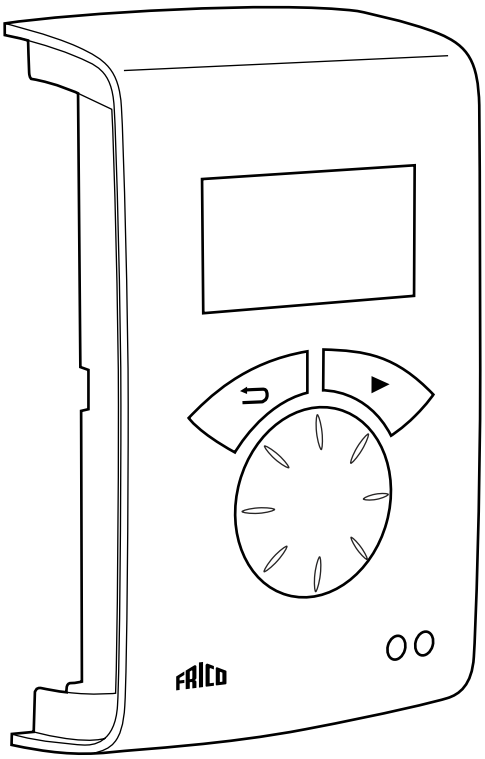
Original instructions

SIRe Advanced Fan Heater Electric

With quick guide

SIReFAX
SIReFAEMX



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

PC board Base SIReB1X and PC board HUB SIReA1X are installed close to the unit. Control unit SIReUA1 has an integrated room temperature sensor and is installed so that it is easily accessible to the user. Wiring between the PC Board Base SIReB1X and heating fan must be laid for 230V.

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, SIReRTX (option), can be installed in the premises to sense the correct temperature.

Note! Internal sensor SIReIT02 shall be mounted in the fan exhaust in the fan heater unit in intended holder.

Connect the system

In control board base SIReB1X 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 SIReRTX (option) is used it is connected using modular cable RJ11 (4p/4c) on HUB SIReA1X.

Outdoor sensor SIReOTX is connected to the terminal block on PC board Hub SIReA1X Control board Base SIReB1X in/at the unit and control unit SIReUA1 are connected by PC board HUB SIReA1X with RJ12 (6p/6c) modular cables, after the other units are powered up.

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

Wiring diagrams

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

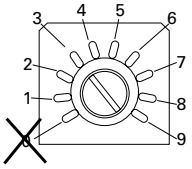
Enter ID/Operation without control unit

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

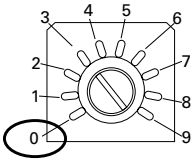
If the external control for some reason has not been installed the unit can still be run temporarily. The ID selector is then set to mode 0 see the image below.

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 SIReB1X card.



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

Start up

System supplied with power. At the first start up, the start-up wizard is run and the basic settings are made. Fan and heating steps are tested through the test program. Then a status window is displayed.

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

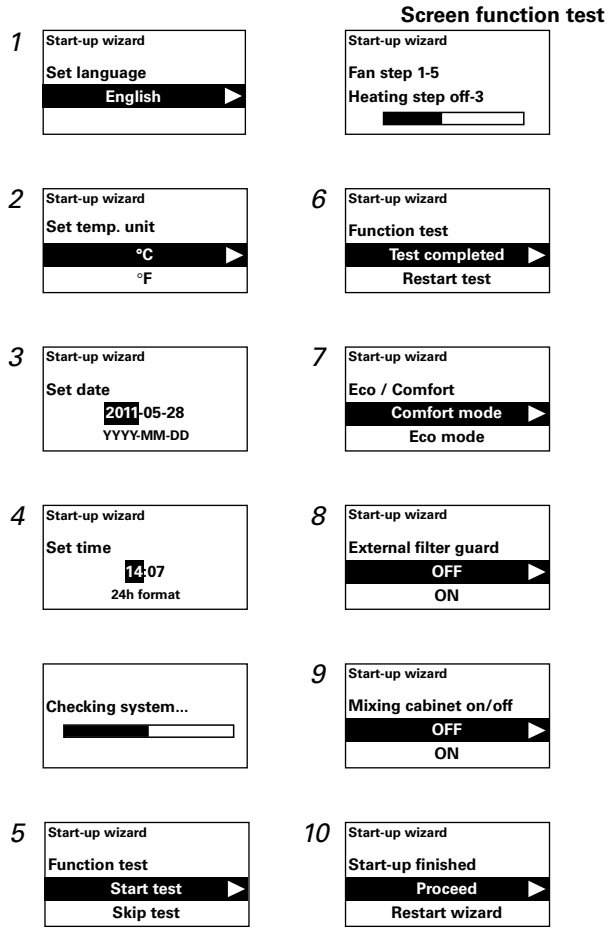
Unit with mixing cabinet

Damper motor PSM01 must be installed on the throttle spindle to the mixing cabinet. Electrical connection between the damper motor and PC board HUB SIReA1X and 230V power supply (see the wiring diagram at the end of the manual).

Start up

Select mixing cabinet On in the start-up wizard.

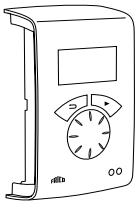
Start-up wizard



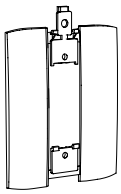
Contents

Constituent parts

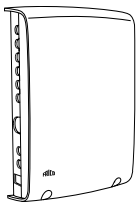
SIReFAX (without mixing cabinet)



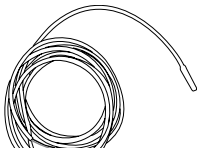
SIReUA1,
control unit
Competent and
Advanced



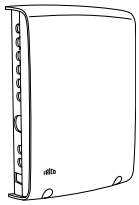
Wall unit cover



SIReB1X, External
PC board Basic

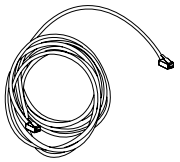


SIReIT02, internal
temperature sensor
2 m



SIReA1X,
PC board HUB
Advanced

SIReOTX,
outdoor temperature
sensor

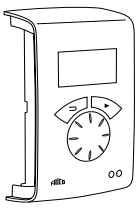


SIReCC,
modular cable

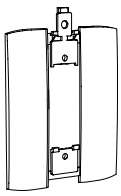
Dimensions constituent parts

Type	Description	HxWxD [mm]	L [m]
SIReUA1	Control unit Competent and Advanced	120x70x35	
SIReB1X	External PC Board Base	202x139x50	
SIReIT02	Internal temperature sensor		1
SIReA1X	PC Board HUB Advanced	202x139x50	
SIReOTX	Outdoor temperature sensor	70x33x23	
SIReCC603	Modular cable RJ12 (6/6)		3
SIReCC605	Modular cable RJ12 (6/6)		5

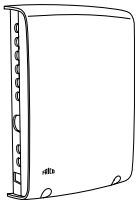
SIReFAEMX (with mixing cabinet)



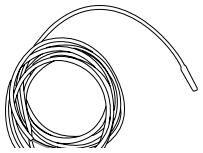
SIReUA1,
control unit
Competent and
Advanced



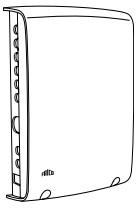
Wall unit cover



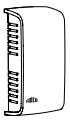
SIReB1X, External
PC board Basic



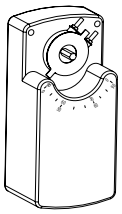
SIReIT02, internal
temperature sensor 2 m



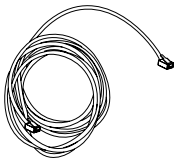
SIReA1X,
PC board HUB
Advanced



SIReOTX,
outdoor
temperature sensor



PSM01, damper
motor



SIReCC,
modular cable

Dimensions constituent parts

Type	Description	HxWxD [mm]	L [m]
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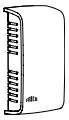
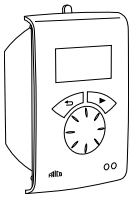
SIReB1X	External PC Board Base	202x139x50	
SIReIT02	Internal temperature sensor		1
SIReA1X	PC Board HUB Advanced	202x139x50	
SIReOTX	Outdoor temperature sensor	70x33x23	
PSM01	Damper motor 230V	241x116x88	
SIReCC603	Modular cable RJ12 (6/6)		3
SIReCC605	Modular cable RJ12 (6/6)		5

