature controllers in the system the temperature icon is not shown. The temperature is set in steps of 0,5°C and can be changed manually by turning the selection knob.
	Service	Access to the service/setup menu by pressing the confirmation button Login to "Service" with "1111" and to "Setup" with "2222".
	Alarm	Shows only if an alarm is active and not blocked. Icon is flashing when an alarm is active
	Check box	Used to marked selectable and selected items (unmarked and marked boxes).
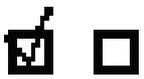
3 Operation

3.1 Before starting

Before starting up the system make sure you have checked the following:

- That the equipment is installed according to the installation instructions
- That the correct accessories are used for the intended function
- That you have read and understood this manual.

3.1.1 Start up wizard

The Start up Wizard is a step-by-step configuration tool that starts automatically when the EC-Vent is powered up for the first time or when:

- a factory reset is performed
- a new print card is installed (spare part)

An EC-Vent Wizard quick set up guide is available (E8256)

3.1.2 Procedure

1. Turn the SELECTION knob to choose language and press ENTER.	EC-Vent Wizard Languages English
2. Set date and time.	EC-Vent Wizard Time and day Mon 08:00
3. Select controller	Controller type Manual control Temperature CO^2 Humidity Pressure Flow Slave Advanced setup

3.2 Program overview

The program interface is separated in three levels.

- User level is intended to be used by any user of the system. It's only possible to change a limited number of parameters

- Service level is intended to be used by persons with some knowledge of the system. For example care taker or similar

- Installation level is used for advanced setting and is intended for the installation personnel that do the initial setup of the complete system.

3.2.1 Navigation

The room unit has two buttons and a knob.

- Menu selector (choose function and move in menus)

- Confirm (button to confirm choice)

- Back (button to go back in menu level)

Items in the menu that lead to a sub menu level are marked with >>. Items that lead to a menu with changeable items are marked with>. Changeable Parameters and values in menus are marked with underscore. When turning the knob the selected value is marked with inverted background colour. The Confirm button will enable changes of value, this is indicated by flashing the inverted background colour on and off.

After a value has been changed the change must be confirmed with the Confirm button. If the back button is used the value will go back to previous. Inactivity for 1 min. is the same as selecting back button.

The display back light will be activated from any user input. The back light goes off after 1 min. of inactivity except for the adjusting menu where the back light is always on

The password menu has a time out of 15 sec.

3.2.2 User menu

The control mode list shows activated selection. If only manual is chosen and a manual controller is selected the controller mode menu is not shown

Manual controller setting menu has no time out.

The temperature icon is connected to the set point for the heater/cooler. If no heater/cooler controller is activated the icon is connected to the first temperature controller for the fan. If there are no temperature controllers in the system the temperature icon is not shown. The Alarm icon flashes in case of alarm and an alarm message is shown; if more than one alarm is activated the messages alternate.

In the bottom of the display the actual operate mode is shown.

This can be:

• Auto

• Boost: 00:30 (remaining time counter, in this example the remaining boost time is 30 minutes)

• Extended time: 00:30 (remaining time counter, in this example the remaining extended time is 30 minutes)

• Away

• Manual: (If the controller is set to stepless the fan signal output is shown in %. If step controller is selected the selected step is shown.) The manual speed is shown if a manual controller is activated and the system is in auto mode.

3.2.2.1 Sleep Mode

If the sleep mode is activated the system will go to sleep mode 5 min. after last user interaction, except when the adjusting menu is selected. When the system is in sleep mode any user input will change the system to user menu. If a user password is selected a password question will appear.

3.2.2.2 Operation mode

`Boost`: When entering the `Boost` function a default time is shown and a time field is selected for edit. (Boost speed is equal to 100% fan speed)

Default time is set in `User interface menu`

1. Select a time with the selection knob, confirm the time and the timer starts

2. Return to main menu with the back button or time out

3. Text `Boost` and remaining time is shown under the display icons

`Extended time`: Disables the effect of the schedule. If no schedule is programmed the function is hidden. Same function and procedure as `Boost` function.

`Away`: Activates the away speed. Is Aborted by selection of boost, extended time or auto mode. Away speed is set in User interface menu.

`Auto`: Return to Auto mode.

`Manual`: Activate fixed speed with manual setting. Can be step or stepless. The menu for changing speed has no time out. The fan speed can be higher than the set manual speed if a separate room unit (up to 10 pcs of RU can be installed) gives a higher signal to the fan.

3.2.3 User Overview
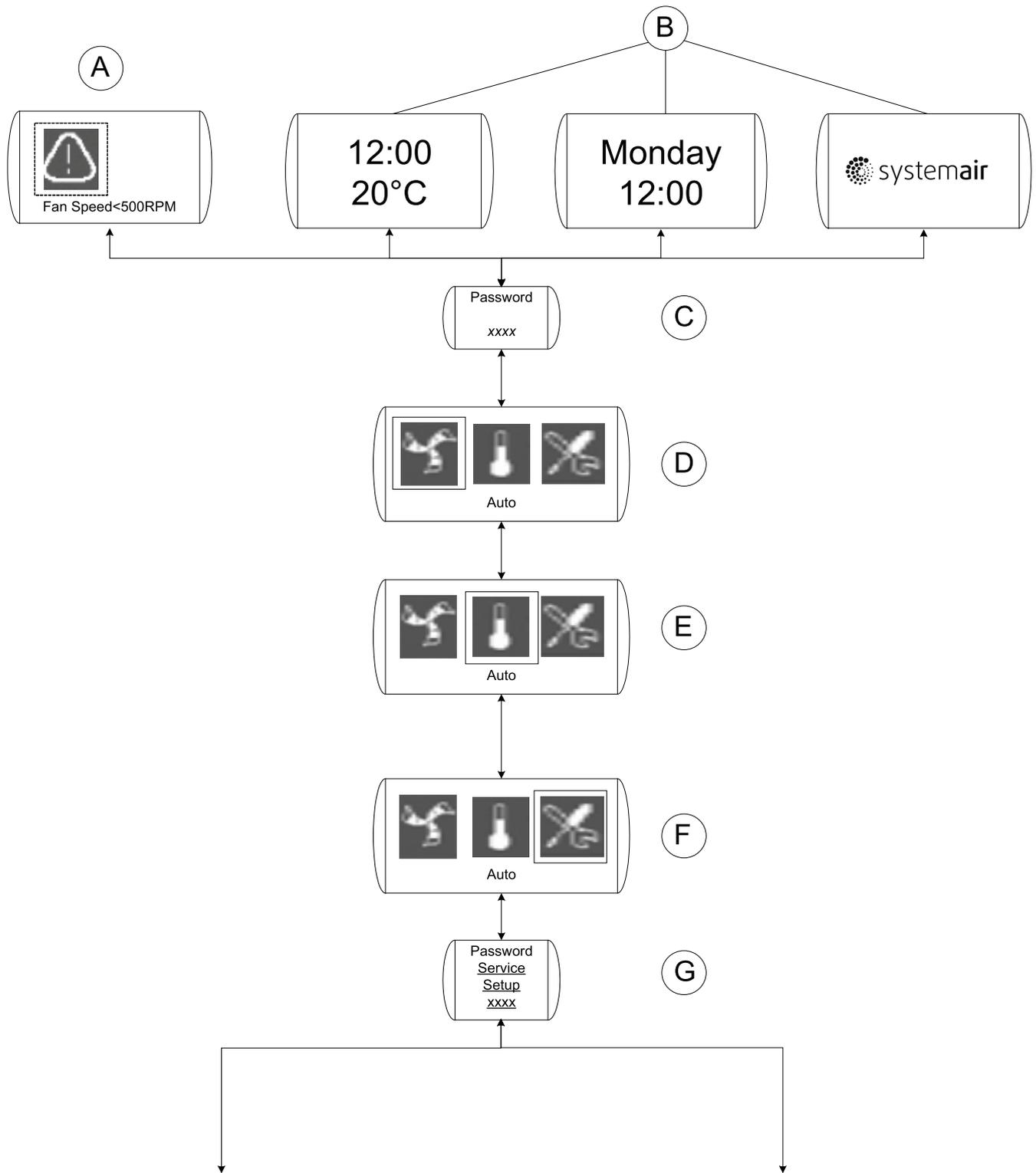
Fig. 2 User overview

Table 1: Explanations User overview

Position	Description (figure 2)
A	Shows a warning symbol with the text `Fan speed <500 rpm`. Indicates that no fan speed setting has been made
B	Sleep mode display option. Will be shown after 5 min. of inactivity if the function is activated.
C	User password Displayed after pressing the confirmation button when standing in sleep mode (chapter 3.2.6.1)
D	Symbol has different meaning: If manual mode is activated (chapter 3.2.13) the symbol will change according to the actual fan speed If Away, Auto or Boost mode is chosen the symbol will be filled accordingly (low, nominal, high). For more info. (chapter 2.1.1 and chapter 3.2.4).
E	Symbol has different meaning: If no temperature control or heater/cooler is used then the symbol will not be visible If a heater/cooler is installed the desired working point of the heater/cooler can be changed here. If the fan is controlled with the help of a temperature sensor you can change the desired temperature between the Max/Min set point here. If a fixed set point has been chosen the symbol is visible but no changes can be done (chapter 2.1.1 and chapter 3.2.10).
F	Push to enter either the installation mode or the service mode
G	Write the password for the mode you want to enter

3.2.4 User Menu Auto Mode

Boost ☑
Auto ☐
Extentend ☐
Away ☐
Manual ☐

Boost
Duration *00:30*

A

Auto

Boost ☐
Auto ☑
Extentend ☐
Away ☐
Manual ☐

B

Boost ☐
Auto ☑
Extentend ☐
Away ☐
Manual ☐

Extended time.
Duration *00:30*

F

Boost ☐
Auto ☐
Extentend ☐
Away ☑
Manual ☐

G

Boost ☐
Auto ☑
Extentend ☐
Away ☐
Manual ☐

Fan speed 33%

H

C
Set temp /Fixed temp set

Fan step 1

I

D
Setting

E
Fan Speed<500RPM

Password
Service
xxxx
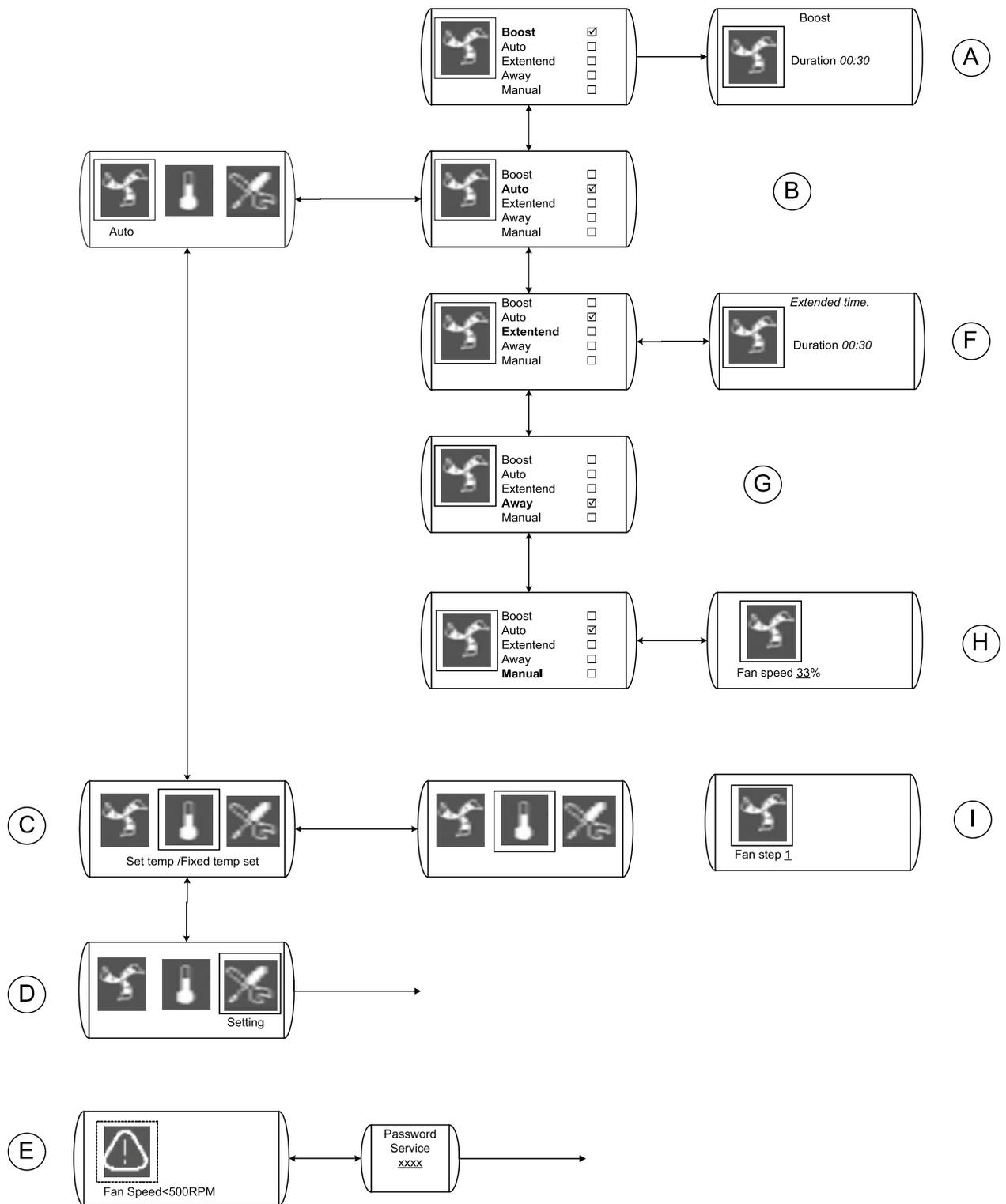
Fig. 3 Auto Mode

Table 2: Explanations User menu Auto mode

Position	Menu Headline	Description (figure 3)
A	`Boost`	Activate the `Boost` function. For more info. (chapter 3.2.2.2 and chapter 3.2.7)
B	`Auto`	Abort away, boost or extended time. The fan will then be controlled by the installed sensors and/or week schedule. For more info. (chapter 3.2.2.2 and chapter 3.2.6.1).
C	`Set temp/Fixed temp set`	Change set point of heater/cooler controller or temperature controlled fan.
D	`Setting`	Push to enter either the installation mode or the service mode
E	`Alarm`	Alarm Symbol appears if there is an active alarm (chapter 3.2.8).
F	`Extended time`	Activate the `Extended time` function. For more info. (chapter 3.2.2.2 and chapter 3.2.7).
G	`Away`	Activate the `Away` function. For more info. (chapter 3.2.2.2 and chapter 3.2.7).
H	`Manual`	If manual mode is chosen the fan can be controlled in a stepless mode if this mode is chosen (chapter 3.2.13).
I	`Fan step 1`	If manual mode is chosen the fan can be controlled in a step mode if this mode is chosen (chapter 3.2.13).

