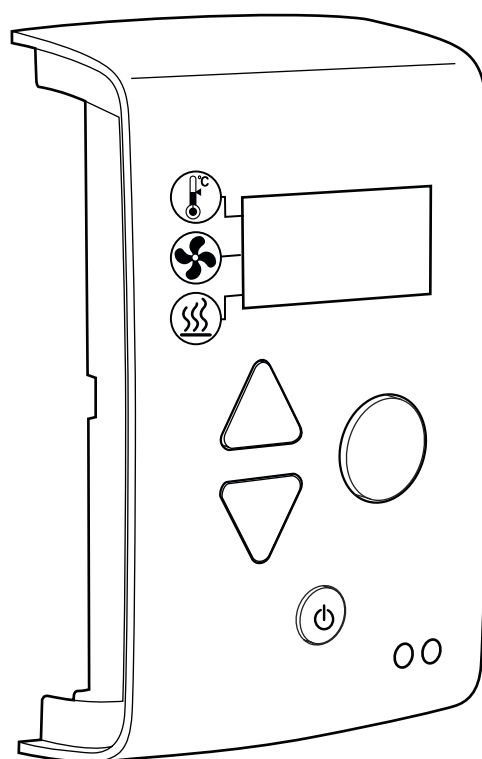


PLS Basic

Air Curtains Electric

With quick guide

PLSB



GB

For wiring diagram, please see last pages

Quick guide/start up

Check that all constituent parts are present (see section Constituent parts).

Advice about location

Control unit PLSUB1 has an integrated room temperature sensor and is installed so that it is easily accessible to the user.

RJ12 (6p/6c) modular cables, which are available in different lengths, are used to connect the PC board and the control unit. Longer cables are available as options. Maximum cable lengths see section Options.

To prevent unauthorised people from accessing the Control unit it can instead be placed in another area and an external room sensor, PLSRTX (option), can be installed in the premises to sense the correct temperature.

Connect the system

In PC board Base PLSB1(X) the unit is connected further with RJ12 (6p/6c) modular cable if several units are to be connected in parallel. If an external room temperature sensor PLSRTX is used it is connected using modular cable RJ11 (4p/4c) on PLSB1(X).

PC board Base PLSB1X in/at the unit and control unit PLSUB1 is connected with RJ12 (6p/6c) modular cable when the other units are powered up. For fixed installation requirements, remove the supplied cable and plug. Perform the installation in accordance with applicable regulations.

Power supply for electric heat must be connected separately (check manual for the air curtain unit).

Wiring diagrams

The wiring diagrams are in a separate section at the end of this manual.

When external PC board Base PLSB1X is used, wiring between the PC board base and the air curtain unit must be done. Please see separate manual for PLSB1X.

Enter ID/Operation without control unit

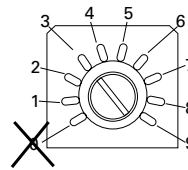
The control system can control one or more

units in parallel (max 9). Each unit must get a unique ID number (1-9) which is set in the ID selector of the PC board. E.g. Unit 1: ID=1, unit 2: ID=3

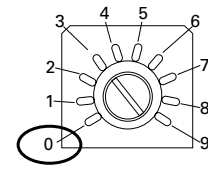
If the external control for some reason has not been installed the unit can still be run temporarily. The ID selector is then set to mode 0 see the image below.

The function is half speed and half heating output

When the ID number must be changed the unit must be disconnected from power.



Each unit should have a unique ID on its PLSB1X card.



To run the unit temporarily without external control select mode 0.




Start up

System supplied with power. Three digits 1.4.0. (software version) is quickly shown in the status window followed by three horizontal lines. After about 30 seconds the prevailing room temperature is then shown in the status window.

After the first start up the following basic settings are made. Use arrow up/down and set the desired room temperature, fan speed step and heating step. To change a setting push the round button (confirm), the setting will start to flash and can be adjusted by using the arrow up/down.

Factory settings gives manual control of fan and heating controlled by thermostat. For more setting alternatives see section Operating modes.

At the first start up alarm and error codes can occur, these can usually be reset without action.