Option



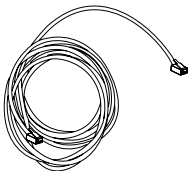
SIReRTX, external room temperature sensor



SIReUR, kit for recessed installation

SIReCJ4, joint piece

SIReCJ6, joint piece



SIReCC, modular cable

Type	RSK-no.	E-no.	Description	HxWxD	L [m]
SIReRTX	673 09 22	87 510 12	External room temperature sensor	70x33x23	10
SIReUR*	673 09 21	87 510 11	Kit for recessed installation	114x70x50	
SIReCJ4			Joint piece for two pcs. RJ11 (4/4)		
SIReCJ6			Joint piece for two pcs. RJ12 (6/6)		
SIReCC603	673 09 23	87 510 13	Modular cable RJ12 (6/6)		3
SIReCC605	673 09 24	87 510 14	Modular cable RJ12 (6/6)		5
SIReCC610	673 09 25	87 510 15	Modular cable RJ12 (6/6)		10
SIReCC615	673 09 26	87 510 16	Modular cable RJ12 (6/6)		15
SIReCC403	673 09 27	87 510 17	Modular cable RJ11 (4/4)		3
SIReCC405	673 09 28	87 510 18	Modular cable RJ11 (4/4)		5
SIReCC410	673 09 29	87 510 19	Modular cable RJ11 (4/4)		10
SIReCC415	673 09 30	87 510 20	Modular cable RJ11 (4/4)		15

*) See separate manual.

Max. cable lengths

Modular cable RJ12 (6p/6c) between SIReUA1 and SIReA1X: max. 50 m.
Modular cable RJ12 (6p/6c) between SIReA1X and SIReB1(X): max. 10 m.
Modular cable RJ12 (6p/6c) between two SIReB1(X): max. 50 m.
Modular cable RJ11 (4p/4c) to room sensor SIReRTX: max. 20 m.
Cable for outdoor sensor SIReOTX (not modular): max. 50 m.

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

Operating modes

Operating modes (without mixing cabinet)

Control is based on the three operating modes:

- Thermostat / Manual fan
- Thermostat / Automatic fan
- Manual

Thermostat / Manual fan

The thermostat just controls the heating and the fan runs continually. The fan speed is set manually. The fan symbol is marked in the status window, select desired speed with the rotary dial and confirm. (High speed limit is step 4 for SE06-15 and step 2 for SE20/30).

When the setpoint value is fallen below by 0.5 K the first heating step is engaged , if the temperature falls further the next heating step is engaged, etc. (SE06-15, 20 has 2 heating steps, SE30 has 3 heating steps).

The difference between the set point value and the room temperature that controls the engagement of the Heating step is set under Heating step diff., see Installer menu > Settings heating > Heating step diff.

Thermostat / Automatic fan

The thermostat controls both the heating and the fan. The fan speed is set manually in the status window.

Manual

The fan speed and heating is set manually in the status window. The heating can be set to 2 or 3 steps. Heating is blocked by the outdoor temperature, see: [Installer menu > Settings heating > Outdoor temp. limit]

Operating modes (with mixing cabinet)

The control is based on two operating modes:

Thermostat / Manual fan
Manual

Thermostat / Manual fan

The thermostat just controls the heating and the fan runs continually. The fan speed is set manually. The fan symbol is marked in the status window, select desired speed with the rotary dial and confirm.

Day mode

In day mode or if no week program is activated, the fan runs continuously at the fixed fan control and the damper is open according to the setting under Day damper pos.. The heating is controlled in steps via the room temperature. If the inflow temperature drops below the set minimum value, heat connects even if it is sufficiently warm in the premises.

Night mode

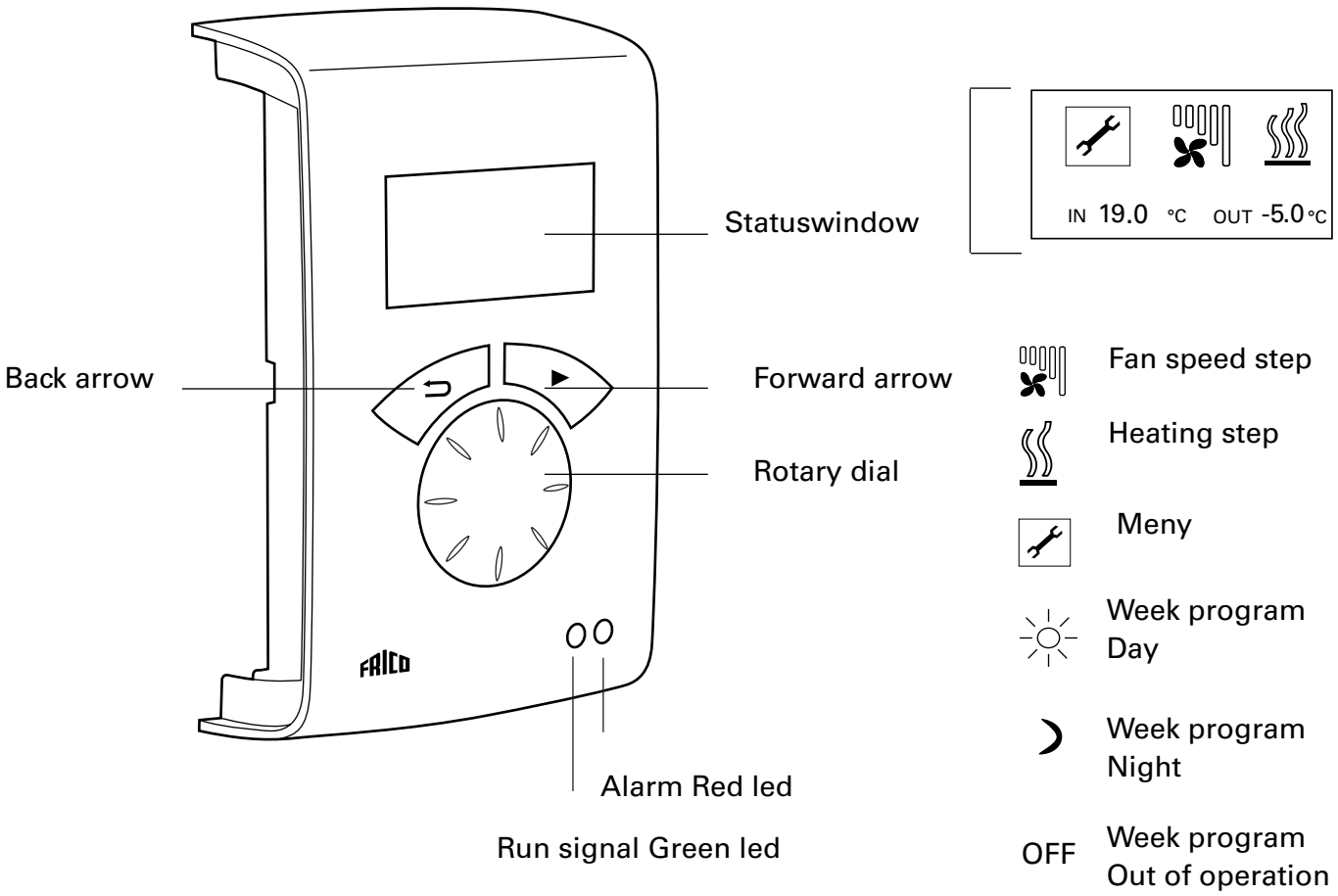
Night time (when the week program is activated or via external signal for night reduction) the damper is fully closed or open according to the setting under Night damper pos.. The fan is controlled by the room temperature and the heating is controlled in steps. When the desired temperature in the premises has been reached, the fan switches off and the damper is closed.

Manual

The fan speed and heating is set manually in the status window. The heating can be set to 2 or 3 steps. Heating is blocked by the outdoor temperature, see: [Installer menu > Settings heating > Outdoor temp. limit]

Control unit SIReUA1

Overview



Explanations

Statuswindow
The display shows prevailing room temperature, outdoor temperature, fan and heating step and day, night mode, or Off when week program is used.

This also displays whether the control is set to auto mode or manual mode.

Forward arrow
Confirm selection and proceed.

Rotary dial
Scroll between alternatives

Back arrow
Go back.
After three minutes the control unit goes back to displaying the status window.