3.2.5 Service Menu
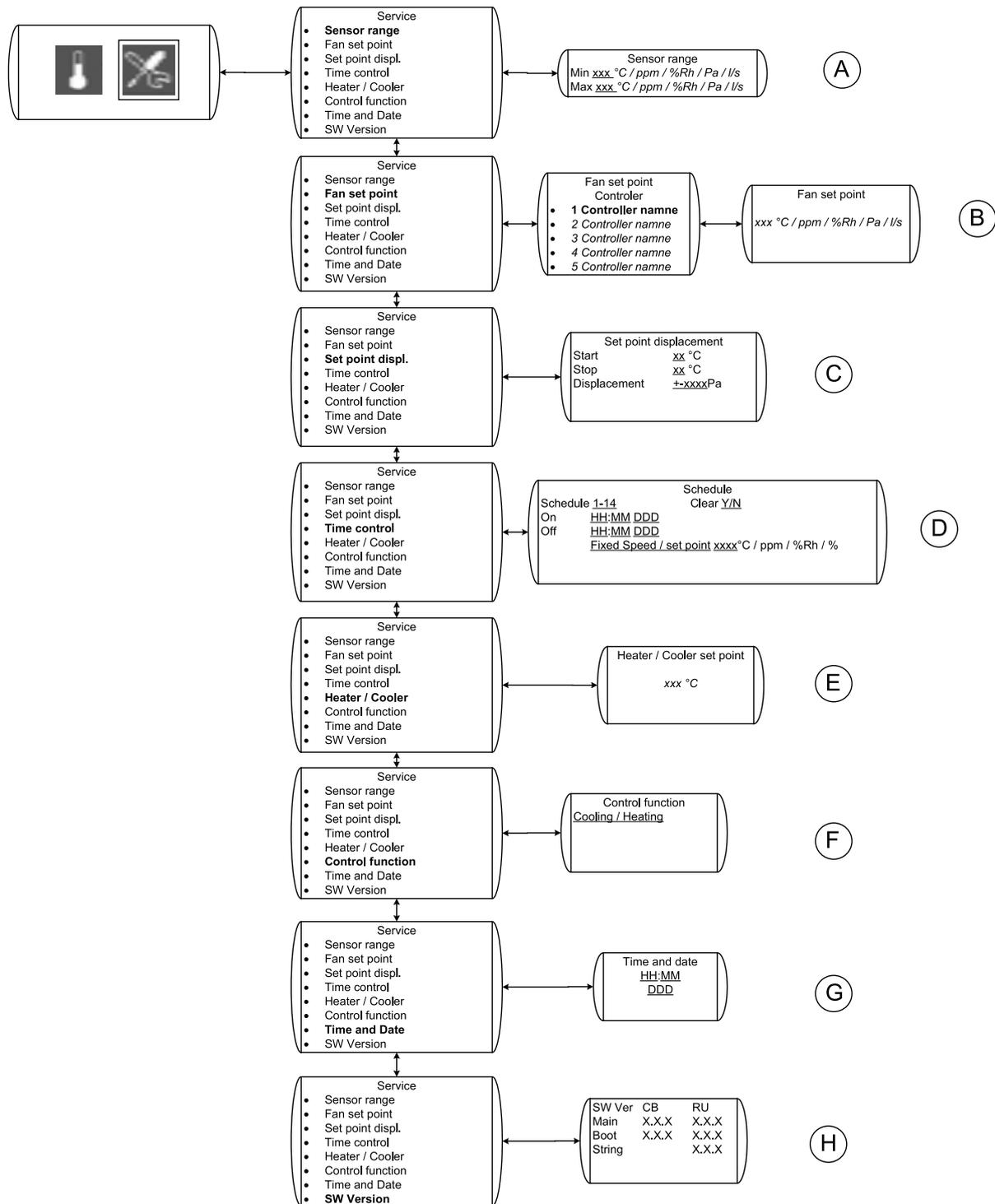
Fig. 4 Service Menu

Table 3: Explanations

Position	Menu Headline	Description (figure 4)
A	`Sensor range`	Set the measurement range of the sensor, e. g 0-200 Pa.

B	`Fan set point adjustment`
	
	`Controller name`
	
	`Fan set point`
		Service menu gives you the possibility to change some basic features.
		
		Chose for which controller function you want to change the set point for. The different controller functions has to be set in the installation menu before the appear here (chapter 3.2.6).
		
		Change the fan set point so that the fan always works towards achieving the preset set point. The set point has to be within the pre-defined range, see section that corresponds to the desired control mode.

C	`Set point disp.`	Set point setting shall be adjusted according to measured temperature if such function is selected. E.g. pressure/flow control shall be reduced in case of low outdoor temperature.
D	`Time control`	Activate week schedule and its functions.
E	`Heater/Cooler set point`	Choose the desired set point for the heater/cooler. If no heater/cooler has been installed this option will not be shown (chapter 3.2.19).
F	`Control function`	Choose desired function, `Cooling/Heating`
G	`Time and Date`	Change the time and date
H	`SW Version`	Software version

3.2.6 Installation

3.2.6.1 Installation-1
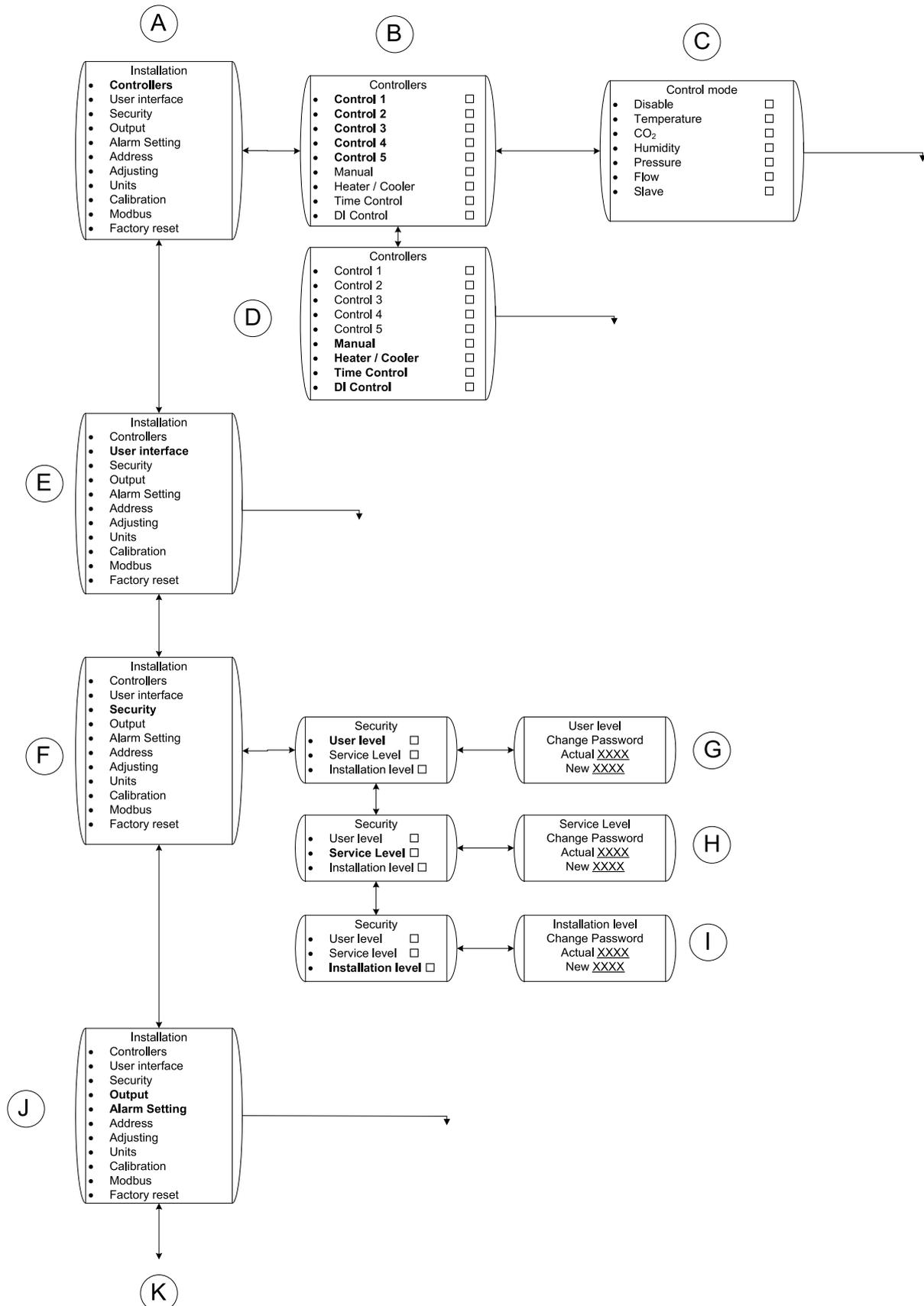
Fig. 5 Installation-1

Table 4: Explanations installation-1

Position	Menu Headline	Description (figure 5)
A	Installation	Installation, main menu options
B	Controllers	Control 1-5 gives you the possibility to run the fan with the help of 5 different sensors, either simultaneously or individually. The fan will be controlled by the sensor that gives the fan the highest output.
C	Control mode	Choose what kind of control mode for the fan that will be used. Slave control allows the fan speed to be controlled from a main control system (chapter 3.2.10, chapter 3.2.11, chapter 3.2.12, chapter 3.2.15, chapter 3.2.17, chapter 3.2.18).
D	Manual control Heater/Cooler control Time control DI control	Manual control – Set if you want the fan to be manually controlled (chapter 3.2.13). Heater/Cooler control – Set if you want EC Vent to control a heater or cooler (chapter 3.2.19). Time control – Set if you want the fan to be controlled with a week schedule (chapter 3.2.14). Digital control – Set if you want the fan to be controlled with a digital input, e.g. PIR sensor (chapter 3.2.16).
E	User interface	Sets functions that are available in the user menu. A disabled function will be hidden. Setting of the user interface is individual for each room unit in the system (chapter 3.2.7).
F	Security	Change password for the different levels in the system. Password 0000 disables the password question
J	Alarm setting	Output – Possibility to set an output signal (Digital/Analogue) e.g. Alarm output if fan speed is to low or analogue (0-10V) signal to another fan (chapter 3.2.20). Alarm settings – Possibility to do alarm settings (chapter 3.2.21).
K		Continuation

3.2.6.2 Installation-2

K

A

Installation
- Controllers
- User interface
- Security
- Output
- Alarm Setting
- **Address**
- Adjusting
- Units
- Calibration
- Modbus
- Factory reset

Address

1

B

Installation
- Controllers
- User interface
- Security
- Output
- Alarm Setting
- Address
- **Adjusting**
- Units
- Calibration
- Modbus
- Factory reset

Adjusting

FS 15-100%   Brd: CB/RU1...RU2/Modbus

I1   xx °C   I3 xxxx V / °C / ppm / %Rh / Pa / l/s
I2   xx %Rh

        xx °C   I1 xxxx V / °C / ppm / %Rh / Pa / l/s
        xx %Rh   I2 xxxxV / °C / ppm / %Rh / Pa / l/s

Address: 0...247
Ch: A/B/C/D/E/F xxxx V / °C / ppm / %Rh / Pa / l/s

C

Installation
- Controllers
- User interface
- Security
- Output
- Alarm Setting
- Address
- Adjusting
- **Units**
- Calibration
- Modbus
- Factory reset

Units
Temperature °C / °F
Pressure Pa / In. wg
Flow l/s / m³/h / m³/s / cfm

D

Installation
- Controllers
- User interface
- Security
- Output
- Alarm Setting
- Address
- Adjusting
- Units
- **Calibration**
- Modbus
- Factory reset

Calibration
Sensor   Confirmed
T   20,0   N
RH   47   N

E

Installation
- Controllers
- User interface
- Security
- Output
- Alarm Setting
- Address
- Adjusting
- Units
- Calibration
- **Modbus**
- Factory reset

F

Installation
- Controllers
- User interface
- Security
- Output
- Alarm Setting
- Address
- Adjusting
- Units
- Calibration
- Modbus
- **Factory reset**

Factory reset

Yes/No

Fig. 6 Installation-2

Table 5: Explanations installation-2

Position	Menu headline	Description (figure 6)
A	Address	Set the address for the specific controller. If several room units are used each unit needs to have a different address.
B	Adjusting	Gives the possibility to read sensor signals on chosen input or Modbus address. Given fan speed are displayed. If desired fan speed are chosen all other controls are temporarily disconnected and the fan run on set fan speed until leaving the Adjusting menu.
C	Units	Possibility to change displayed units
D	Calibration	Possibility to calibrate the internal temperature and humidity sensor in the room unit.
E	Modbus	Settings for Modbus communication. See chapter 3.2.9.
F	Factory reset	Turn the selection knob so YES is shown and press CONFIRM. ACCEPTED is shown in the display window. The Start up Wizard starts after approximately 10 seconds.