<p>Choose desired room temperature 5 - +30 °C</p>		<div style="border: 1px solid black; padding: 5px; display: inline-block;">- 20</div>
<p>Choose fan step 1-5</p>		<div style="border: 1px solid black; padding: 5px; display: inline-block;">- 3</div>
<p>Activate heat 0 = No heat 1 = Heat step 1 possible 2 = Heat step 2 possible (3 = Heat step 3 possible)</p>		<div style="border: 1px solid black; padding: 5px; display: inline-block;">- 2</div>

Heat steps controlled by thermostat

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Control unit PLSUB1

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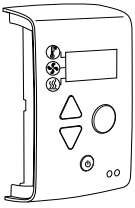
Alarm and error codes

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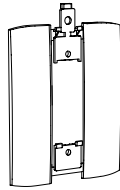
Wiring diagrams, see last pages

Constituent parts

PLSB

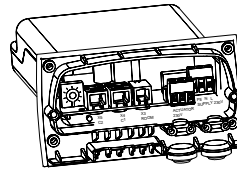


PLSUB1,
control unit Basic

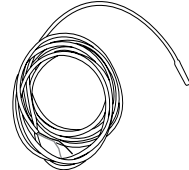


Wall unit cover

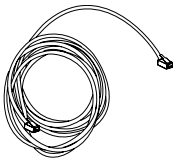
Integrated in the air curtain



PLSB1, integrated
PC Board Base



PLSIT, internal
temperature
sensor



CC,
modular cable

Dimensions constituent parts

Type	Description	HxWxD [mm]	L [m]
PLSUB1	Control unit	120x70x35	
PLSB1	Integrated PC board Base		
PLSIT	Internal temperature sensor		1
CC605	Modular cable RJ12 (6/6)		5

Option



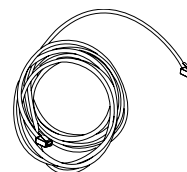
PLSRTX, external room temperature sensor



CJ4, joint piece



CJ6, joint piece



CC, modular cable

Type	RSK-no.	E-no.	Description	HxWxD	L [m]
PLSRTX	673 09 22	87 510 12	External room temperature sensor	70x33x23	
CJ4			Joint piece for two pcs. RJ11 (4/4)		
CJ6			Joint piece for two pcs. RJ12 (6/6)		
CC603	673 09 23	87 510 13	Modular cable RJ12 (6/6)		3
CC605	673 09 24	87 510 14	Modular cable RJ12 (6/6)		5
CC610	673 09 25	87 510 15	Modular cable RJ12 (6/6)		10
CC615	673 09 26	87 510 16	Modular cable RJ12 (6/6)		15
CC403	673 09 27	87 510 17	Modular cable RJ11 (4/4)		3
CC405	673 09 28	87 510 18	Modular cable RJ11 (4/4)		5
CC410	673 09 29	87 510 19	Modular cable RJ11 (4/4)		10
CC415	673 09 30	87 510 20	Modular cable RJ11 (4/4)		15

Max. cable lengths

- Modular cabel RJ12 (6p/6c) between PLSUB1 and PLSB1(X): max 50 m.
- Modular cabel RJ12 (6p/6c) between two PLSB1(X): max 50 m.
- Modular cabel RJ11 (4p/4c) to room sensor PLSRXTX: max 20 m.

Total cable length is permitted in the system is a maximum of 300 m.

Operating modes

Operating modes

Factory settings gives manual control of fan and heating controlled by thermostat at choosen step.

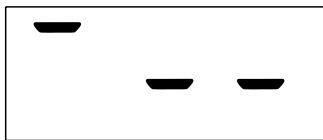
Auto mode

Change parameter P04 from 0 to 1 (see list of parameters on next page) to active auto mode. Thermostat controls both fan and heating

Manual mode

Decrease the temperature setting below 5 °C and the following symbols are shown in the status window = manual mode.

In manual mode both fan- and heating steps are controlled manually.



Fan over run

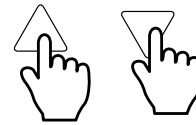
When heat has been activated the fan will continue to run to cool down the unit. The over run time is 180 seconds or shorter if the internal temperature has dropped below +30 °C (only valid for units with internal temperature sensor).