Statuswindow

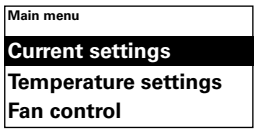
For thermostat/manual control of the fan and heating the relevant symbol is marked in the status window with the forward arrow. Steps can then be set, confirm with the forward arrow. For description, see section Operating modes.

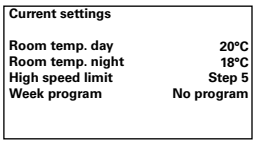
Press the forward arrow to access the main menu.

Main menu

Current settings

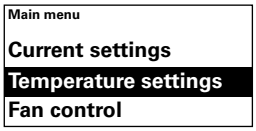
Displays set room temp, high speed limit and week program status.

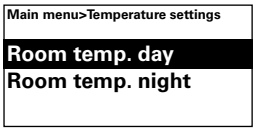




Temperature settings

Set the desired room temperatures to apply for day respectively night mode (room temperature night is used for week program/ night reduction).





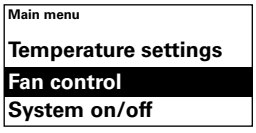
Factory setting

Room temp. day: 20°C (5 – 35°C)

Room temp. night: 18°C (0 – 20°C)

Fan control

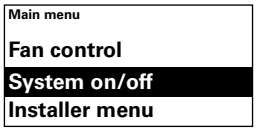
No function. This setting should be done manually in the status menu.

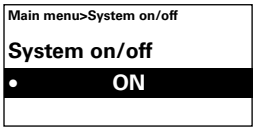


System on/off

Switch the whole unit off manually. In Off the display goes out; as soon as a button is pushed the display lights and shows System on/off. To activate the unit again select On.

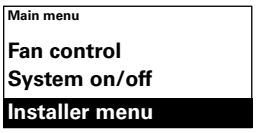
The unit's safety functions are still active when the system is switched off, which means that the fan can continue to run for a moment after mode Off has been selected.





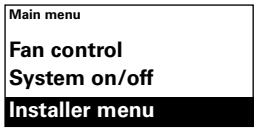
Installer menu

The installer menu is at the bottom of the main menu, this is password protected. See Installer menu in this manual.



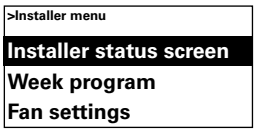
Installer menu

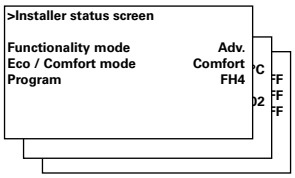
To enter the Installer menu, code 1932 is entered. Select the digits using the rotary dial and confirm using the forward arrow.



Installer status screen

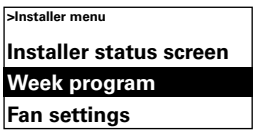
Check the settings. The installer status screen consists of three pages with settings, scroll using the rotary dial.





Week program

Make settings for week program.



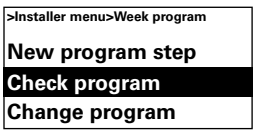
A basic program is pre-entered in SIRe.

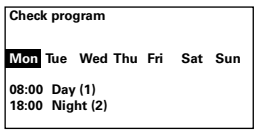
Mon-Fri Day from 08:00, Night from 18:00

Sat Day from 10:00, Night from 16:00

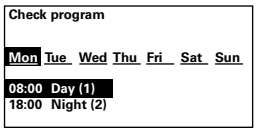
Sun Day from 11:00:00, Night from 14:00

To check which program is set for a particular day, select Check program and then switch between the days using the rotary dial.

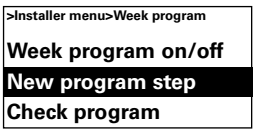


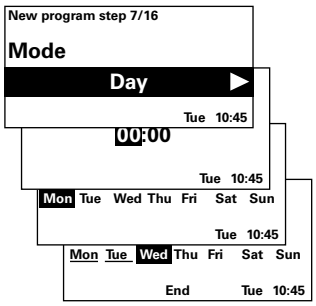


To check which days a certain program is active, select a week day by pressing the forward arrow, the program is marked and those days that the program is used will be underlined, switch between the programs for a particular day using the rotary wheel.

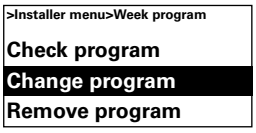


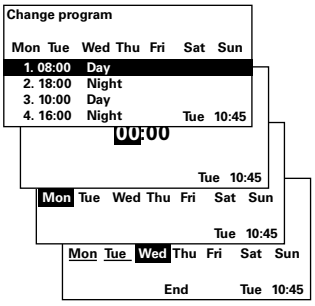
To add program step, select New program step. Confirm your selection with the forward arrow. Select Day, Night or Off (if the unit should not be in operation), set the time for switch on and then for which days the program applies, then go to End to finish.



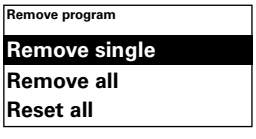


A new program step does not replace a set time for Day for example, but you can instead select to change a program step.
To change a program step, select Change program.

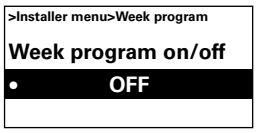




The program steps that should not apply are removed in Remove program. One or all program steps can be removed in the menu. To return to the factory set basic program, select Reset all.

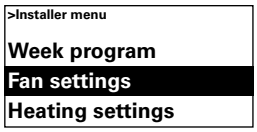


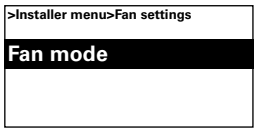
Week program is activated by selecting On, under Week program on/off. In On-mode, a sun, moon or Off in the Status window appears to indicate day, night respectively Off-function.

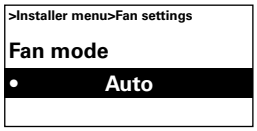


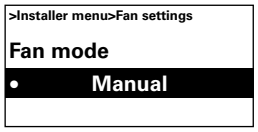
Fan settings

Make settings for fan mode (see also Operating modes section).





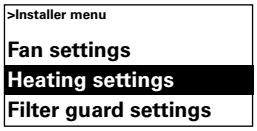




Factory setting
Fan mode: Thermostat / Automatic fan (Thermostat / Manual fan, Manual)

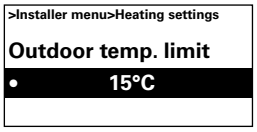
Heating settings

Make settings for heating.



Outdoor temp. limit

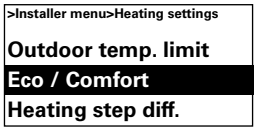
Blocking heating summer time.

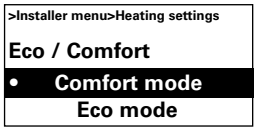


Factory setting
Outdoor temp. limit: 15°C (5 – 30°C)

Eco / Comfort (without mixing cabinet)

Select Comfort to prioritise temperature and ventilation comfort.
Select Eco to prioritise low energy consumption by maximize the outlet temperature to +32°C





Temperature control without mixing cabinet (fan mode Thermostat /Automatic fan):

Comfort

1. Fan starts at set setpoint value.
2. Heating on at set setpoint value – 0.5K

Eco

Fan starts at set setpoint value - 1K.

Heating on at set setpoint value – 2K.

Heating off at set setpoint value.

Temperature control (Outlet temp. limit) with mixing cabinet (fan mode Thermostat/ Automatic fan):

Comfort

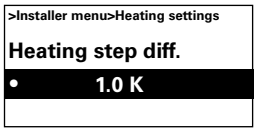
1. Increases heating step.
2. Gradually closes damper to night mode.

Eco

1. Gradually closes damper to night mode.
2. Increases heating step.

Heating step diff.

The temperature difference between connection of the electrical heating step. Factory setting of 1.0 and a set point value of 20°C gives the following function: low output step cuts in at +19.5°C (cuts out at +20.0°C). If the temperature continues to fall below +18.5°C another output step cuts in (cuts out at +19.0°C). For 3 output steps the last step is engaged at +17.5°C and switches off at +19.0°C.

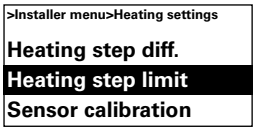


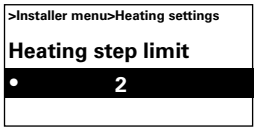
Factory setting

Heating step diff: 1.0 K (0 K – 10 K)

Heating step limit

Possibility of limiting the heating.