3.2.7 User Interface

(A) User interface
· **Sleep mode** ☐
· Boost time ☐
· Extended time ☐
· Away ☐
· Language

↔ Sleep mode
Sleep mode enable / disable
Background Logo / Clock / Temp

(B) User interface
· Sleep mode ☐
· **Boost time** ☐
· Extended time ☐
· Away ☐
· Language

↔ Boost time

Disable / 00:01-23:59

(C) User interface
· Sleep mode ☐
· Boost time ☐
· **Extended time**☐
· Away ☐
· Language

↔ Extended time

Disable / 00:01-23:59

(D) User interface
· Sleep mode ☐
· Boost time ☐
· Extended time ☐
· **Away** ☐
· Language

↔ Away
FS: xxx % Enabled/Disabled
T: xx.x C/F Enabled/Disabled

(E) User interface
· Sleep mode ☐
· Boost time ☐
· Extended time ☐
· Away ☐
· **Language**

↔ Language

English

Fig. 7 User Interface

Table 6: Explanations User interface

Position	Menu headline	Description figure 7)
A	Sleep mode	Choose if sleep mode should be enabled or disabled. If enabled, choose what should be displayed when the room unit goes in to sleep mode (5 min.)(chapter 3.2.3).
B	Boost time	Boost time gives the user the possibility from the user menu (chapter 3.2.4) to set the fan to a fixed speed for a certain amount of time. Set if Boost time should be able or disabled. If able – choose also the pre-defined time that the fan should be in boost mode.
C	Extended time	Extended time gives the user the possibility from the user menu (chapter 3.2.4) to extend the On time that is defined in the chapter Time control (chapter 3.2.14) for at certain amount of time. Set if Extended time should be able or disabled. If able – choose also the pre-defined time that the fan should be extended.
D	Away	Away function gives the user the possibility from the user menu (chapter 3.2.4) to set the system to a fixed speed and away temperature. Switching from Away mode to another mode has to be done manually.
E	Language	Set language

3.2.8 Alarm Menu
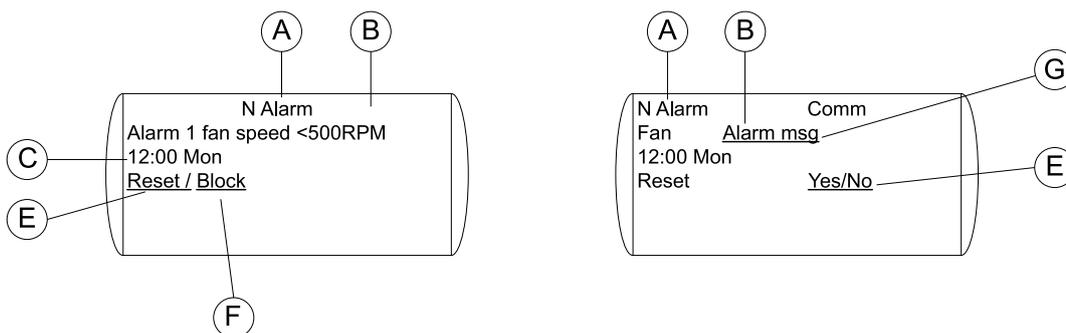
Fig. 8 Alarm Menu

Position	Description
A	Indicates number of active alarms
B	Shows the reason for the alarm
C	Shows weekday and time when the alarm occurred
D	Shows if the alarm is active or not active
E	Reset the alarm if it is no longer active, i.e. if the reason for the alarm has been fixed

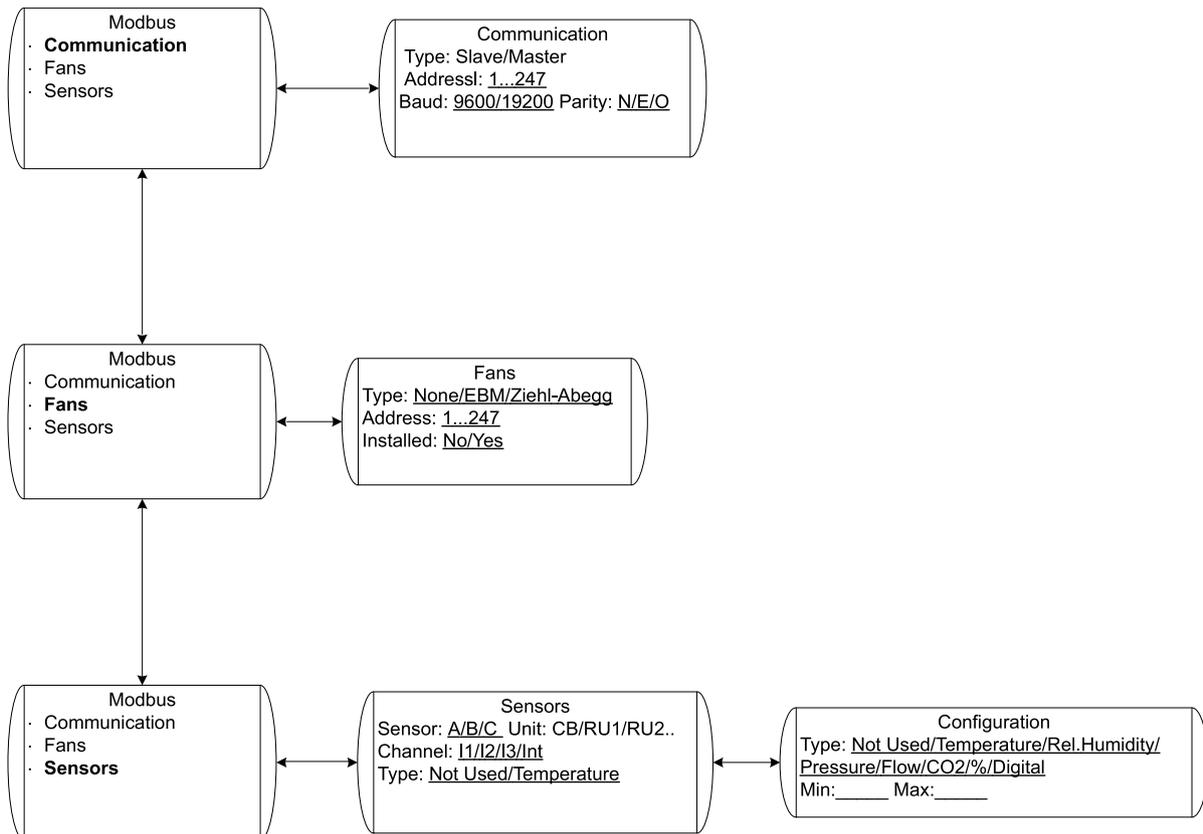| Position	Description
F	It is possible to block an active alarm. A blocked alarm will automatically be activated after 1 minute of corrected parameters.
G	Alarm message from Modbus fan. Select the field and move through the menu to view other messages.

3.2.9 Modbus communication

Modbus
· **Communication**
· Fans
· Sensors

Communication
Type: Slave/Master
Addressl: 1...247
Baud: 9600/19200 Parity: N/E/O

Modbus
· Communication
· **Fans**
· Sensors

Fans
Type: None/EBM/Ziehl-Abegg
Address: 1...247
Installed: No/Yes

Modbus
· Communication
· Fans
· **Sensors**

Sensors
Sensor: A/B/C Unit: CB/RU1/RU2..
Channel: I1/I2/I3/Int
Type: Not Used/Temperature

Configuration
Type: Not Used/Temperature/Rel.Humidity/
Pressure/Flow/CO2/%/Digital
Min:_____ Max:_____

Fig. 9 Modbus

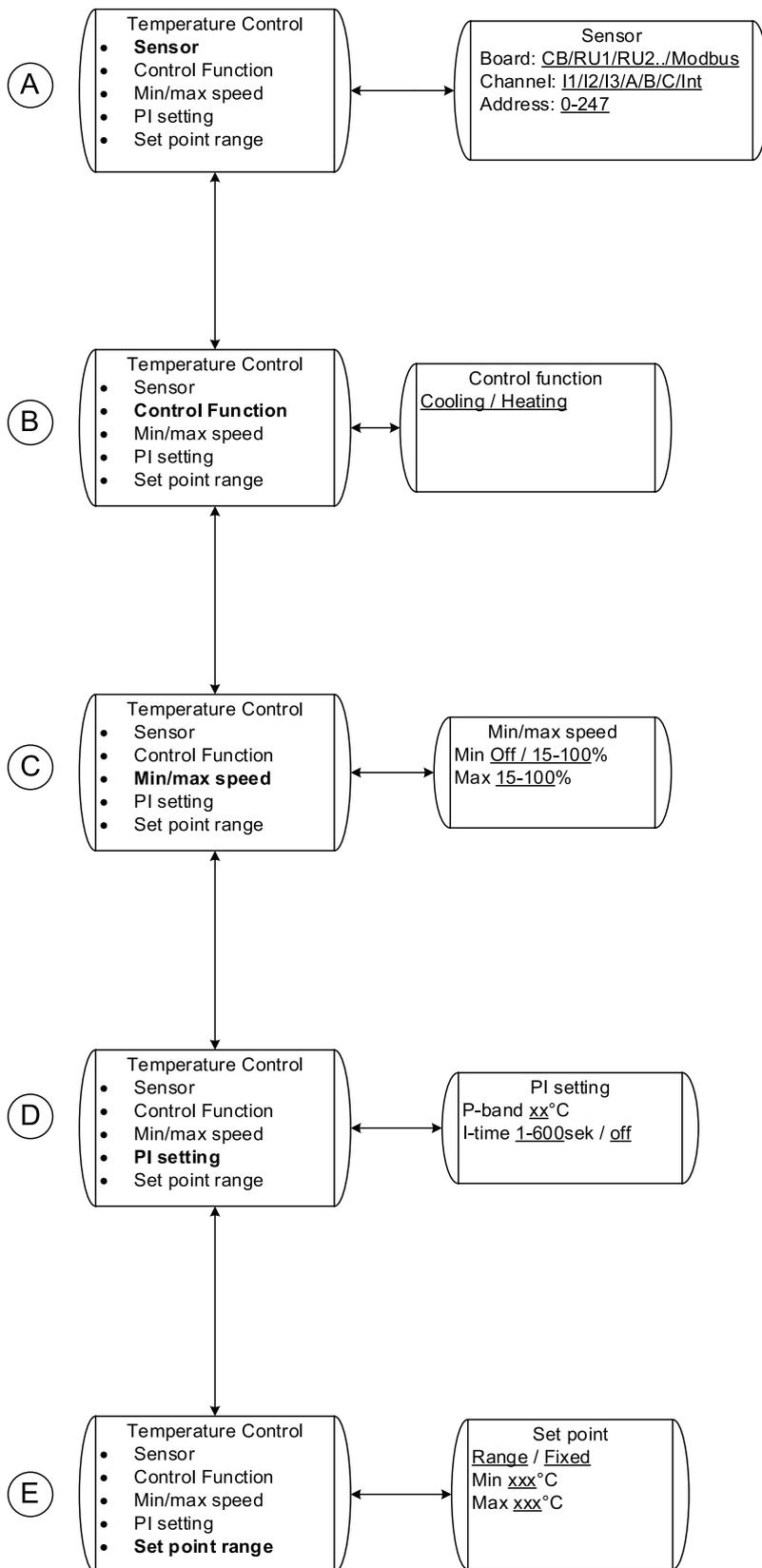| Position	Menu headline	Description (figure 13)
A	Communication	Type: Slave/Master – only one master in each system. Address: Each modbus units must have its own address.
B	Fans	Selection of which kind of fan(s) in the system. All fans have to be of same kind.
C	Sensors	Selects which sensors are available to other Modbus units and on which channel (A-F) they will be. If the sensor is not in use in the local system, type and scaling should be specified.

3.2.10 Temperature Control

Fig. 10 Temperature Control

Table 7: Explanations Temperature control

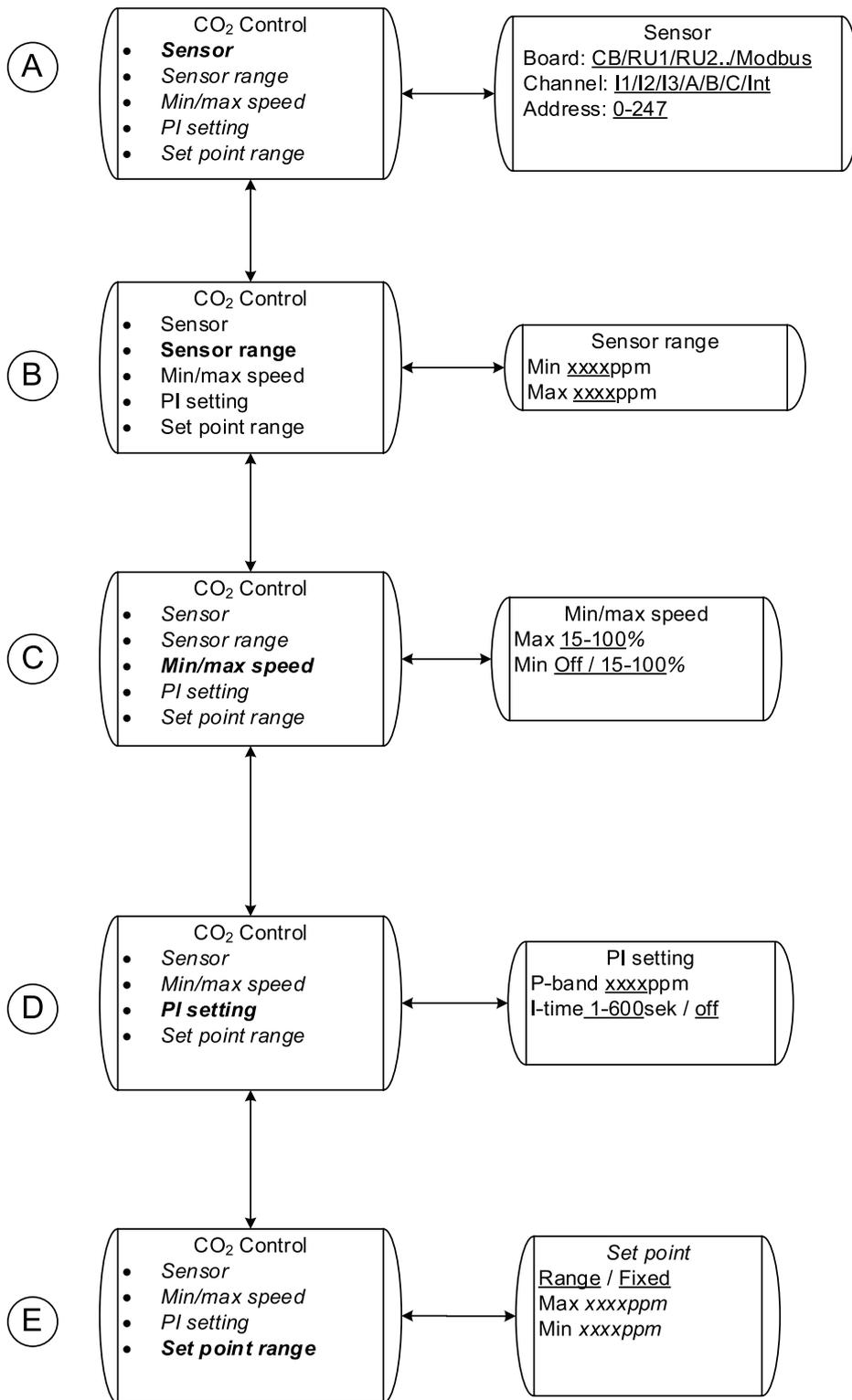| Position	Menu headline	Description (figure 10)
A	Sensor	Set where the temperature sensor is being connected or if the internal sensor is being used. If an external sensor is being used there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9) External sensor must be of type PT1000.
B	Control function	Choose desired function: Heating/Cooling
C	Min/max speed	Set then min/max speed of the fan. This will be the min/max speed that the fan will reach when it's controlled by the temperature control function for this given sensor.
D	PI setting	Set the desired P-band and I-time. Higher values give a slower controller and less risk for self-oscillation and vice versa.
E	Set point range	Set the desired set point. The set point could either be fixed or it could be a range. If the set point is fixed the user can't do any changes from user or service menu; if the set point is a range the user can change the set point within the boundaries (chapter 3.2.4).