Heat regulation

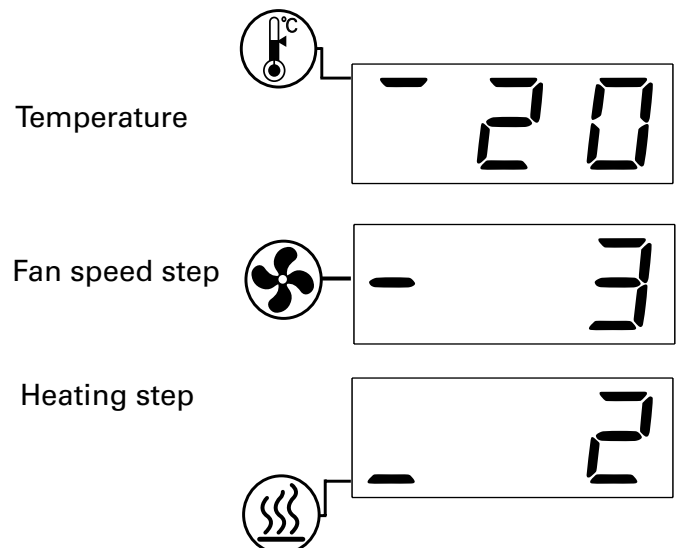
When the room temperature drops below the set point temperature the first heating step is activated. If temperature continues to drop, another heating step is activated (see description below parameters P.00).

Set values

Use arrow up /down to choose desired room temperature, fan speed step and heating step.

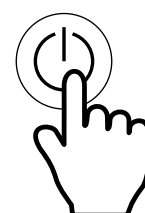


Push the confirm button and the digit(s) starts to flash. The value can now be adjusted using the arrow up /down, and confirm.