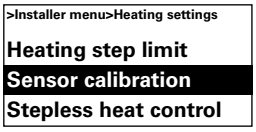


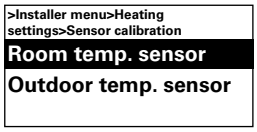
Factory setting

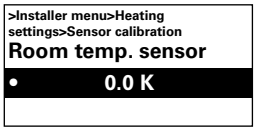
Heating step limit: 2 (SE06-15, 20) 3 (SE30)

Sensor calibration

If the sensor displays the wrong values these can be calibrated. Some display errors may occur, but this is primarily due to the location (cold/hot surfaces etc). The value + or – adds to or subtracts from the measured value (for example +2K gives an increase of the displayed value of 2 degrees).







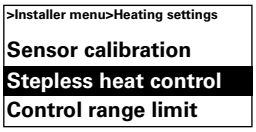
Factory setting

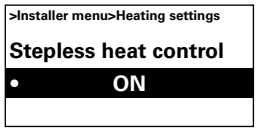
Room temperature sensor: 0.0 K (-10 K – 10 K)

Outdoor temperature sensor: 0.0 K (-10 K – 10 K)

Stepless heat control

For stepless control of electrical heating, for example via external triac.



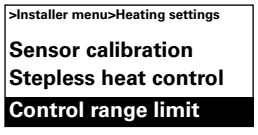


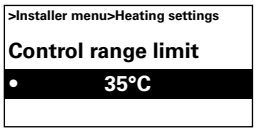
Factory setting

Stepless heat control: ON (Off - not selectable)

Control range limit

The maximum room temperature that a user can select is limited to between 5 – 35°C.



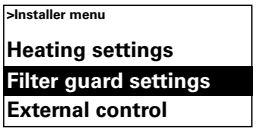


Factory setting

Control range limit temperature: 35°C (5 – 35°C)

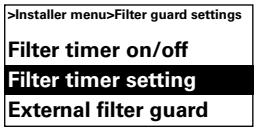
Filter guard settings

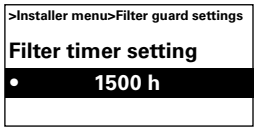
Filter alarm alarms when the set fixed run time has been exceeded.



Filter timer setting

Under Filter timer setting, set the desired run time to between 50 and 9950 hours.





Factory setting
Filter timer setting: 1500 h (50 - 9950 h)

Filter timer on/off

Filter alarm is activated by selecting On, under Filter timer on/off.

Factory setting
Filter timer on/off: Off (On)

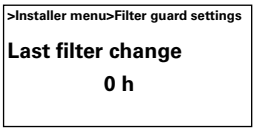
External filter guard

If an external filter guard, e.g. a pressure switch, is used, it is activated under External filter guard, select On.

Factory setting
External filter guard: Off (On)

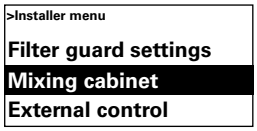
Last filter change

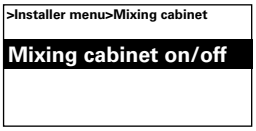
To check the number of run time hours since the last filter replacement, select Last filter change. The time is reset when the filter alarm is reset. If the time is to be reset before the alarm has gone, switch the filter timer on and off.



Mixing cabinet

When the mixing part is used, it is activated under Mixing cabinet settings.



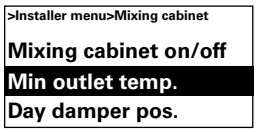


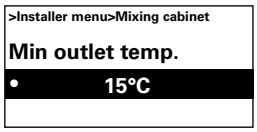
Factory setting
Mixing cabinet on/off: Off (On)

When the mixing cabinet is activated, more options are available in the menu under Mixing cabinet settings.

Min outlet temp.

The outlet temperature must be limited under Min. outlet temp.

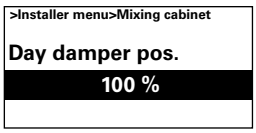




Factory setting
Min outlet temp.: 15°C (5 – 30°C)

Day damper pos.

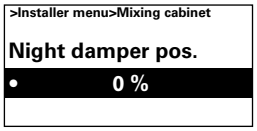
Desired current damper position daytime.



Factory setting
Day damper pos.: 100% (0 – 100%)

Night damper pos.

Desired current damper position nighttime.



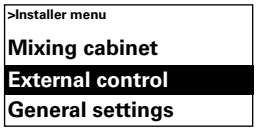
Factory setting

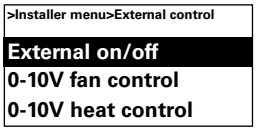
Night damper pos.: 0% (0 – 100%)

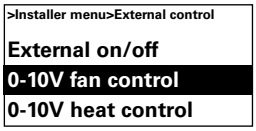
External control (BMS)

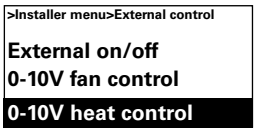
BMS functions can be activated under External control.

Activate External on/off (5-30V AC/DC from BMS) or 0-10V fan control by selecting On under the respective one. See diagram on next page and Connecting external control.









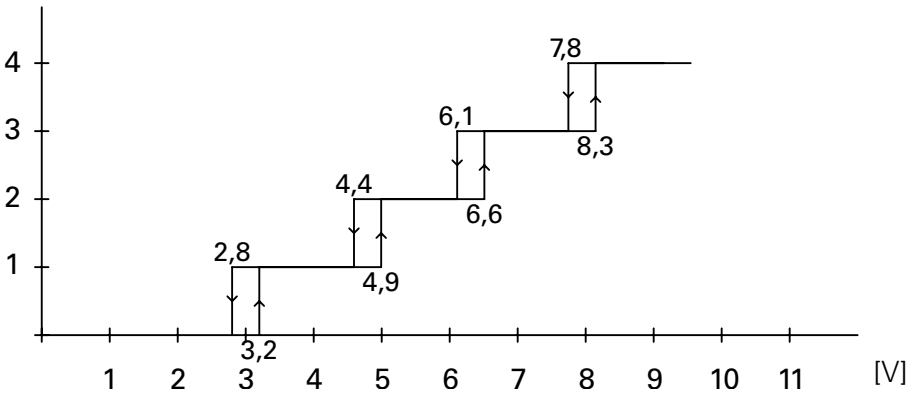


Diagram: Fan step at incoming 0-10V DC voltage level, 4 step

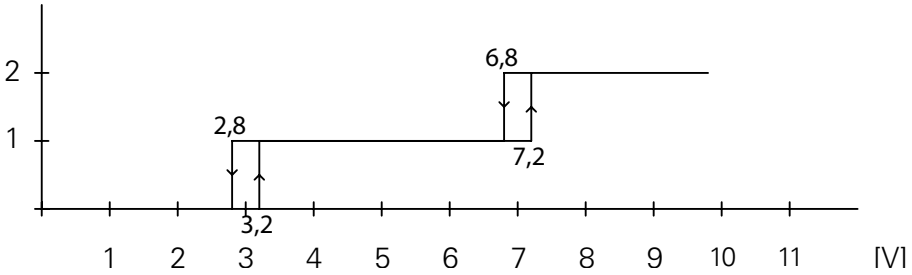


Diagram: Fan step at incoming 0-10V DC voltage level, 2 step

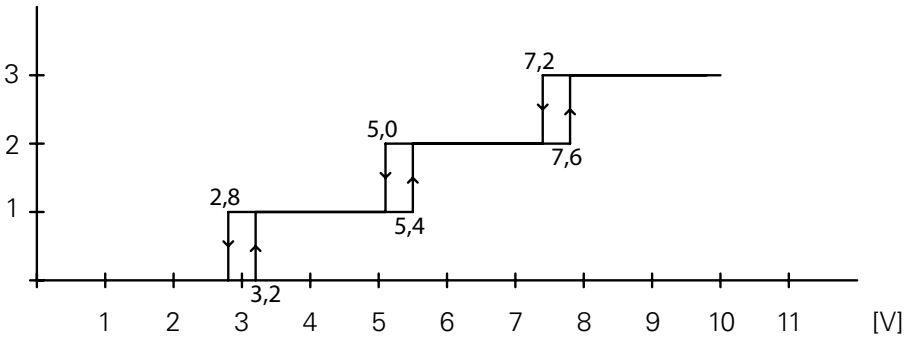


Diagram: Heating step for incoming 0-10V DC voltage level, 3-step.