3.2.11 CO$_2$ Control

A
CO$_2$ Control
• **Sensor**
• Sensor range
• Min/max speed
• PI setting
• Set point range

Sensor
Board: CB/RU1/RU2../Modbus
Channel: I1/I2/I3/A/B/C/Int
Address: 0-247

B
CO$_2$ Control
• Sensor
• **Sensor range**
• Min/max speed
• PI setting
• Set point range

Sensor range
Min xxxxppm
Max xxxxppm

C
CO$_2$ Control
• Sensor
• Sensor range
• **Min/max speed**
• PI setting
• Set point range

Min/max speed
Max 15-100%
Min Off / 15-100%

D
CO$_2$ Control
• Sensor
• Min/max speed
• **PI setting**
• Set point range

PI setting
P-band xxxxppm
I-time 1-600sek / off

E
CO$_2$ Control
• Sensor
• Min/max speed
• PI setting
• **Set point range**

Set point
Range / Fixed
Max xxxxppm
Min xxxxppm

Fig. 11 CO$_2$-Control

Table 8: Explanations CO₂control

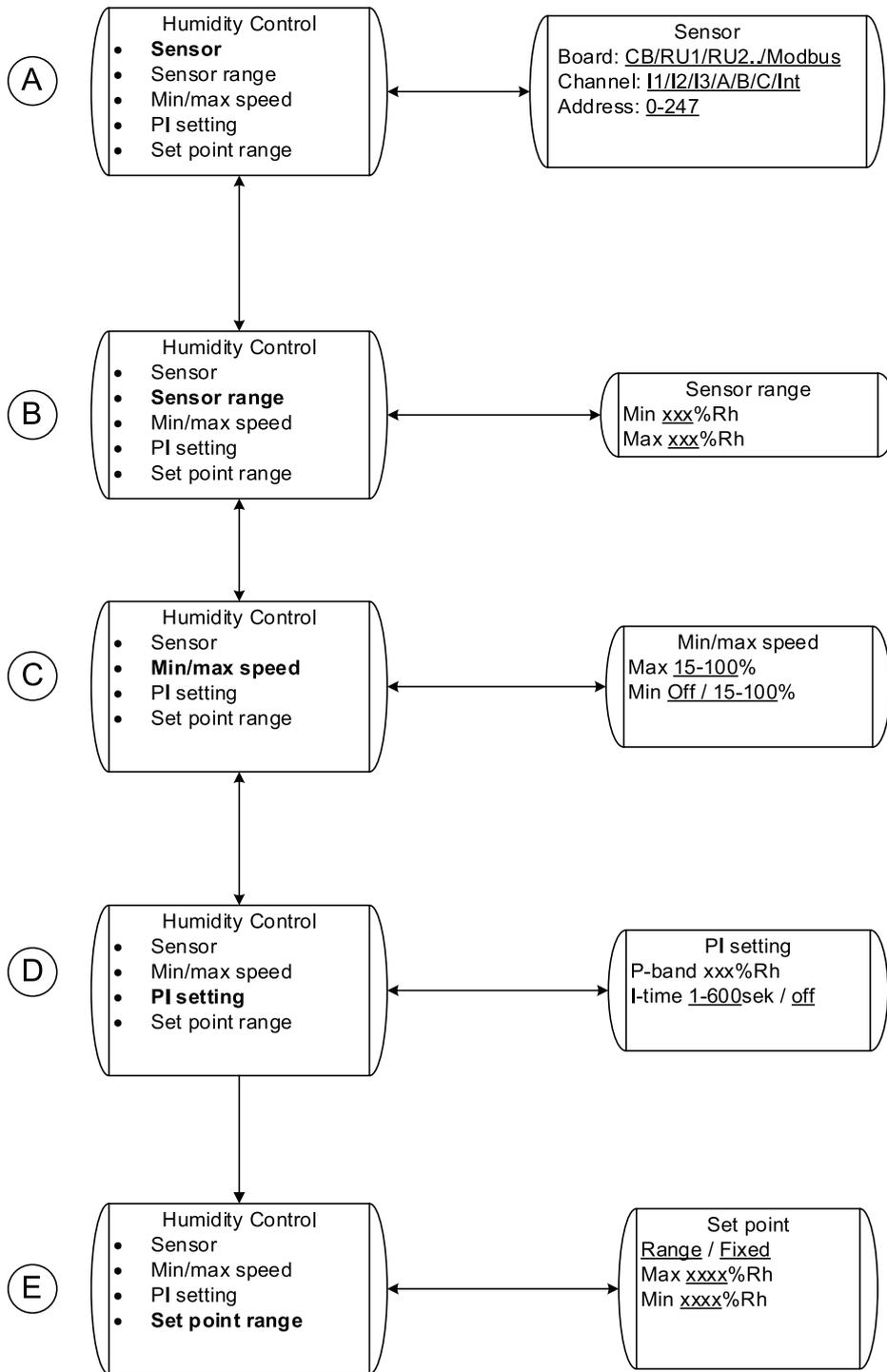| Position	Menu headline	Description (figure 11)
A	Sensor	Set where the CO_2sensor is being connected; there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. If a CO_2 sensor with a switching contact is being used DI control should be used. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
B	Sensor range	Set the measurement range of the sensor
C	Min/max speed	Set then min/max speed of the fan. This will be the min/max speed that the fan will reach when it's controlled by the CO_2 control function for this given sensor.
D	PI setting	Set the desired P-band and I-time. Higher values give a slower controller and less risk for self-oscillation and vice versa.
E	Set point range	Set the desired set point. The set point could either be fixed or it could be a range. If the set point is fixed the user can't do any changes from user or service menu; if the set point is a range the user can change the set point within the boundaries (chapter 3.2.5).

3.2.12 Humidity Control

(A) **Humidity Control**
- **Sensor**
- Sensor range
- Min/max speed
- PI setting
- Set point range

Sensor
Board: <u>CB/RU1/RU2../Modbus</u>
Channel: <u>I1/I2/I3/A/B/C/Int</u>
Address: <u>0-247</u>

(B) **Humidity Control**
- Sensor
- **Sensor range**
- Min/max speed
- PI setting
- Set point range

Sensor range
Min <u>xxx</u>%Rh
Max <u>xxx</u>%Rh

(C) **Humidity Control**
- Sensor
- **Min/max speed**
- PI setting
- Set point range

Min/max speed
Max <u>15-100</u>%
Min <u>Off / 15-100</u>%

(D) **Humidity Control**
- Sensor
- Min/max speed
- **PI setting**
- Set point range

PI setting
P-band xxx%Rh
I-time <u>1-600</u>sek / <u>off</u>

(E) **Humidity Control**
- Sensor
- Min/max speed
- PI setting
- **Set point range**

Set point
<u>Range</u> / <u>Fixed</u>
Max <u>xxxx</u>%Rh
Min <u>xxxx</u>%Rh

Fig. 12 Humidity Control

Table 9: Explanations humidity control

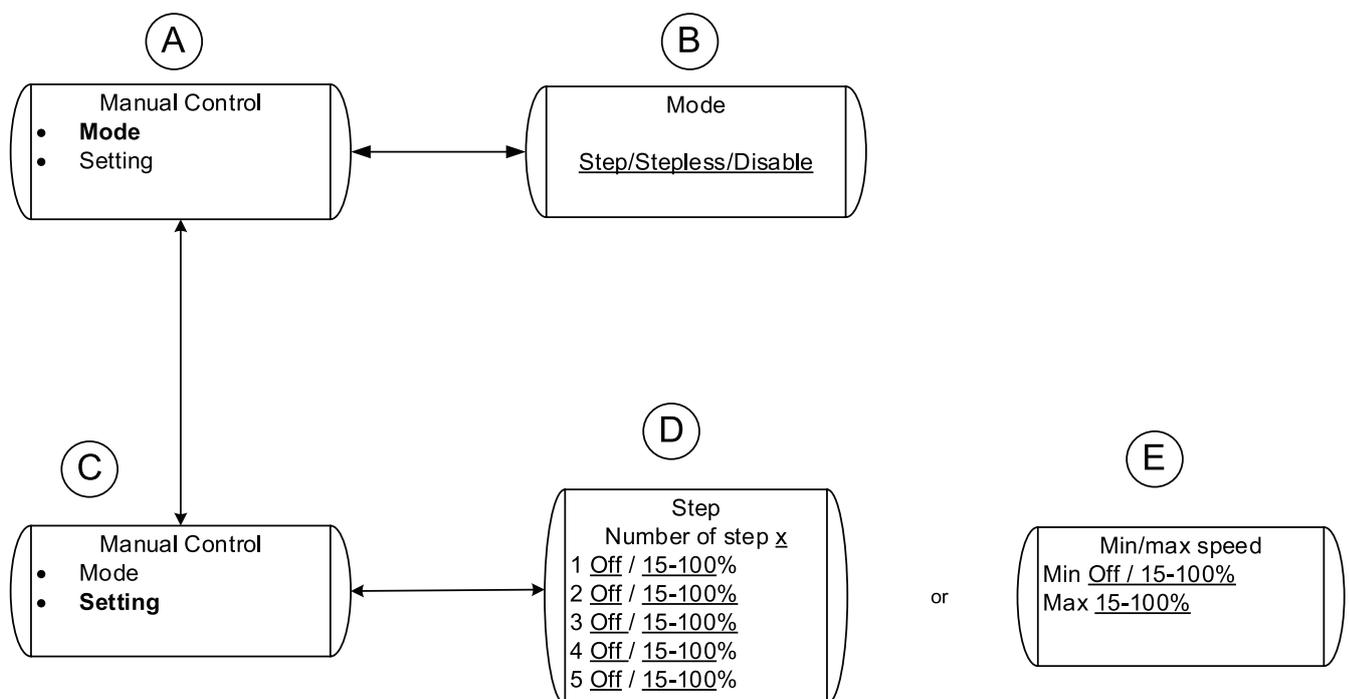| Position	Menu headline	Description (figure 12)
A	`Sensor`	Set where the humidity sensor is being connected or if the internal sensor is being used. If an external sensor is being used there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
B	`Sensor range`	Set the measurement range of the sensor
C	`Min/max speed`	Set then min/max speed of the fan. This will be the min/max speed that the fan will reach when it's controlled by the humidity control function for this given sensor.
D	`PI setting`	Set the desired P-band and I-time. Higher values give a slower controller and less risk for self-oscillation and vice versa.
E	`Set point range`	Set the desired set point. The set point could either be fixed or it could be a range. If the set point is fixed the user can't do any changes from user or service menu; if the set point is a range can the user change the set point within the boundaries (chapter 3.2.5).

3.2.13 Manual Control

Fig. 13 Manual control

Table 10: Explanations Manual control

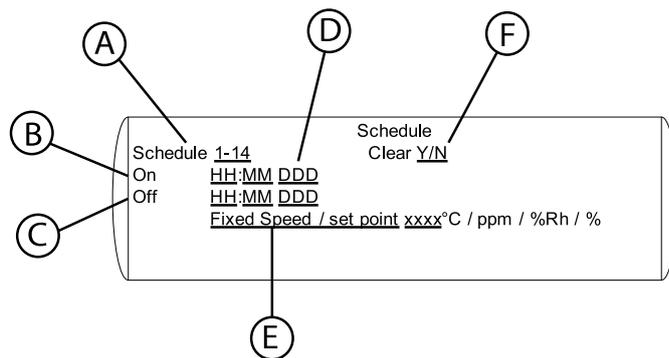| Position	Menu headline	Description (figure 13)
A	`Mode`	Activate the manual control mode
B	`Step/Stepless/Disable`	Choose if you want the fan to be controlled manually (3 to 5 steps) or stepless. The user can then change the fan speed accordantly from the User menu (chapter 3.2.4). Choose also if the manual control mode should be disabled. If this is done the "Manual" possibility in the User menu (chapter 3.2.4) will not be visible.
C	`Setting`	Decide on the different settings for the step/stepless control mode
D	`Step`	If manual control with step mode is set, decide how many steps the manual control should have and which fan speed each step should correspond to.
E	`Min/max speed`	If manual control with stepless mode is set, decide the min/max speed of the fan than can be achieved with the manual mode.

3.2.14 Time Control

Fig. 14 Time Control

Table 11: Time control

Position	Menu headline	Description (figure 14)
A	`Schedule`	Up to 14 different schedules can be programmed. All schedules refer to controller 1.
B	`On`	Set the time you want the schedule to be in On mode
C	`Off`	Set the time you want the schedule to be in Off mode
D	`Mon`	Set day or period of days. Choose between; • `Mon, Tue, Wed, Thu, Fri, Sat, Sun,` i.e. each week day • `Mon-Fri` • `Sat-Sun` • `Ev-Day,` i.e. every week day.
E	`Speed`	Set the fixed speed you want the fan to have during the On period. This setting overrides the setup speed of the fan during the On period. **Note:** The speed can also be set to Off. If so the period the fan is in Off mode is between the programmed On and Off time in the schedule.
F	`Clear`	By choosing `Y` you erase the time settings for the current schedule.