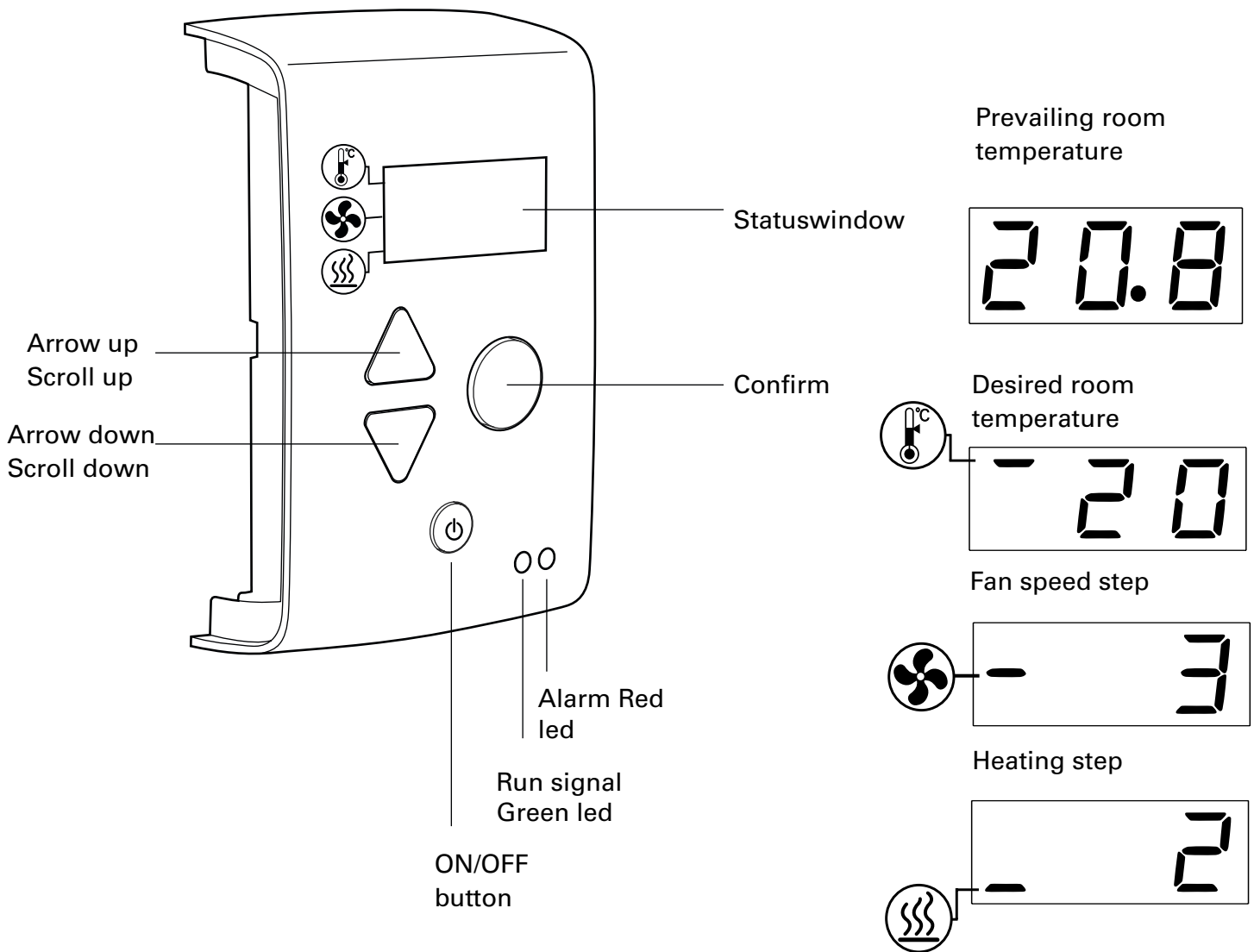
System on/off

Press the ON /OFF button for 2 seconds to switch off the system. The unit's safety functions are still active when the system is switched off, which means that the fan can continue to run for a moment after mode OFF has been selected.



Control unit PLSUB1

Overview



Explanations

Status window

The status window has four main displays: prevailing and desired room temperature, fan and heating steps. Alarm codes and parameter settings can also be shown in the status window.

Arrow up

Scroll up in menu / increase a setting.

Arrow down

Scroll down in menu / decrease a setting.

Confirm

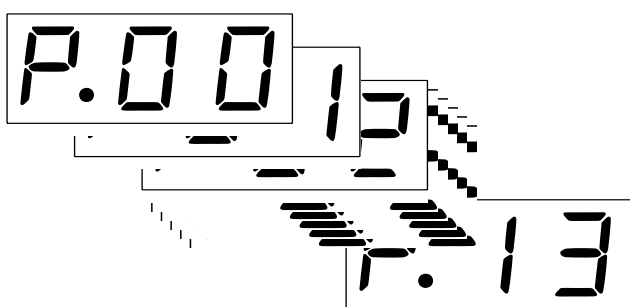
To have access to the Installers menu, choose parameters and confirm an adjusted setting.

After about 20 seconds the control unit goes back to displaying the prevailing temperature.

Installer menu

Parameter menu

Keep Confirm button pressed until P00 is shown in the status window. Use arrow up / down to scroll between the parameters. Press Confirm button once to change a setting in the parameter menu. Flashing values can be adjusted using the arrow up/down and then confirm. Keep the Confirm button pressed to return to the status window. (Returning automatically to the status window after about 50 seconds).



Parameter description

P00 Temperature difference heating steps

Sets the difference between the heating steps. Factory setting of 1,0 and a desired room temperature of 20 °C gives the following operation: Low heating step is connected at +19,5 °C (disconnected at +20,0 °C). If temperature continue to drop below +18,5 °C another heating step is connected (disconnected at +19,0 °C), etc.

List of parameters

Parameter-number	Description	Setting range	Factory setting
P.00	Temperature difference between heating steps	0,5-10	1.0 °C
P.01	Overheting alarm ON/OFF ON=1; OFF=0	1/0	1
P.02	Over run time when heat has been activated	10-300	180 seconds
P.03	Temperature limit for fan over run	10-40	30 °C
P.04	Fan control: Menu1 for Auto; 0=Menu1, 1 = Auto	0/1	0
P.05	Display of unit internal/outlet temperature	0-100	
P.06	Run time fan step 1	0-99999	
P.07	Run time fan step 2	0-99999	
P.08	Run time fan step 3	0-99999	
P.09	Run time fan step 4	0-99999	
P.10	Run time fan step 5	0-99999	
P.11	Run time heating step 1	0-99999	
P.12	Run time heating step 2	0-99999	
P.13	Run time heating step 1+2	0-99999	

P01 Overheating alarm ON/OFF

Possibility to block the alarm (only valid for units with internal temperature sensor).