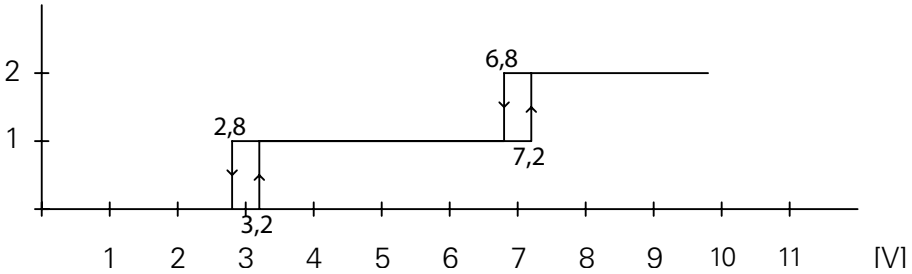
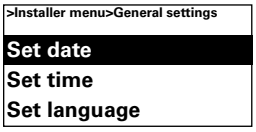


Diagram: Heating step for incoming 0-10V DC voltage level, 2-step.

General settings

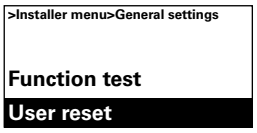
Possibility of making general settings that are also in the Start-up wizard and execute user reset.

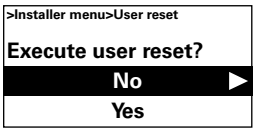
Change the date, time, language and temperature unit.



User reset

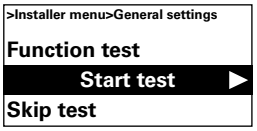
User reset (Room temp. day resp. night, high speed limit) to factory setting.

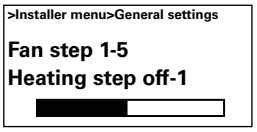


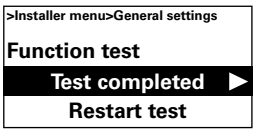


Function test

To test the fan and heating steps, run the function test.







Service menu

The service menu is password protected and is used for support in contact with Frico or authorised installer.

Alarm and error codes

SIRe has different alarms and error codes for safe and problem free operation.
If alarms or error codes have been indicated these must be reset in order to return to normal operation, for example activating the heating again. Fan mode is active even when, for example, the over heating alarm has been indicated.

Displaying alarm and error codes

In event of alarm or error the alarm/error code is shown in the status window. In event of alarm/error code the unit it applies to is displayed.
See Table - Alarms and Table – Error codes.

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 by pressing the forward arrow and selecting Reset alarm and then confirm. If several units give an alarm at the same time, the fact that there are several alarms is indicated, but only one is shown in the display. By resetting that alarm the next alarm can be read.

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

Power failure

Note that in case of power failure the time settings need to be checked, if the time is not set correctly week program will be affected.

Overheat protection

SE06-15:
The over heating protection is intended to restrict the exhaust temperature to 70 °C. At 70 °C an output step is tripped off. If the temperature continues to rise all output is interrupted at 75 °C. If the temperature continues to rise despite this, for example because of a faulty contactor, the fan will start to spin at 70 °C to keep the temperature down. At the same time there is an over heating alarm, see Table - Alarm. At internal temperatures of +80 °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.

SE20-30:
The over heating protection is intended to restrict the exhaust temperature to 85 °C. At 85 °C an output step is tripped off. If the temperature continues to rise all output is interrupted at 90 °C. If the temperature continues to rise despite this, for example because of a faulty contactor, the fan will start to spin at 85 °C to keep the temperature down. At the same time there is an over heating alarm, see Table - Alarm. At internal temperatures of 95 °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 or Frico.

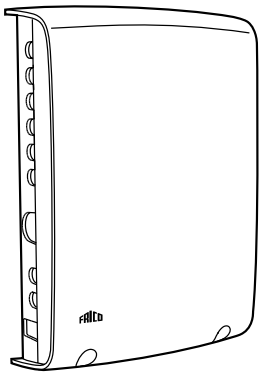
Table - Alarm

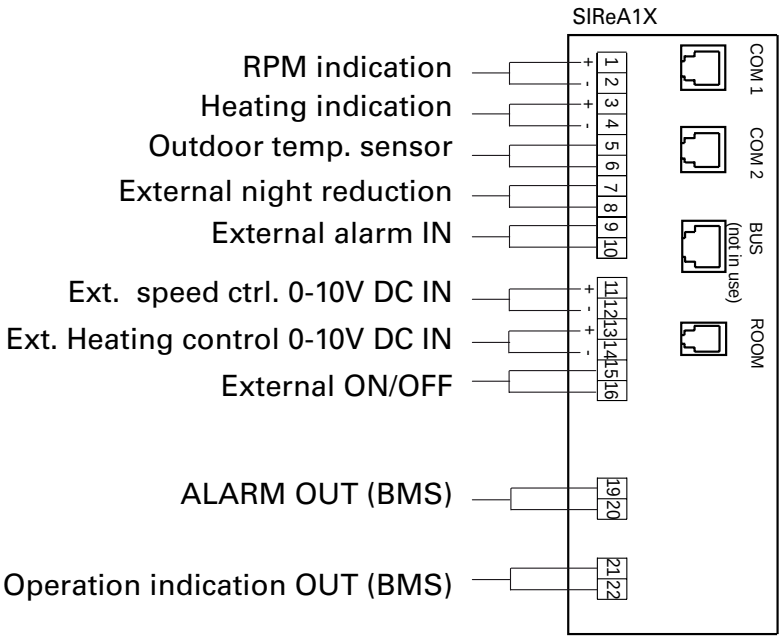
Alarm		Cause	Action
A1	Motor alarm	Thermal switch has deployed. One or several motors have overheated. (Only units with withdrawn thermal switches.)	Check that nothing is obstructing the unit's air intake and exhaust. When the overheated motor has cooled the thermal switch shuts again and the alarm can be reset. At repeated alarms, check the motors, replace damaged motors.
A2	Over heating alarm	The temperature in the unit has exceeded the alarm limit for overheating.	Check that nothing is obstructing the unit's air intake and exhaust, the function of the actuator and valve, flow temperature and internal temperature sensor.
A4	Filter alarm	Fixed run time before the filter alarm has been reached. or the external filter alarm has been activated.	Replace or clean the filter, adjust any alarm time based on how dirty the filter was and reset the alarm.
A5	Ext. alarm	External alarm input on SIReA1X has been activated.	Check the external alarm.

Table - Error codes

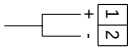
Error code		Cause	Action
E1	Communication	SIReB1X has no contact with SIReA1X.	Check connection between the boards. Replace any modular cables.
E2	ID Error	Two or more SIReB1 X have the same ID number.	Interrupt the current and select different ID numbers for all SIReB1X in the system.
E3	ID Error	One or several SIReB1X does not have a program.	Contact Frico for support.
E4	Room sensor error	Fault on or missing external room sensor SIReRTX connected to SIReB1X.	Always disconnect the power when connecting or disconnecting sensors. Check connection of the sensor.
E8	Internal sensor faults	Fault on or missing internal sensor in the unit.	Check connection of the sensor. If there is no sensor, contact Frico for support.
E10	ID Error	Two or more SIReB1X in the system have different programs.	Contact Frico for support.
E12	Room sensor error	Error in or missing external room sensor SIReRTX connected to SIReA1X.	Always disconnect the power when connecting or disconnecting sensors. Check connection of the sensor.
E20	Communication	Control unit SIReUA1 has no contact with SIReA1X.	Check the connection. Replace any modular cables.
E21	Room sensor error	Error in the internal room sensor in the control unit SIReUA1.	Check connection between SIReUA1 and SIReA1X. Replace any modular cables. If the error is not rectified SIReUA1 must be replaced.
E23	Soft ware error	Contact Frico for support.	

Connecting external control - including BMS functions

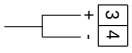




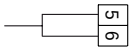
RPM indication
0-10V DC OUT (max 5 mA)
Signal from SIRe indicates fan control, corresponds to 0-100% fan control. Always active.



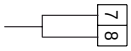
Heating indication
0-10V DC OUT (max 5 mA)
Signal from SIRe indicates connected heating step. Always active.