See further information concerning time control in "Set up of operation schedules" (chapter 3.4).
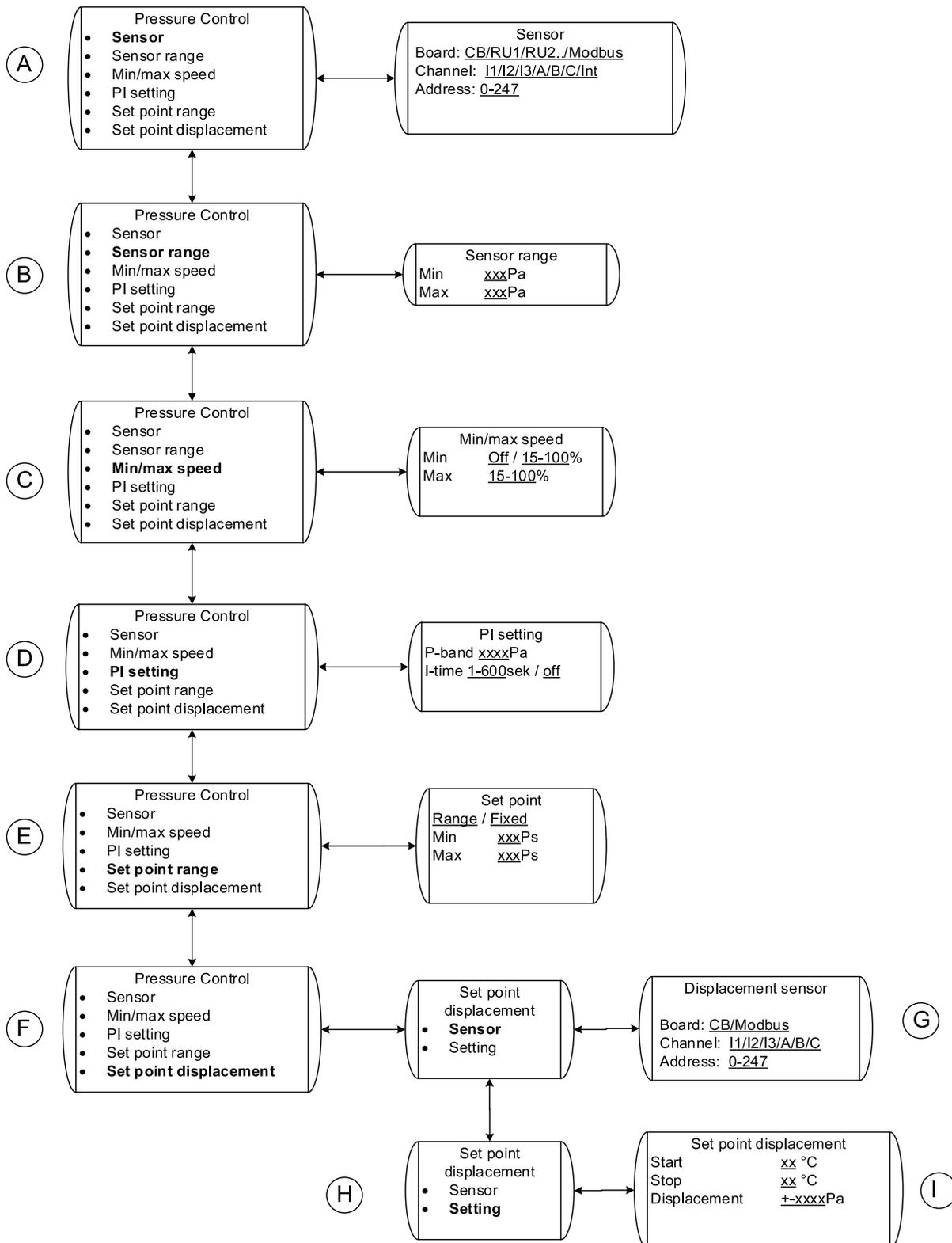
3.2.15 Pressure Control

A
Pressure Control
- **Sensor**
- Sensor range
- Min/max speed
- PI setting
- Set point range
- Set point displacement

Sensor
Board: CB/RU1/RU2../Modbus
Channel: I1/I2/I3/A/B/C/Int
Address: 0-247

B
Pressure Control
- Sensor
- **Sensor range**
- Min/max speed
- PI setting
- Set point range
- Set point displacement

Sensor range
Min   xxxPa
Max   xxxPa

C
Pressure Control
- Sensor
- Sensor range
- **Min/max speed**
- PI setting
- Set point range
- Set point displacement

Min/max speed
Min   Off / 15-100%
Max   15-100%

D
Pressure Control
- Sensor
- Min/max speed
- **PI setting**
- Set point range
- Set point displacement

PI setting
P-band xxxxPa
I-time 1-600sek / off

E
Pressure Control
- Sensor
- Min/max speed
- PI setting
- **Set point range**
- Set point displacement

Set point
Range / Fixed
Min   xxxPs
Max   xxxPs

F
Pressure Control
- Sensor
- Min/max speed
- PI setting
- Set point range
- **Set point displacement**

Set point
displacement
- **Sensor**
- Setting

Displacement sensor

Board: CB/Modbus
Channel: I1/I2/I3/A/B/C
Address: 0-247

G

Set point
displacement
- Sensor
- **Setting**

H

Set point displacement
Start   xx °C
Stop   xx °C
Displacement   +-xxxxPa

I

Fig. 15 Pressure Control

Table 12: Explanations Pressure control

Position	Menu headline	Description (figure 15)
A	`Sensor`	Set where the pressure sensor is being connected; there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
B	`Sensor range`	Set the measurement range of the sensor, e.g. 0–200 Pa.
C	`Min/max speed`	Set then min/max speed of the fan. This will be the min/max speed that the fan will reach when it's controlled by the pressure control function for this given sensor.
D	`PI setting`	Set the desired P-band and I-time. Higher values give a slower controller and less risk for self-oscillation and vice versa.
E	`Set point range`	Set the desired set point. The set point can either be fixed or it can be a range. If the set point is fixed the user can't do any changes from user or service menu; if the set point is a range the user can change the set point within the boundaries (10%-90% of the current sensor range), (chapter 3.2.5). **Note:** If pressure displacement is intended to be used the min. value in the set point range needs to be adjusted to include the desired pressure decrease value. E.g. a displacement of -50 Pa using 0–200 Pa sensor would have to increase the min. value 20+50 = 70 Pa in order for the pressure set point to be able to decrease 50 Pa.
F	`Set point displacement`	Setting if the pressure set point shall be adjusted according to measured temperature. E.g. if the ventilation shall be reduced in case of low outdoor temperature. See above explanation under `Set point range`.
G	`Sensor → Control board`	Set where the displacement sensor is being connected; there are 3 different analogue inputs on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)

Explanations Pressure control cont'd

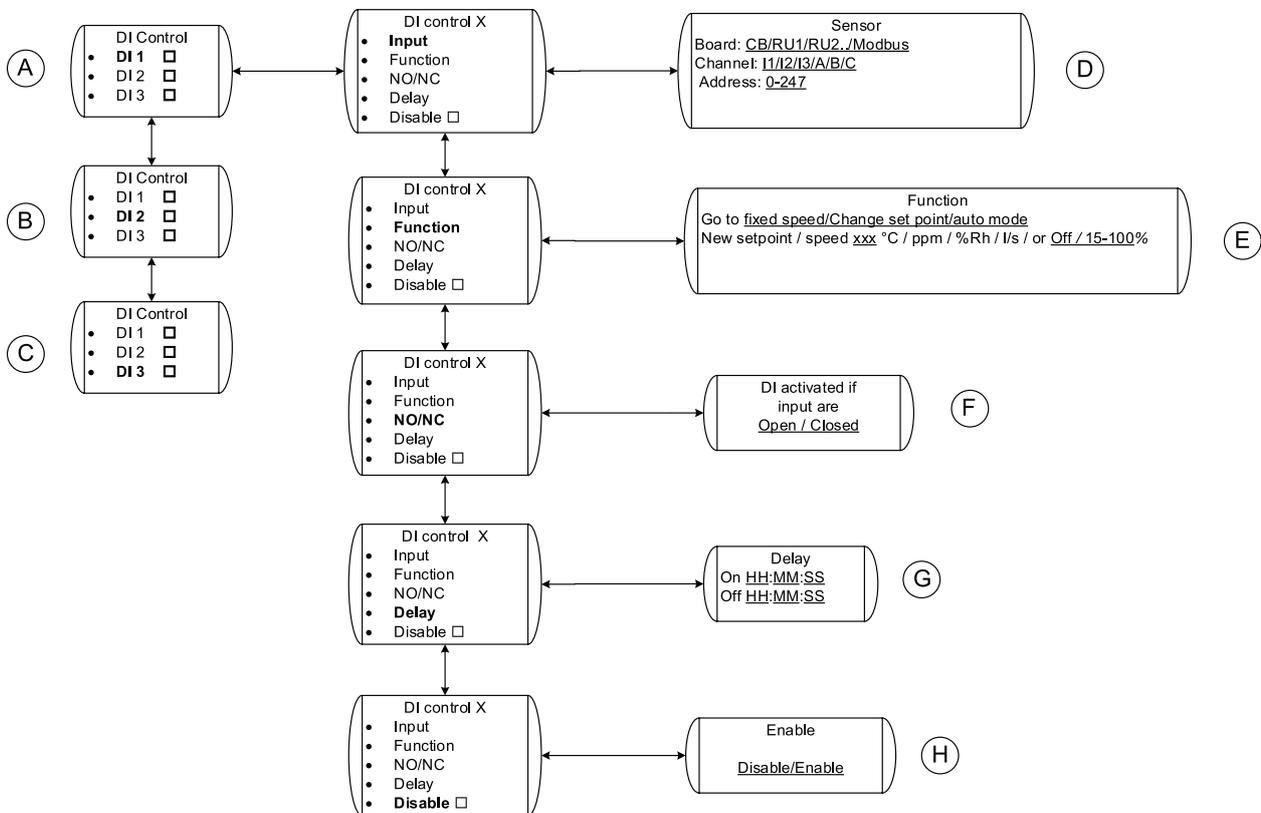| Position	Menu headline	Description (figure 15)
H	Setting	Choose the different settings for the set point displacement
I	Set point displacement	Start sets from what temperature the pressure set point shall start to change. Stop sets at what temperature the changes of set point reaches the max displacement. Displacement sets the maximum displacement of the pressure set point.

3.2.16 DI Control

Fig. 16 DI-Control

Table 13: Explanations DI control

Position	Menu headline	Description (figure 16)
A	DI 1	Do the required settings for DI 1
B	DI 2	Do the required settings for DI 2
C	DI 3	Do the required settings for DI 3

Explanations DI control cont'd

Position	Menu headline	Description (figure 16)
D	Input → Sensor	Set where the digital input is being connected; there are 5 different digital inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
E	Function → Function	Choose the desired action when the DI is active
F	NO/NC → DI activated if input is Open/Closed	Choose if the DI is normally closed (NC) or normally open (NO)
G	Delay → Delay	Choose if you want the desired action (Position E) to be delayed from the time that the DI in being activated. 00:00:00 means that the required action will start immediately when the DI is activated. Choose also the time that the desired action will continue after the DI signal is inactivated. 01:00:00 means that the desired action will continue for one hour after the digital signal has been inactivated. If the signal is activated before the timer is finished the time will be reset.
H	Enable → Disable	Enable or Disable the specific DI

3.2.17 Flow Control

A

Flow Control
• **Sensor**
• Sensor range
• Min/max speed
• PI setting
• Set point range
• Set point displacement

Sensor
Board: <u>CB/RU1/RU2. /Modbus</u>
Channel: <u>I1/I2/I3/A/B/C/Int</u>
Address: <u>0-247</u>

B

Flow Control
• Sensor
• **Sensor range**
• Min/max speed
• PI setting
• Set point range
• Set point displacement

Sensor range	
Min	<u>xxx</u>l/s
Max	<u>xxx</u>l/s
Scale	<u>Linear</u> / <u>exponential</u>

C

Flow Control
• *Sensor*
• **Min/max speed**
• *PI setting*
• *Set point range*
• Set point displacement

Min/max speed	
Min	<u>*Off*</u> / <u>*15-100*</u>%
Max	<u>*15-100*</u>%

D

Flow Control
• *Sensor*
• *Min/max speed*
• **PI setting**
• *Set point range*
• Set point displacement

PI setting	
P-band	<u>xxxx</u>l/s
I-time	<u>1-600</u>sek / <u>off</u>

E

Flow Control
• Sensor
• Min/max speed
• PI setting
• **Set point range**
• Set point displacement

Set point	
<u>Range</u> / <u>Fixed</u>	
Min	<u>xxxx</u>l/s
Max	<u>xxxx</u>l/s

F

Flow Control
• Sensor
• Min/max speed
• PI setting
• Set point
• **Set point displacement**

Set point displacement
• *Sensor*
• Setting

H

Displacement sensor
Board: <u>CB/Modbus</u>
Channel: <u>I1/I2/I3/A/B/C</u>
Address: <u>0-247</u>

G

Set point displacement
• Sensor
• **Setting**

I

Set point displacement	
Start	<u>xx</u> °C
Stop	<u>xx</u> °C
Displacement	<u>+-xxxx</u>l/s

Fig. 17 Flow control

Table 14: Explanations Flow control

Position	Menu headline	Description (figure 17)
A	`Sensor`	Set where the flow sensor is being connected; there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
B	`Sensor range`	Set the measurement range of the sensor and the type. `Linear` is used in case an air velocity sensor is being used Select `Exponential` in case a differential pressure sensor connected to a damper with a given k-factor is being used. In this case use the formula $Q = k \times \sqrt{\Delta P}$, where Q is the airflow, k is the k-factor and ΔP is the pressure difference, to determine the air flow range.
C	`Min/max speed`	Set then min/max speed of the fan. This will be the min/max speed that the fan will reach when it's controlled by the flow control function for this given sensor.
D	`PI setting`	Set the desired P-band and I-time. Higher values give a slower controller and less risk for self-oscillation and vice versa.
E	`Set point range`	Set the desired set point. The set point could either be fixed or it could be a range. If the set point is fixed the user can't do any changes (chapter 3.2.5).
F	`Set point displacement`	Setting if the flow set point shall be adjusted according to measured temperature. E.g. if the ventilation shall be reduced in case of low outdoor temperature.
G	`Setting`	Choose the different settings for the set point displacement.
H	`Sensor → Displacement sensor`	Set where the displacement sensor is being connected; there are 3 different analogue inputs on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
I	`Set point displacement`	Start sets from what temperature the flow set point shall start to change. Stop set at what temperature the changes of set point reach the maximum displacement. Displacement sets the maximum displacement of the flow set point.