P02 Over run time

Time when the fan continue to run when the heat has been activated (only valid for units with internal temperature sensor).

P03 Temperature limit for over run

Over run time is cancelled if the internal temperature drops below this set value (only valid for units with internal temperature sensor).

P04 Fan control

Choose manul (0) or auto (1) mode, read more under section Operating mode.

P05 Internal temperature

Prevailing internal temperature. Only the peak value is shown when several units are connected (only valid for units with internal temperature sensor).

P06 - P13 Run time

Run time for fan and heating steps.

Alarm and error codes

Overheat protection

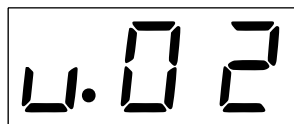
Only applies to units with internal sensor. The over heating protection is intended to restrict the exhaust temperature to +40 °C. At 37 °C one output step is tripped off. If the temperature continues to rise all output is interrupted at 40 °C. If the temperature continues to rise despite this, for example because of a faulty contactor, the fan will start to spin at 50 °C to keep the temperature down. At the same time there is an over heating alarm (Table - Alarm). At internal temperatures of +54 °C the fan runs at maximum speed.

If the unit cools the output is engaged again. The alarm remains in the control unit's display. If the unit overheats twice within an hour, the alarm must be reset before the heating can be engaged again, the fan operates until the alarm is reset.

Note! In event of repeated alarms and over heating alarms, carry out a thorough check and if the fault cause cannot be found contact authorised service personnel.

Displaying alarm and error codes

In event of alarm or error the alarm/error code and the unit it applies to is shown in the status window. Alarm error codes see Table - next page. The status window alternate the display of the alarm/error code and faulty unit ID causing the problem.



Reset alarm

Note! Before resetting, check that the fault is rectified and there is nothing to prevent the unit from being recommissioned!

When the fault is rectified, the alarm is reset according to description below.

If "wrong" button is pressed the alarm display disappears but returns in status window after about 20 seconds.

At the first start up alarm and error codes can occur, these can usually be reset without action.

3 seconds



Alarm code starts to flash

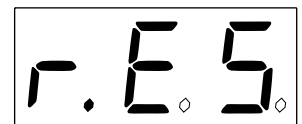
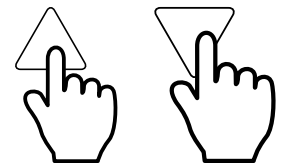
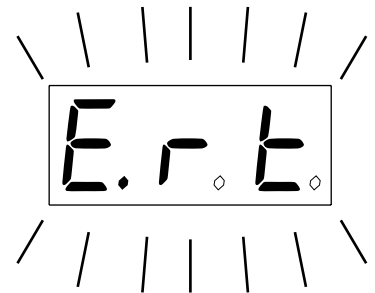