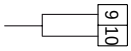
Outdoor temp. sensor
(obligatory)
SIReOTX



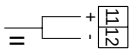
External night reduction
on/off (potential-free switch)
Closes to activate the night reduction function. Always active.



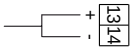
External alarm IN
(potential free contact)
An external filter guard closes to indicate an alarm. Set Parameter: >> Installer menu > Filter guard > External filter guard = On



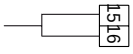
External rpm control 0-10V DC
Control fan control 0-100%.
Set parameter: >> Installer menu > External control > 0-10V Fan control = On



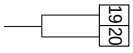
Ext. Heating control 0-10V DC IN
Activates heating. Set parameter: >> Installer menu > External control> 0-10V heating control. = On



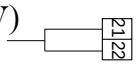
External on/off 5-30V AC/DC
External signal activates the unit.
Set parameter: >> Installer menu > External control > External On/Off= On



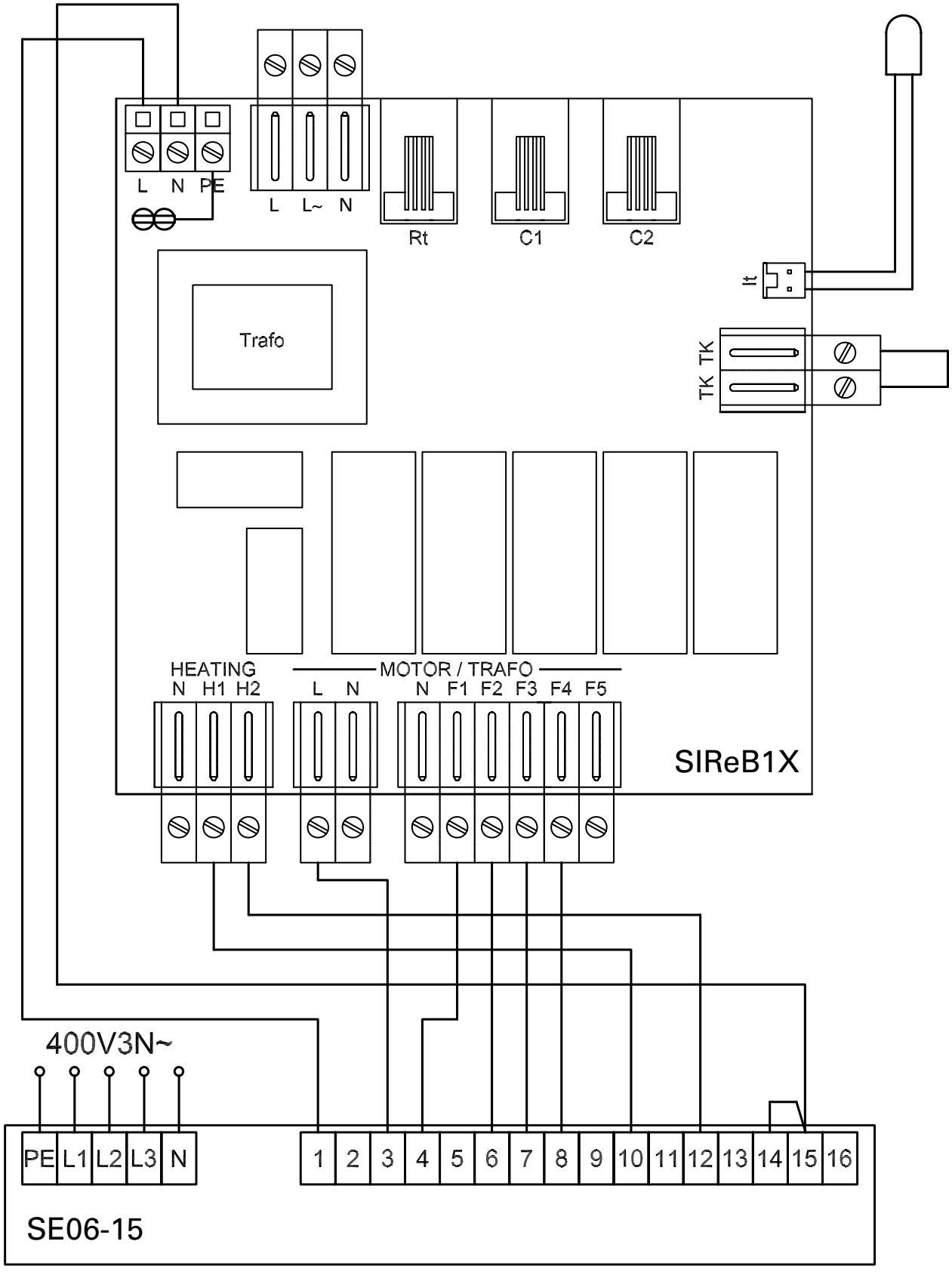
Alarm outgoing (BMS) (potential-free switch, max 3A, 230V)
Outgoing alarm indication.
Always active.
Closed = buzzer alarm
Open = no alarm



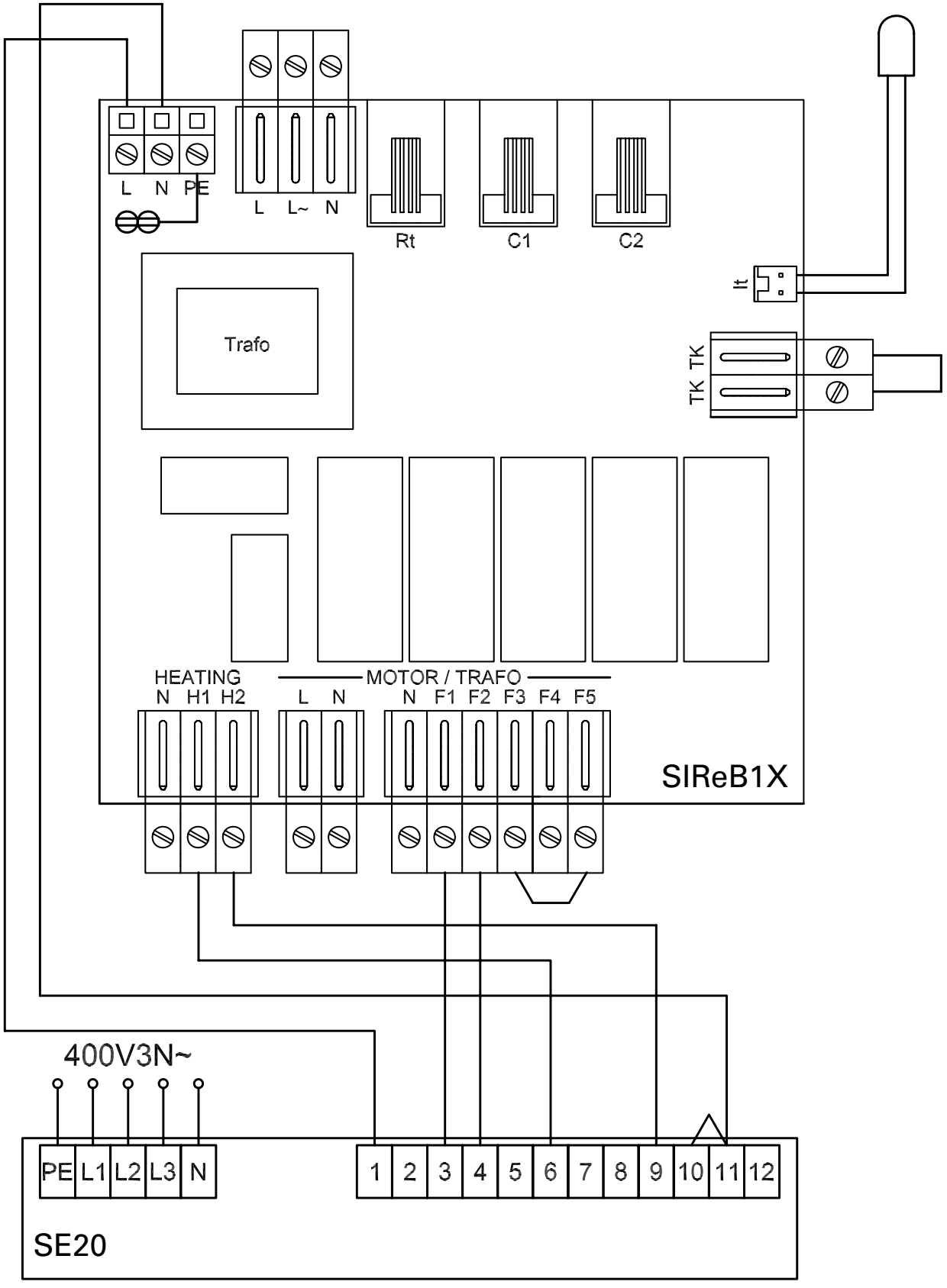
Operation indication OUT (BMS)
(potential free contact) max 3A, 230V)
Outgoing operation indication.
Always active.