3.2.18 Slave Control
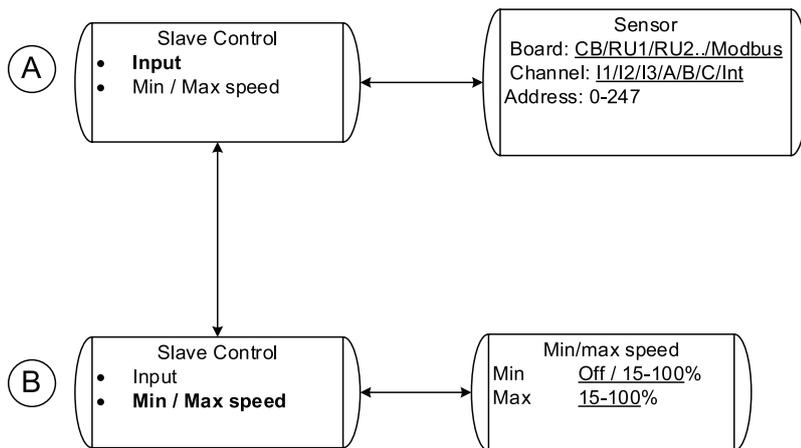
Fig. 18 Slave control

Table 15: Explanations Slave control

Position	Menu headline	Description (figure 18)
A	Input	Set where the input signal is being connected; there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
B	Min/Max speed	Set then min/max speed of the fan. This will be the min/max speed that the fan will reach when it's slave controlled for this given sensor

3.2.19 Heater/Cooler Control

3.2.19.1 Heater/Cooler Control part 1
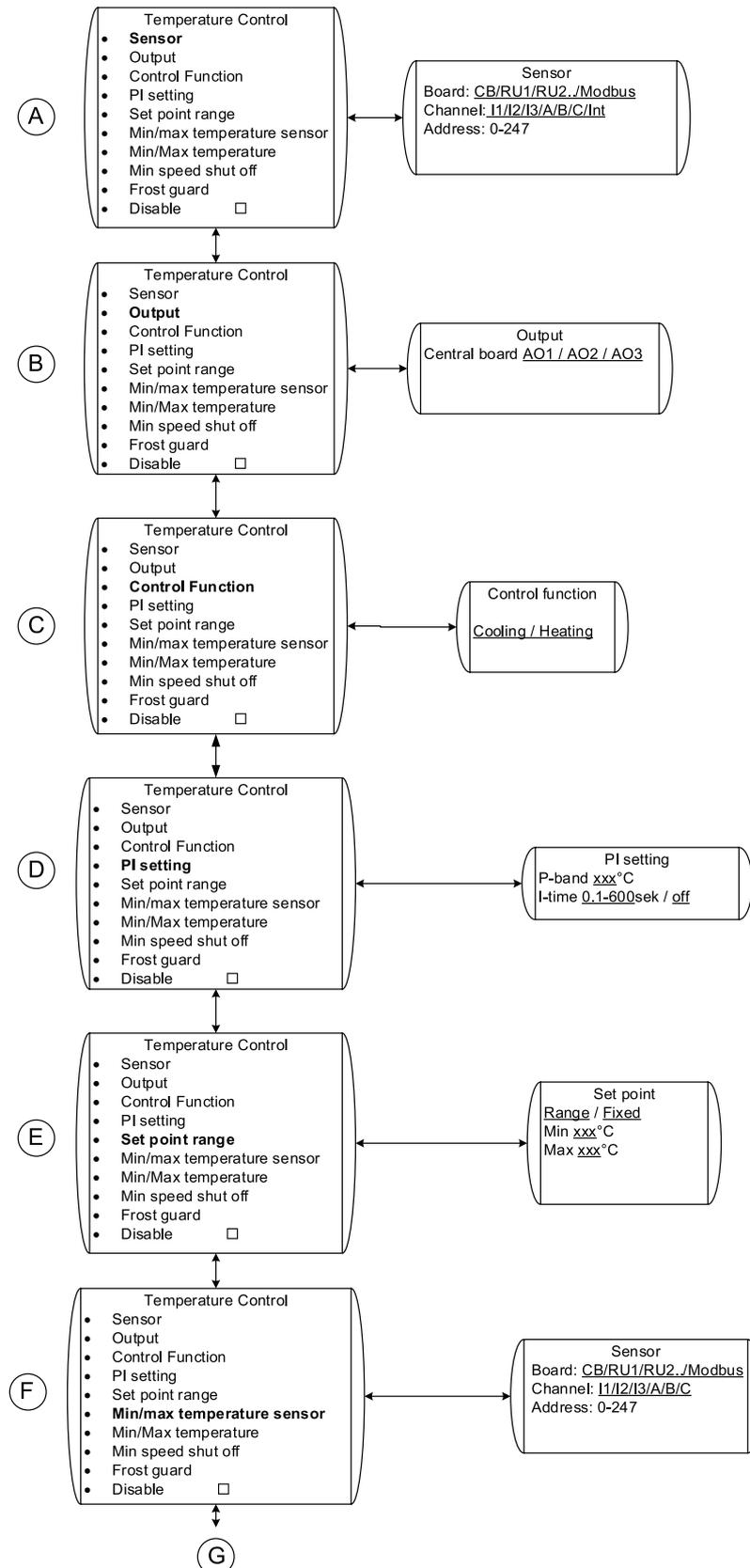
Fig. 19 Heater/Cooler control-1

Table 16: Explanations Temperature control

Position	Menu headline	Description (figure 19)
A	`Sensor`	Set where the temperature sensor that will be the controlling sensor is being connected. There are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9) This sensor could be e.g. a room sensor.
B	`Output`	Set which out put signal is being used.
C	`Control function`	Choose desired function: Heating/Cooling
D	`PI setting`	Set the desired P-band and I-time. Higher values give a slower controller and less risk for self-oscillation and vice versa.
E	`Set point range`	Set the desired set point. The set point could either be fixed or it could be a range. If the set point is fixed the user can't do any changes, see chapter 3.2.5
F	`Min/Max temperature sensor`	Set where the min/max temperature sensor is being connected; there are 5 different analogue inputs to choose from, 2 on the room unit and 3 on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9) This sensor could be e.g. a duct sensor.
G		Continuation to the next chart

3.2.19.2 Heater/Cooler Control part 2
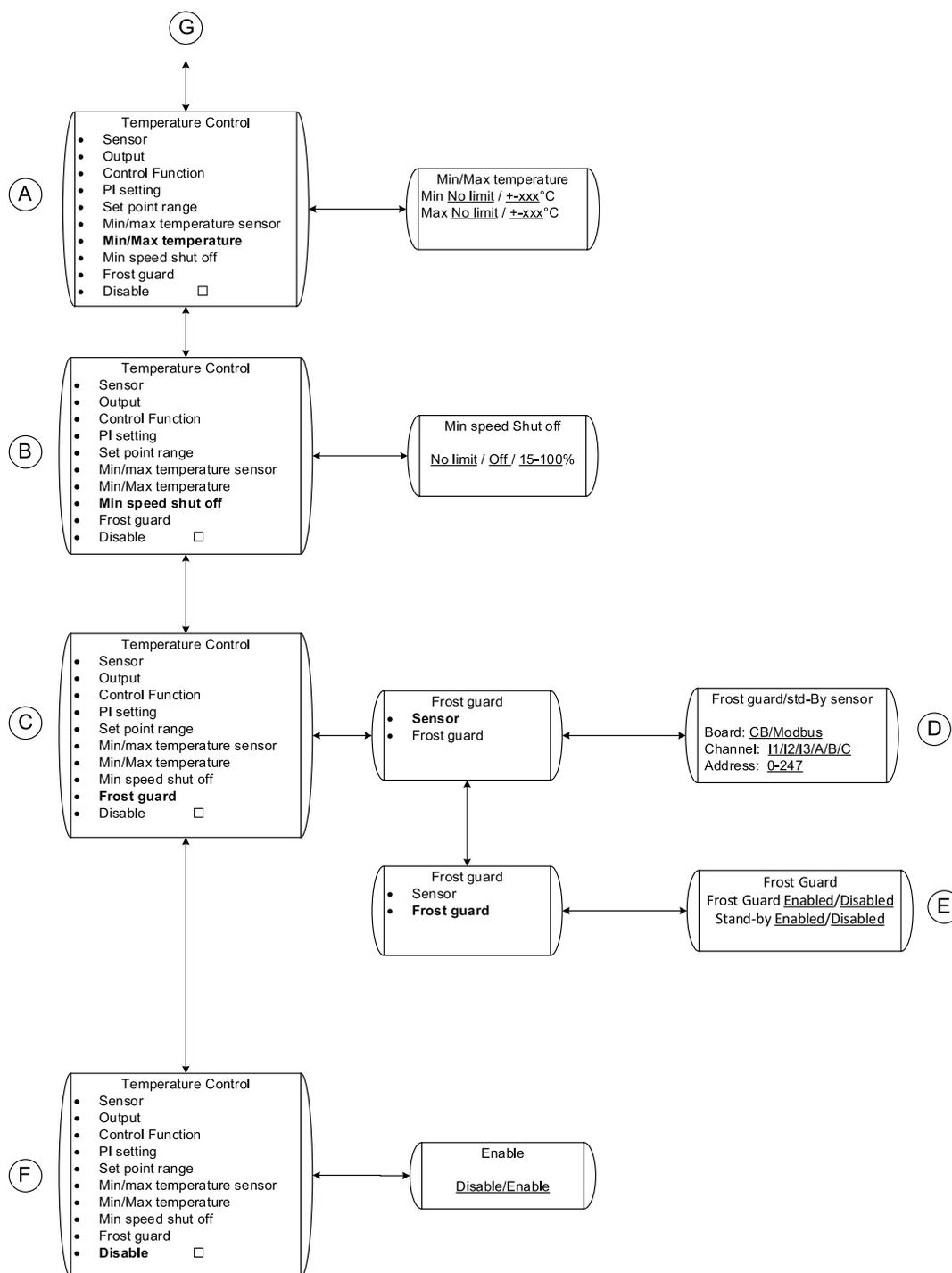
Fig. **20 Heater/cooler control-2**

Table 17: Explanations Temperature control

Position	Menu headline	Description (figure 20)
A	Min/Max temperature	Set the min/max temperature. This min/max limit will be controlled by the temperature sensor that is installed under position F (table 16)
B	Min speed shut off	Set the fan speed value for when the heater/cooler should shut down

Explanations Temperature control cont'd

Position	Menu headline	Description (figure 20)
C	Frost guard	Set frost guard and standby for water battery.
D	Sensor → Frost guard/std-By sensor	Set where the frost guard sensor is being connected; there are 3 different analogue inputs on the control board. The sensor can also be connected to Modbus. If so, set channel and address (chapter 3.2.9)
E	Frost guard → Frost guard	Enable/Disable stand-by: Warm keeping of hot-water coil at fan stop. Enable/Disable Frost guard
H	Disable	Set if the Heater/Cooler function is enabled or disabled.
G		Continuation from previous chart

3.2.20 Output
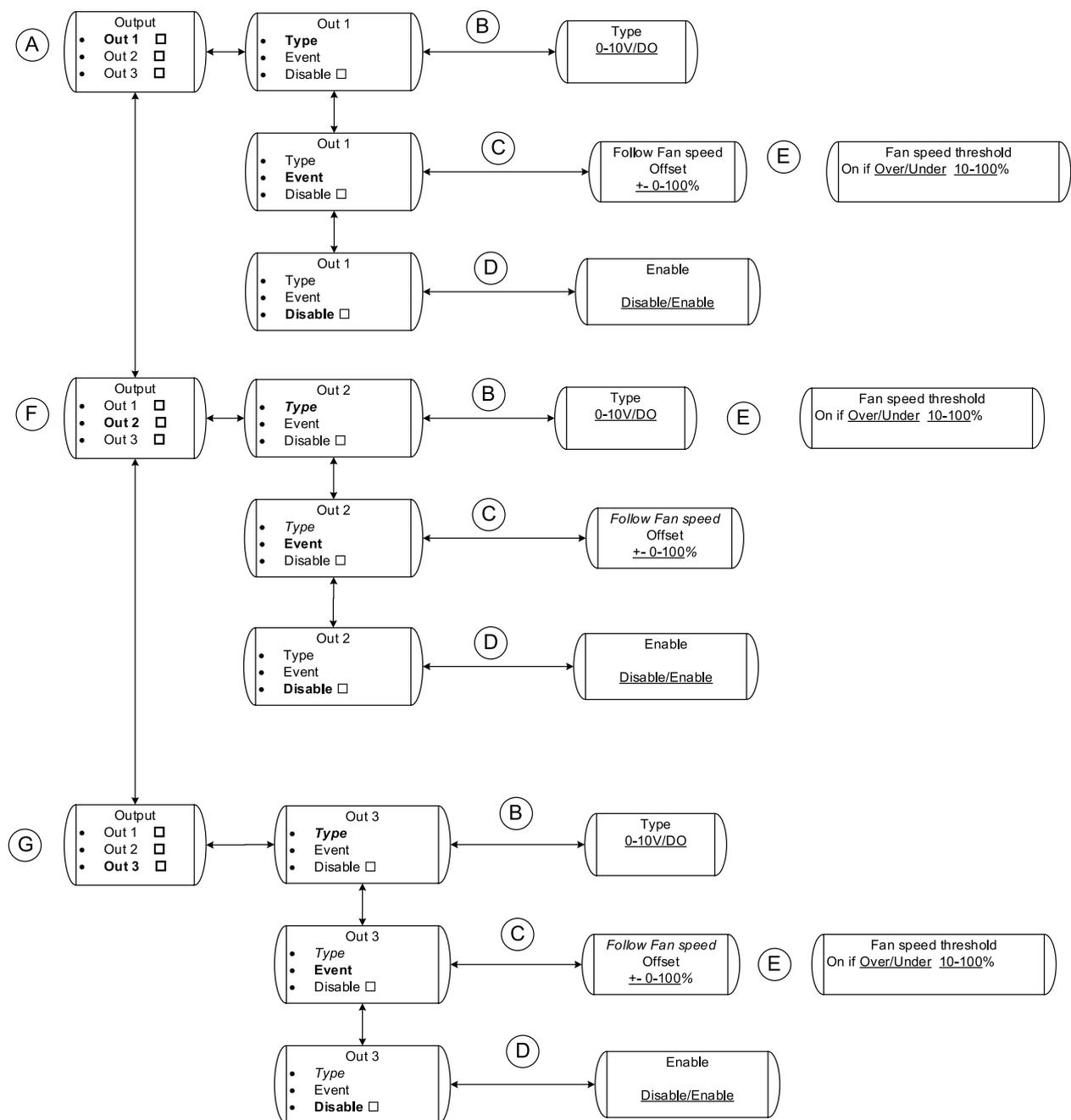
Fig. 21 Output

Table 18: Explanations Output

Position	Menu headline	Description (figure 21)
A	`Out 1`	Settings for output 1
B	`Type`	Set the type of signal; analogue or digital
C	`Event`	If analogue signal is chosen under position A; Set the desired offset value. E.g. if -10% is chosen and the master fan is working at 80% the output signal will be 10% less, i.e. 70% (7V).