Table - Alarm

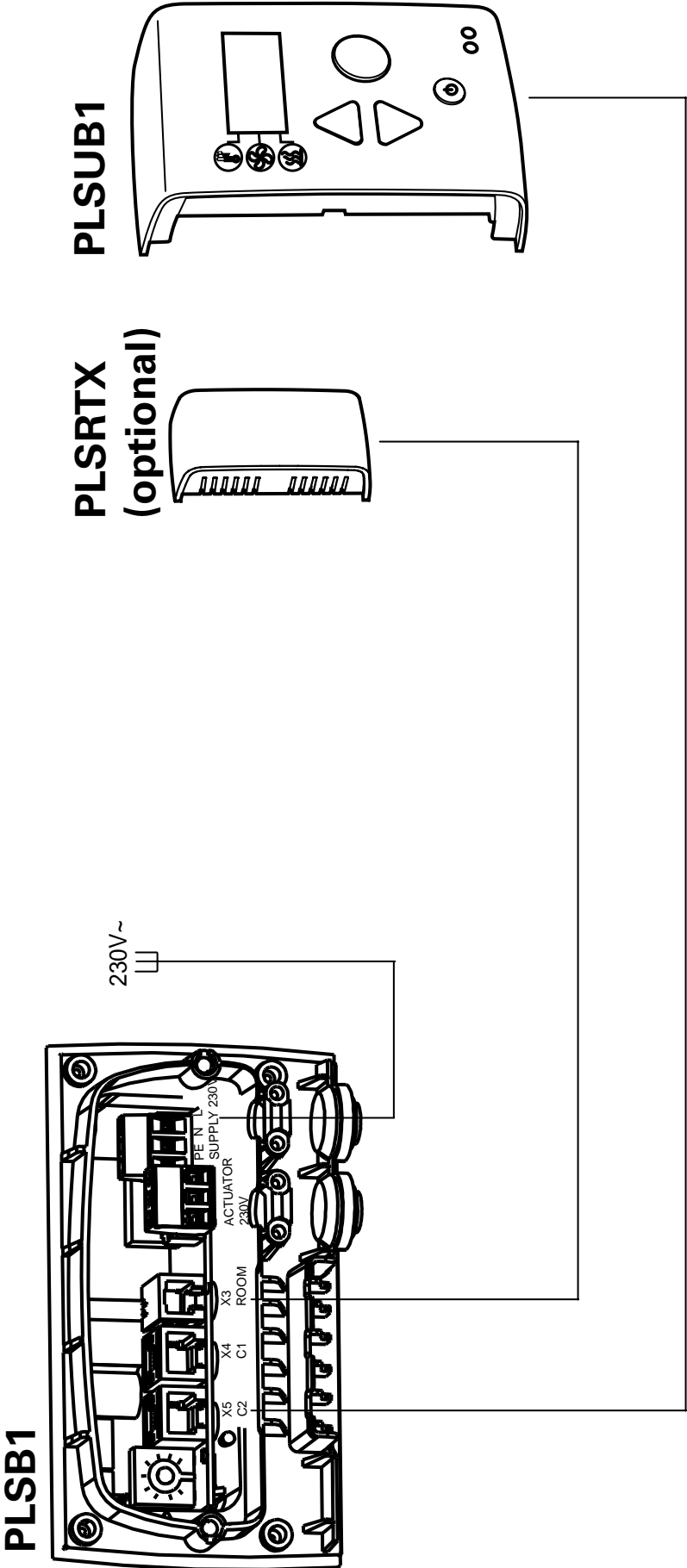
Alarm	Cause	Action
A.FA Motor alarm	Thermal switch has deployed. One or several motors have overheated. (Only units with withdrawn thermal switches.)	Check that nothing is obstructing the unit's air intake and exhaust. When the overheated motor has cooled the thermal switch shuts again and the alarm can be reset. At repeated alarms, check the motors, replace damaged motors.
A.ot Over heating alarm	The temperature in the unit has exceeded the alarm limit for overheating. (Only applies to units with internal unit temperature.)	Check that nothing is obstructing the unit's air intake and exhaust, the function of the internal temperature sensor.