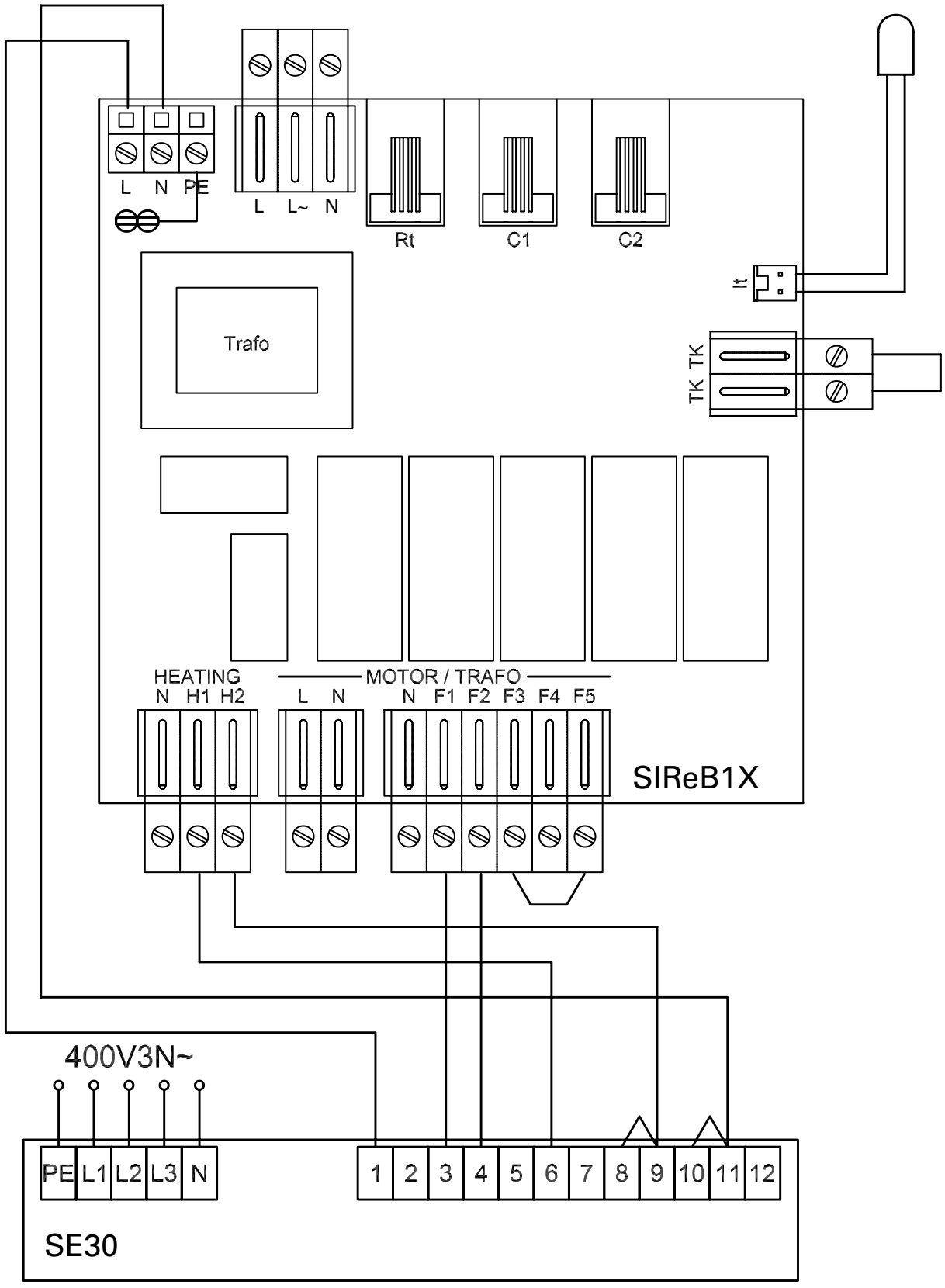
Connections between SIReB1X and Panther SE06, SE09, SE12 and SE15.



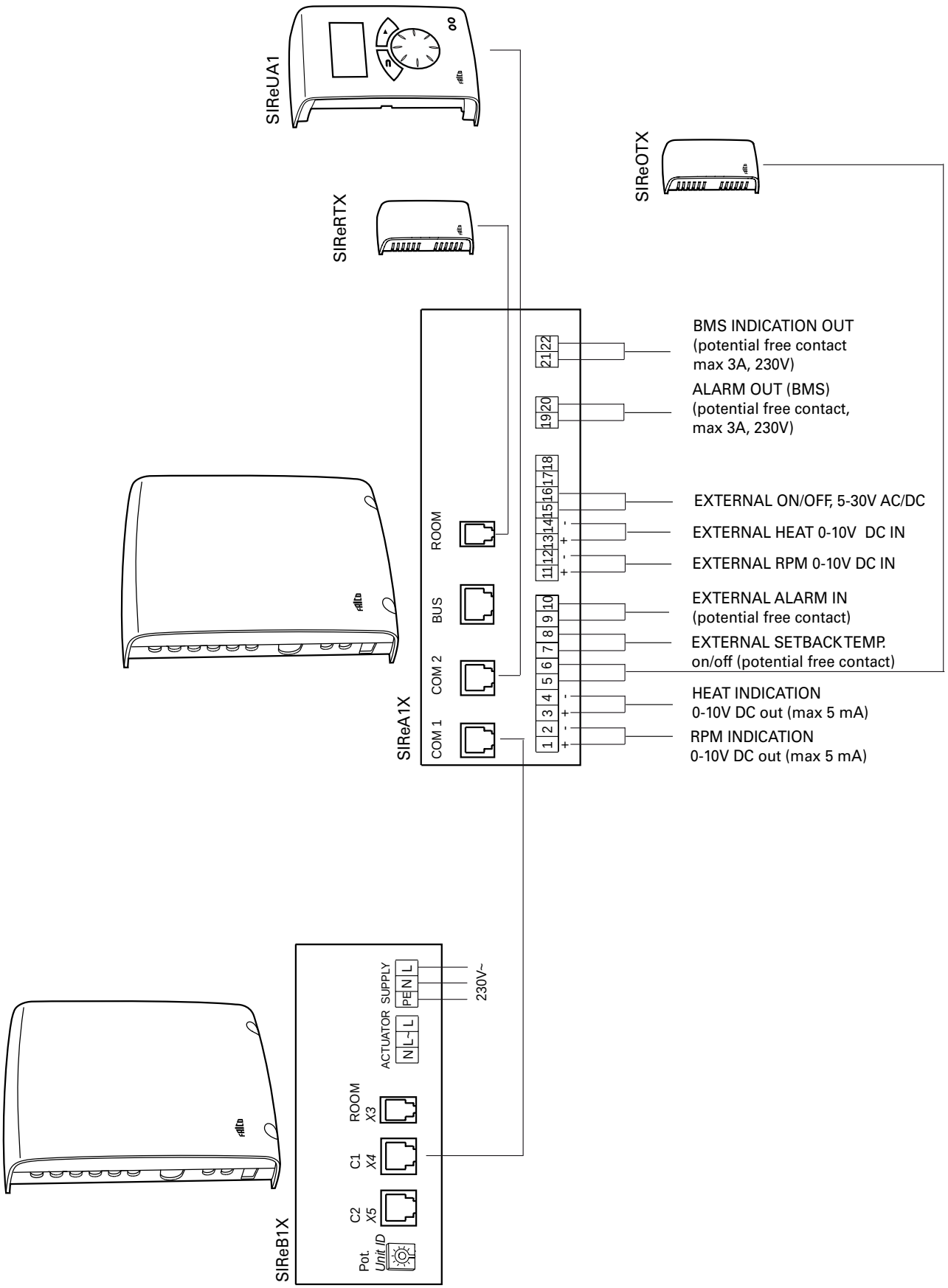
Connections between SIReB1X and Panther SE20