Explanations Output cont'd

Position	Menu headline	Description (figure 21)
D	Enable	Set if the output function for this specific output is enabled or disabled.
E	Fan speed threshold	If digital signal is chosen under position A; Chose at what fan speed the digital signal should be activated. E.g. When fan speed is below 10% the digital signal can work as an alarm.
F	Out 2	Settings for output 2
G	Out 3	Settings for output 3

3.2.21 Alarm Setting
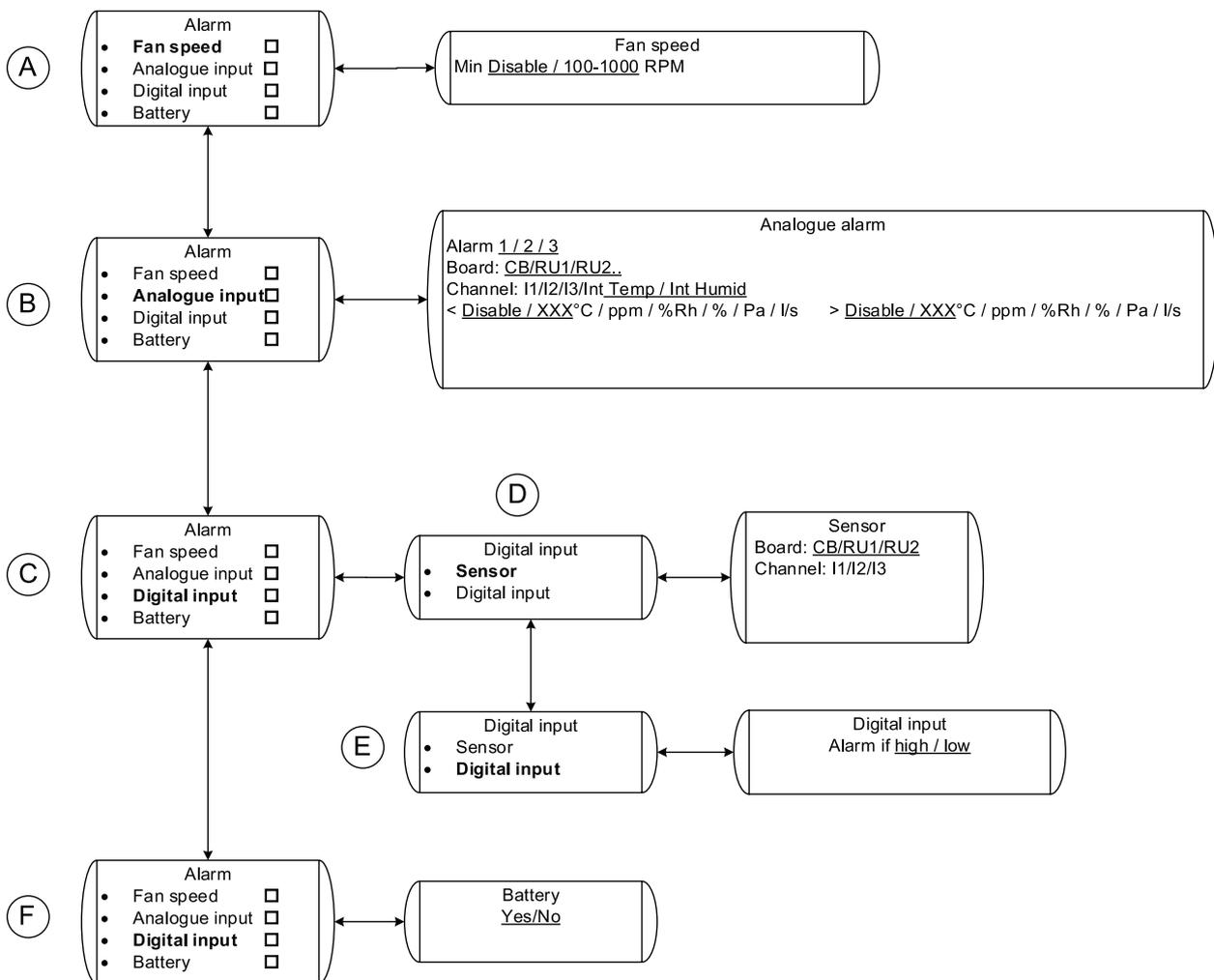
Fig. 22 Alarm setting

Table 19: Explanations Alarm

Position	Menu headline	Description (figure 22)
A	Fan speed	Set at what fan speed (rpm) the fan speed alarm should be triggered.
B	Analogue input	Set the alarm limits for the different sensors that have been installed.
C	Digital input	Set the alarm setting for the digital inputs that have been installed.
D	Sensor	Choose where the digital signal is being connected.
E	Digital input	Choose when the alarm should be triggered
F	Battery	

3.3 Set up cases

Below set up cases describe some of the most common regulation examples. All the cases assume that the room unit and control board have been installed and connected according to the installation instructions.

3.3.1 Pressure control with outdoor temperature compensation

You would like the fan to keep a constant pressure in the duct and decrease the set duct pressure with 50 Pa in case the outdoor temperature drops to -10°C or lower. The user should be able to set the duct pressure within a determined range.

It should also be possible to turn off the fan with an external potential free switch, for example a timer.

For this set up you need the following:

• One pressure sensor
• One Temperature sensor (PT1000)
• One potential free on/off switch, e.g. timer.

Do the installation according to below procedure:

1 Install pressure sensor and temperature sensor

Install the pressure sensor in the ventilation duct and the outdoor temperature sensor. Connect the pressure sensor to the control board to IN 1 (pos. B) and the temperature sensor to IN2 (pos. C).
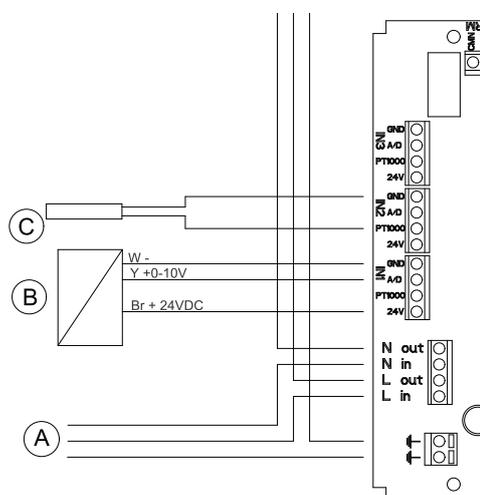
2 Service icon

Select the service icon in the main menu screen.

3 Set up

Select `Set up` to enter into the `Installation` menu.

4 Controllers

Select `Controllers`.

5 Control 1

Select `Control 1`.

6 Pressure

Go down to and select `Pressure`.

7 Sensor

Select `CB` (control board) and channel `1` by turning the selection knob and confirm. The screen should now show `CB 1`. Step back to the previous frame with the back button.

8 Sensor range

Set `Min` and `Max` pressure according to the range of the pressure sensor, for example `Min 0 Pa` and `Max 200 Pa`. Step back to the previous frame with the back button.

9 Min/Max speed

Set `Min` and `Max` speed. For example `Min 15%` and `Max 100%`. Step back to the previous frame with the back button.

10 PI setting

Set P-band and I-time. Higher values give a slower more stable control. Recommended settings are `P-band 200 Pa`, and `I-time 60 sek` if a pressure sensor with a range of 0–200 Pa has been installed.

11 Set point range

Choose if the set point should be `fixed` or a `range` (table 12). `range` can be set within 10–100% of the sensor range.

Set desired `Min` and `Max` pressures (default is 20–180 Pa). In order for this set up to work the min. value needs to be set to 70 Pa, see below explanation (step 13) or above example (table 12.)

Step back to the previous frame with the back button.

12 Set point displacement/Sensor

Set which AI the temperature sensor is connected to on the control board. You will be able to choose between I2 and I3 since I1 is occupied by the pressure sensor. Choose I2, since the temperature sensor is connected to IN2.

13 Set point displacement/Setting

Set between which temperatures you want the pressure displacement. Set `Start` for example to `0,0 °C` and `Stop` to `-10 °C`.

Set the `Displacement` to `-50 Pa`.

Note:

This is only possible if the value in the set point range is adjusted to include the desired pressure decrease value. E.g. a displacement of -50 Pa using 0–200 Pa sensor would have to increase the min. value 20+50 = 70 Pa in order for the pressure set point to be able to decrease 50 Pa.

Press the back button until you reach the main menu start screen.

3.3.1.1 Turn off the unit with an external switch

In this example we use the input terminals on the room unit to connect an external on/off switch for the installed system.

Do the installation according to below procedure:

1 Connect switch

Connect a potential free on/off switch, for example a timer, (pos. 1) to I1 and 24V on the room unit.
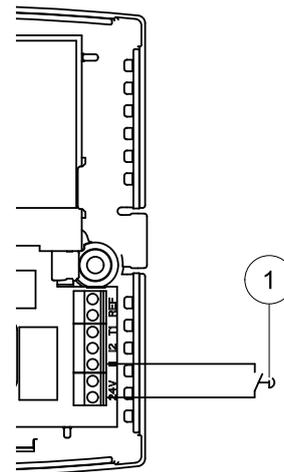
2 DI Control

Go to `Controllers` under `Installation` and scroll down to `DI Control`

3 DI1

Select `DI1`

4 Input

Select `Input`

5 RU 01

Select `RU 01` (room unit no. 1) and channel `I1`.

Step back to the previous frame with the back button.

---

6 Function

Select `Function`

7 Off

Select `Fixed speed` and choose `New speed` **`off`** `%`

8 NO/NC

Go to `NO/NC` and Select `Closed`

Note:

The switch needs to be closed in order for this to function.

(see "Explanations DI control" (table 13) for more info.

Press the back button until you reach the main menu start screen.

3.3.2 Constant air volume with CO$_2$ controlled forced ventilation

You want the fan to produce a constant airflow which can be set by the user in the room unit. With help of a CO$_2$ sensor mounted in the ventilated area the fan should go to set maximum speed after a certain fixed ppm value has been reached.

For this set up you need the following:

- One air speed sensor
- One C0$_2$ sensor for wall mounting

Do the installation according to below procedure:

1 Install air speed sensor and CO$_2$ sensor

Install the air speed sensor in the ventilation duct and the CO$_2$ sensor in the ventilated area. Connect the air speed sensor to the control board to IN 1 (pos. B) and the CO$_2$ sensor to RU 1 (I1) on the room unit.
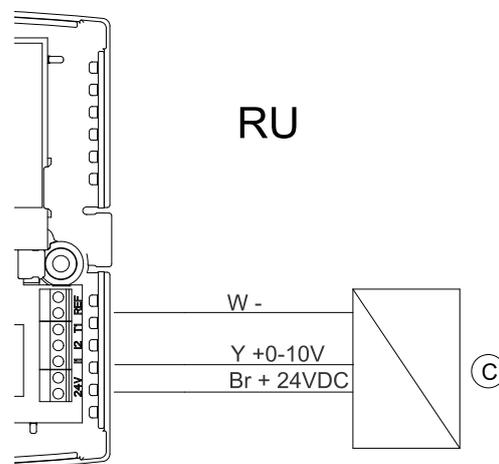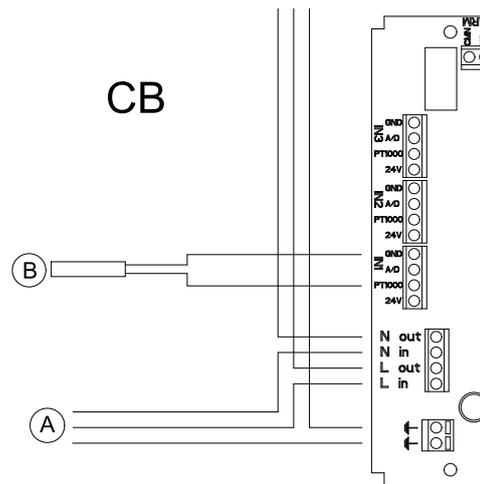
CB

RU

W -

Y +0-10V

Br + 24VDC

2 Service icon

Select the service icon in the main menu screen.

3 Set up

Select Set up to enter into the Installation menu.

4 Controllers

Select Controllers.

5 Control 1

Select Control 1.

6 Flow

Scroll down to Flow and select it by pressing the confirm button, see overview (chapter 3.2.17).

7 Sensor

Select Sensor and then choose CB I1.

Step back to the previous frame with the back button.

8 Sensor range

Select `Sensor range` and set the maximum airflow for the air speed sensor in l/s.