Table - Error codes

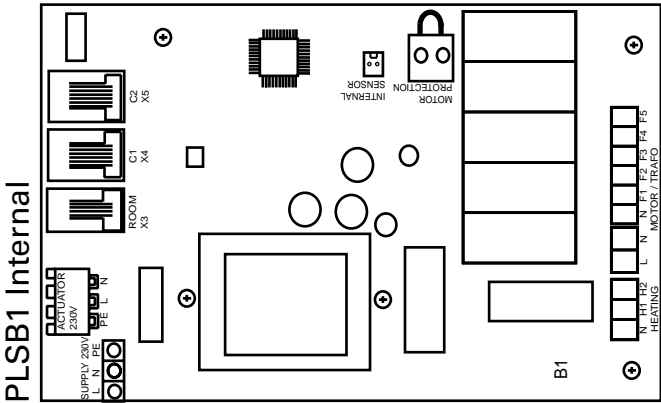
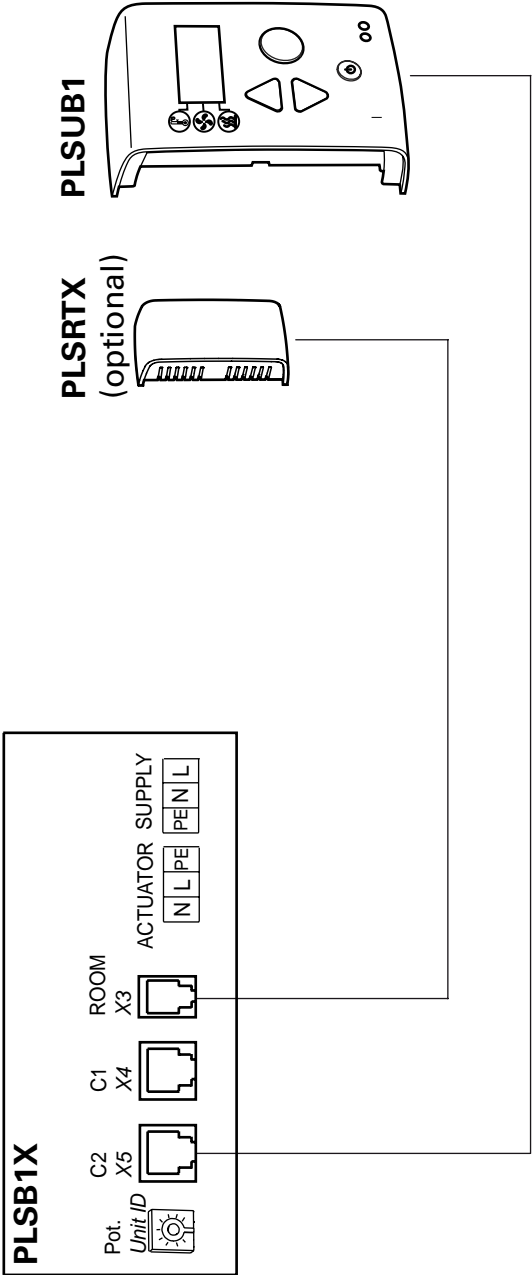
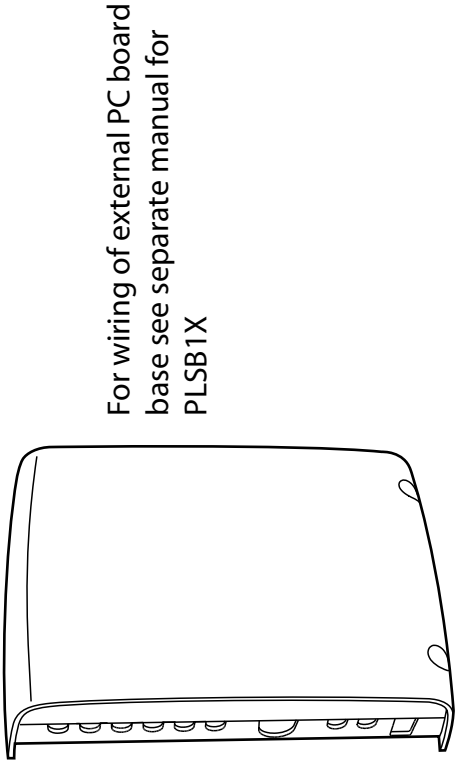
E.co Communication	PLSB1(X) has no contact with PLSUB1.	Check connection between the PLSB1 and PLSUB1. Replace any modular cables.
	PC board PLSB1(X) has no ID = 0	Interrupt the power supply and select different ID numbers for all PLSB1(X) in the system.
	Two or more PLSB1(X) have the same ID-number.	Interrupt the power supply and select different ID numbers for all PLSB1(X) in the system.
	One or more PLSB1(X) do not have programs.	Contact technical support.
E.cF ID Error	Two or more PLSB1(X) in the system have different programs.	Contact technical support.
E.rt Room sensor error	Error in or missing external room sensor PLSRTX (option) connected to PLSB1(X).	Always disconnect the power supply when connecting or disconnecting sensors. Check connection of the sensor.
E.lt Internal sensor error	Fault on or missing internal sensor in the unit (applies to units with internal sensor).	Check connection of the sensor. If there is no sensor, contact technical support.
E.ru Room sensor error	Fault on internal room sensor in the control unit PLSUB1.	Check connections between PLSUB1 and PLSB1(X). Replace any modular cables. Check if an external sensor PLSRTX (option) is working. If the error is not rectified the PLSUB1 must be replaced.

Wiring diagram - Basic

Internal PC Board Base



Wiring diagram - Basic
External PC Board Base



Wiring diagram - Basic - parallell conection