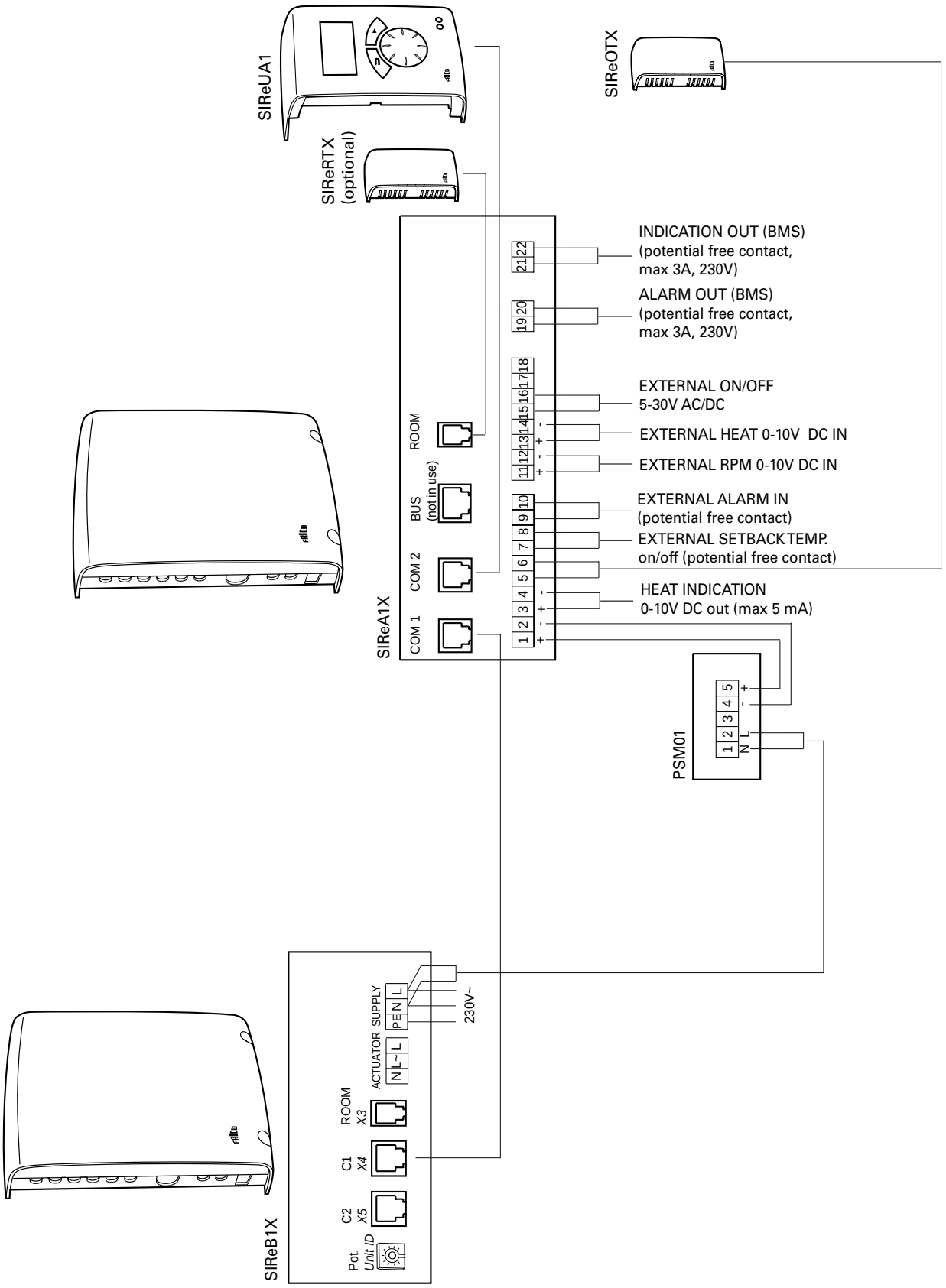
Connections between SIReB1X and Panther SE30



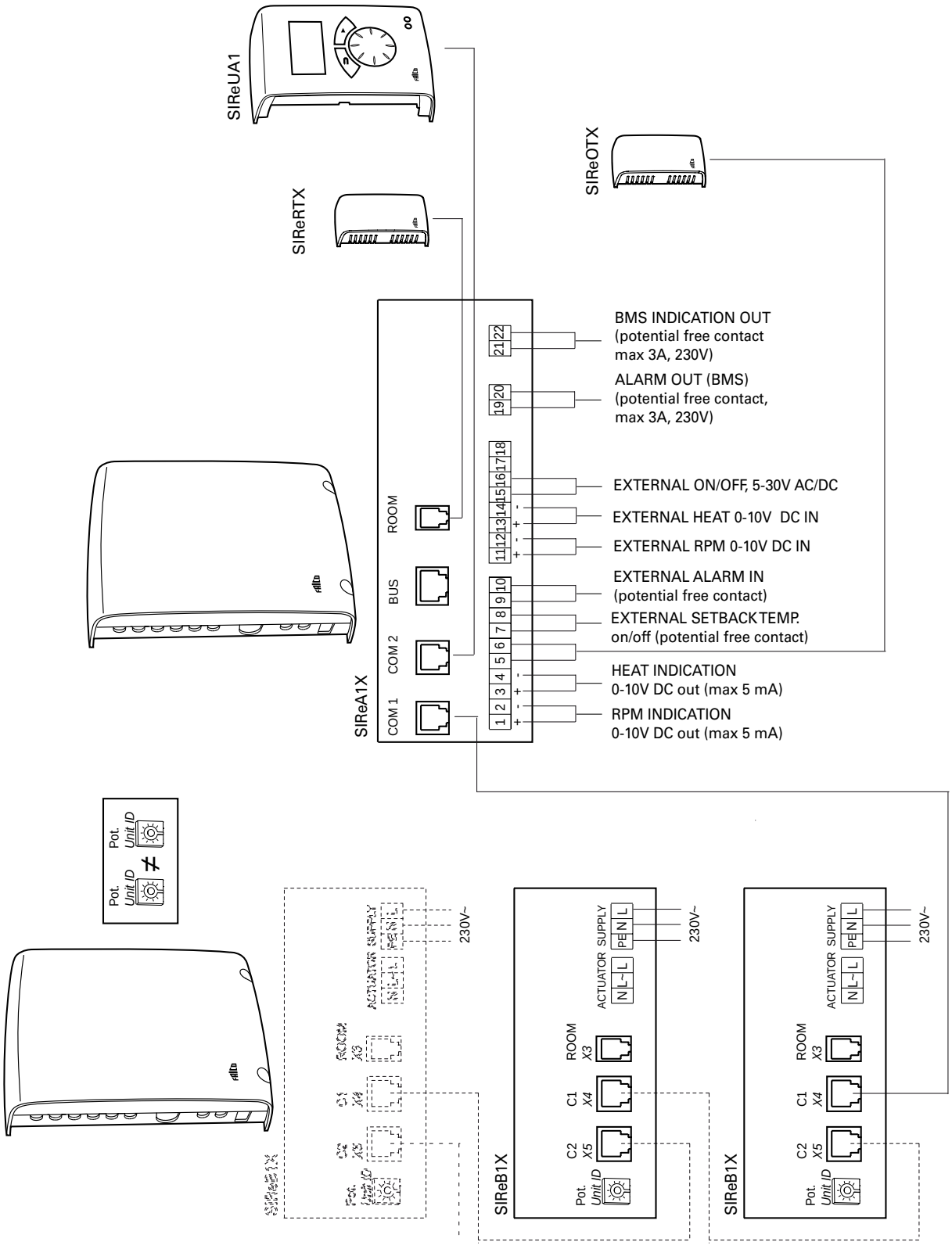
Wiring diagram - Advanced – without mixing cabinet



Wiring diagram - Advanced – with mixing cabinet



Wiring diagram - Advanced – parallel connection



Main office
Frico AB
Box 102
SE-433 22 Partille
Sweden

Tel: +46 31 336 86 00
Fax: +46 31 26 28 25
mailbox@frico.se
www.frico.se

For latest updated information and information about your local contact: www.frico.se

Art no: E4441, 2012-06-08 HH/SÅ