Note:

The range of the analogue air speed sensor is normally given in m/s written on the sensor label. You have to calculate the l/s depending on the actual duct diameter where the sensor is situated. For example a maximum air speed of 10 m/s in a 200 mm circular duct would give 314 l/s based on the formula A x V x 1000, where A is the duct cross section area in m² and V is the air velocity in m/s.

Set if the sensor scale is linear, i.e. if an air velocity sensor is used, or exponential, in case a differential pressure sensor connected to a damper is being used (chapter 3.2.17). Default is `Linear`.

Step back to the previous frame with the back button.

9 Min/Max speed

Set `Min` and `Max` speed. For example `Min 15%` and `Max 100%`.

Step back to the previous frame with the back button.

10 PI setting

Set P-band and I-time. Higher values give a slower more stable control. Recommended (default) settings are `P-band 300 l/s`, and `I-time 10 sek` if an air speed sensor with a range of 0–300 l/s has been installed.

Step back to the previous frame with the back button.

11 Set point range

Set the air flow range in which it's possible for the user to set a constant airflow. Default is 10–90% of the sensor range, i.e. with a sensor range of 0–300 l/s the default setting is `Min 30 l/s` and `Max 270 l/s`

If `Fixed` is chosen the `Min` and `Max` value are the same, i.e. the value can't be changed by the user.

Press the back button until you reach the menu screen showing `Flow` and a filled check box.

12 Control 2

Step down to `Control 2` and confirm.

13 CO_2

Select CO_2 and confirm, see overview (chapter 3.2.11).

14 Sensor

Select `RU 01` channel I1

Step back to the previous frame with the back button.

15 Sensor range

Set the ppm range of the CO_2 sensor, for example `Min 0 ppm` and `Max 2000 ppm`

Step back to the previous frame with the back button.

16 Min/Max speed

Set `Min` and `Max` speed. For example `Min 15%` and `Max 100%`.

Step back to the previous frame with the back button.

17 PI setting

Set P-band and I-time. Set `P-band 200 ppm`, and `I-time` to **Off** since the sensor set point will be fixed.

Step back to the previous frame with the back button.

18 Set point range

Set the set point to `Fixed` at `Min` and `Max` to `1000 ppm`. I.e. the fan will increase the set speed to maximum within the range of 900–1100 ppm

Press the back button until you reach the main menu screen.

3.3.3 Manual fixed min. airflow with humidity controlled forced ventilation

You want the user to be able to set a fixed min. airflow and a humidity set point within a defined range (20%–50%). The fan should operate at the fixed min. speed and go to forced speed controlled by the humidity set point. The fan should then operate steplessly within a defined range.

For this set up you use the humidity sensor which is integrated in the room unit.

Do the installation according to below procedure:

1 Manual

Go to `Controllers` and scroll down to `Manual`. Confirm.

2 Mode

Select `Mode` and continue with choosing `Stepless`.

Step back to the previous frame with the back button.

3 Setting

Go to `Setting` and set min. and max speed to for example `Min 20 %` and `Max 50 %`.

4 Controllers

Go back to `Controllers` and select `Control 1`. Confirm

5 Humidity

Scroll down to `Humidity` and confirm.

6 Sensor

Select sensor `RU 01` **Internal**

Step back to the previous frame with the back button.

7 Sensor range

Set the sensor range to `Min 10%` and `Max 90%`

Step back to the previous frame with the back button.

8 Min/Max speed

Set `Min` and `Max` speed. For example `Min 15%` and `Max 100%`.

Step back to the previous frame with the back button.

9 Set point range

Set the set point to `Range`, `Min 20 %` and `Max 50 %`. The user will now be able to choose a humidity set point in this interval.

Press the back button until you reach the main menu screen.

3.3.4 Fixed rpm with presence detector control

You would like the fan to keep a constant rpm (in this case 40% of the max speed) and force the fan to go to max speed (100 %) with the help of a PIR (presence indicator). The fan should continue on max speed with a 30 minute delay after the presence indicator stops indicating movement (DI contact open).
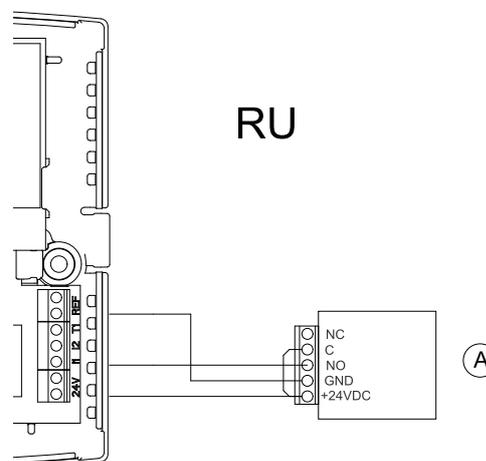
For this set up you need the following accessory:

• One PIR (presence indicator)

Do the installation according to below procedure:

1 Install the PIR (presence indicator)

Install the PIR (presence indicator) (pos. A) in the ventilated space and connect it to RU 1 (I1) on the room unit.

2 Manual

Go to `Controllers` and scroll down to `Manual`. Confirm.

Step back to the previous frame with the back button.

3 Mode

Select `Mode` and continue with choosing `Stepless`.

Step back to the previous frame with the back button.

4 Setting

Go to `Setting` and set min. and max speed to for example `Min 40%` and `Max 40%`. The user will now only be able to set the manual speed of the fan to 40%.

5 Controllers

Go back to `Controllers`, select `DI Control` and go on to selecting `DI1`. Confirm

Step back to the previous frame with the back button.

6 Input

Go to `Input` and continue with choosing `RU 01 I1`

Step back to the previous frame with the back button.

7 Function

Go to `Function` and continue with choosing `Go to Fixed FS` and `New speed 100%`

Step back to the previous frame with the back button.

8 NO/NC

Go to `NO/NC` and choose `Closed`. The fan will now go to set max speed when the DI closes.

Step back to the previous frame with the back button.

9 Delay

Go to `Delay` and set `On` to `00 : 00 : 00` and `Off` to `00 : 30: 00`. A 30 minute delay has now been set.

Press the back button until you reach the main menu screen.

3.3.5 Free cooling with control of room radiator

This application is meant for cooling or heating of Telecom cabinets. You want the temperature in the cabinet to have a min. set point of +5°C and a max set point of +23°C. The lower set point is controlled with a radiator and the higher set point is controlled with the cooling of a fan controlled by the internal temperature sensor in the room unit.
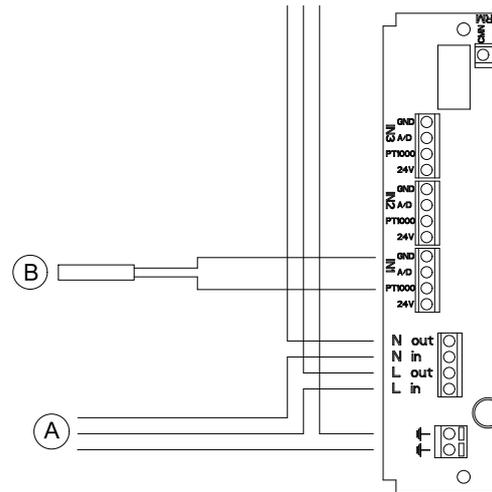
For this set up you need the following accessory:

• One Temperature sensor (PT1000)

Do the installation according to below procedure:

1 Install the temperature sensor

Install the temperature sensor used for the control of the radiator in the ventilated space and connect it to the control board on IN 1 (pos. B).

2 Temperature control cooling

Start with the control function, which controls the fan speed for the cooling of the space. The objective is to keep the upper set point and start the fan if cooling is required.

Go to `set up` and choose `Controllers`

3 Temperature

Choose `Control 1` and select `Temperature`.

4 Sensor

Go to `Sensor` and choose `RU 01` **`Internal`**. The internal temperature sensor in the room unit has now been chosen.

Step back to the previous frame with the back button.

5 Control function

Go to `Control function` and select `Cooling`

Step back to the previous frame with the back button.

6 Min/max speed

Go to `Min/max speed` and select `Min Off` and `Max 100%`. This ensures that the fan will only start when there is a need for cooling.

Step back to the previous frame with the back button.

7 PI setting

Go to `PI setting` and choose `P-band 10°C` and `I-time 60 sek` (default).

Step back to the previous frame with the back button.

8 Set point

Go to `Set point range` and select `Fixed`. Set `Max` and `Min` to `23°C`.

Step back to `Installation` menu frame by pressing the back button twice.

9 Heating control

Go to `Heater/Cooler` and select `Sensor`.

10 Sensor

Choose `CB` I1.

Step back to the previous frame with the back button.

11 Output

Go to `Output` and select `Control Board AO1`.

Step back to the previous frame with the back button.

12 Control function

Go to `Control function` and select `Heating`.

Step back to the previous frame with the back button.

13 PI setting

Go to `PI Setting`, select `P-band 5°C` and `I-time 60 sek` (default).

Step back to the previous frame with the back button.

14 Set point range

Go to `Set point range`, select `Fixed` and `5,0°C`

Step back to the previous frame with the back button.

15 Min. speed shut off

Go to `Min. speed shut off` and select `No limit`.

Step back to the main menu frame with the back button.

3.4 Set up of operation schedules

The week schedule is used if you want the fan to operate differently from how controller 1 is setup during a specific time of the day, e.g. if you want the system to be turned off during a certain time of the day or go to a different set point, e.g. forced ventilation.

It is possible to set up to 14 time schedules for Controller 1. The settings in the week schedule overrides the settings determined in the setup of the system or the set point made by the user.

Note:

Make sure time and date has been set in the service menu.

Below table (table 20) displays examples of different possible settings.

Table 20: Operation schedule examples

Example	Description
On 07:00 Mon Off 16:00 Mon Speed 50 %	The system runs at 50% speed 07:00 on Monday and stays like that until 16:00 the same day. If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up the rest of the week.
On 07:00 Mon Off 16:00 Wed Speed 50 %	The system runs at 50% speed 07:00 on Monday and stays like that until 16:00 on Wednesday. If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up rest of the week.
On 19:00 Mon Off 07:00 Mon Speed Off %	The system is turned off at 19:00 on Monday and stays like that until 07:00 the following Monday, i.e. the system is turned off the entire week. If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up between 07:00 and 19:00 on Monday.
On 07:00 Mon-Fri Off 16:00 Mon-Fri Speed 50 %	The system runs at 50% speed 07:00 on Monday and stays like that until 16:00 the same day. This activity is repeated each day until Friday, which is the last day of the period. If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up at 16:00 until 07:00 the following day during this period. The system will also run according to original setup from Friday at 16:00 until Monday 07:00.
On 19:00 Mon-Fri Off 09:00 Mon-Fri Speed Off %	The system is turned off at 19:00 on Monday and stays like that until 09:00 the following day. A result of this setup is also that the system will be turned off at 19:00 on Friday until 09:00 the following Monday. If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up between 09:00 and 19:00 on Monday. This is repeated each day until Friday.
On 09:00 Sat-Sun Off 20:00 Sat-Sun Speed 50 %	The system runs at 50% speed 09:00 on Saturday and stays like that until 20:00 the same day. This activity is repeated on Sunday If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up at 20:00 until 09:00 the following day during this period. The system will also run according to original setup from Sunday at 20:00 until Saturday 09:00.
On 21:00 Sat-Sun Off 09:00 Sat-Sun Speed Off %	The system is turned off at 21:00 on Saturday and stays like that until 09:00 Sunday. A result of this setup is also that the system will be turned off at 21:00 on Sunday until 09:00 the following Saturday. If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up between 09:00 and 21:00 on Saturday and on Sunday.
On 09:00 Ev-Day Off 20:00 Ev-Day Speed 50 %	The system runs at 50% speed 09:00–20:00 every weekday If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up at 20:00 until 09:00 each day during this period.
On 21:00 Ev-Day Off 09:00 Ev-Day Speed Off %	The system is turned off 21:00–09:00 every weekday If nothing else is set in the rest of the 13 possible schedules the system goes back to how it was originally set up at 09:00 until 21:00 each day during this period.

3.4.1 Set up example

we will use the set up case based on above example "Pressure control with outdoor temperature compensation" (chapter 3.3.1).

In this imagined example you want the week program to achieve the following result:

- Monday to Friday the system should go to maximum speed between 07:00–09:00

- Monday to Friday 09:00–18:00 the system should operate according to above setup case (chapter 3.3.1.) with the pressure set point determined by the user

- Monday to Friday the system should be turned off at 18:00

- During Saturday and Sunday 09:00–22:00 you want the fan to operate at 30% and be turned off at 22:00

Do the setup according to below procedure:

1 Setup

Go to the service icon and select `Setup`

2 Time Control

Choose `Controllers` and scroll down to `Time Control`. By confirming you enter into the Schedule setup menu.

3 Schedule 1

Start programming `Schedule 1`.

Set `On 07:00 Mon-Fri`, `Off 09:00 Mon-Fri` and `Speed 100 %`.

The fan will now work at 100% speed between 07:00 and 09:00 Monday to Friday regardless of what has been set in the setup procedure for the system or chosen user set point.

4 Schedule 2

Go to `Schedule 2`.

Set `On 18:00 Mon-Fri`, `Off 07:00 Mon-Fri` and `Speed Off %`.

The Off period for the system is now started at 18:00 and stopped at 07:00 Monday to Friday. The system will also be in Off mode Friday 18:00 to Monday 07:00 after this schedule has been programmed.

Since there is no active setting done in the schedule between 09:00–18:00 Monday to Friday the system will operate according to setup parameters (chapter 3.3.1) and according to user set point during this period.

Note:

The Off period needs to be determined with an On and Off time as well.

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5 Schedule 3

Go to `Schedule 3`.

Set `On 09:00 Sat-Sun`, `Off 22:00 Sat-Sun` and `Speed 30 %`.

The system will operate at 30% speed 09:00–22:00 Saturday to Sunday. This is possible since this time schedule was programmed after the activity determined by schedule 2. After 22:00 on Saturday and Sunday the system will go back to Off mode since the activity determined in schedule 2 will again become active.

Step back to the main menu frame with the back button.

The Time control function check box is filled whenever there is an active schedule. It is disabled by erasing all settings in each programmed schedule or if there is no active schedule at the time. Erasing the schedules is easiest done by selecting `Clear Y` in the upper right corner of the schedule display.

Systemair AB reserves the right to make changes and improvements to the contents
of this manual without prior notice.

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