Preheater
Topvex SC, Topvex TC

Installation instructions

GB

Document in original language | 247019 · A001

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1 Warnings

Danger

- Make sure that the mains power 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 General

A preheater is available as an accessory for Systemair Topvex SC, Topvex TC. Install the preheater in the outdoor duct to prevent icing in the heat exchanger, compensate for loss of heating capacity during by-pass defrosting or to supplement the heating capacity during colder conditions.

The kit contains of 1 preheater, 1 outdoor air sensor and 1 instruction.

3 Installation

3.1 Outdoor air sensor

Mount the enclosed outdoor air sensor to the outdoor air duct (OS in figure 1).

Replace the existing OS-label inside the air handling unit with the new PHS-label. Attach the new OS-label next to the added outdoor air sensor.

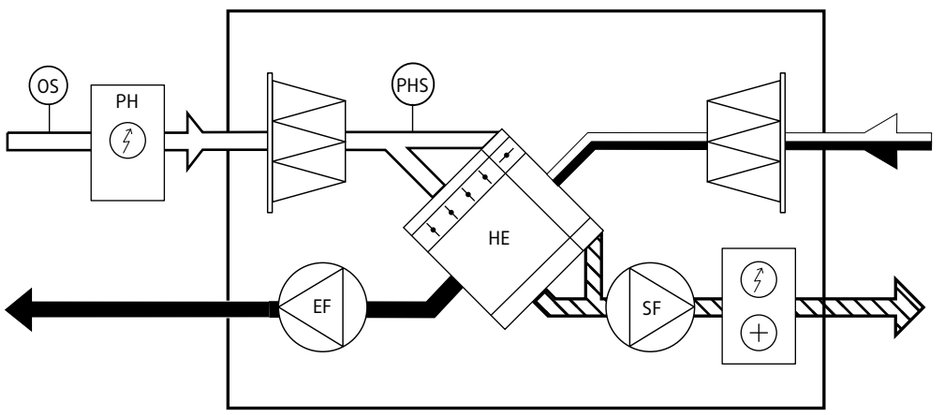
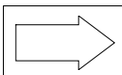
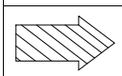


Fig. 1

	Outdoor air
	Supply air
	Extract air
	Exhaust air
OS	Outdoor air sensor
PH	Preheater
PHS	Preheater temperature sensor
EF	Extract air fan
SF	Supply air fan
HE	Heat exchanger

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3.2 Wiring diagram

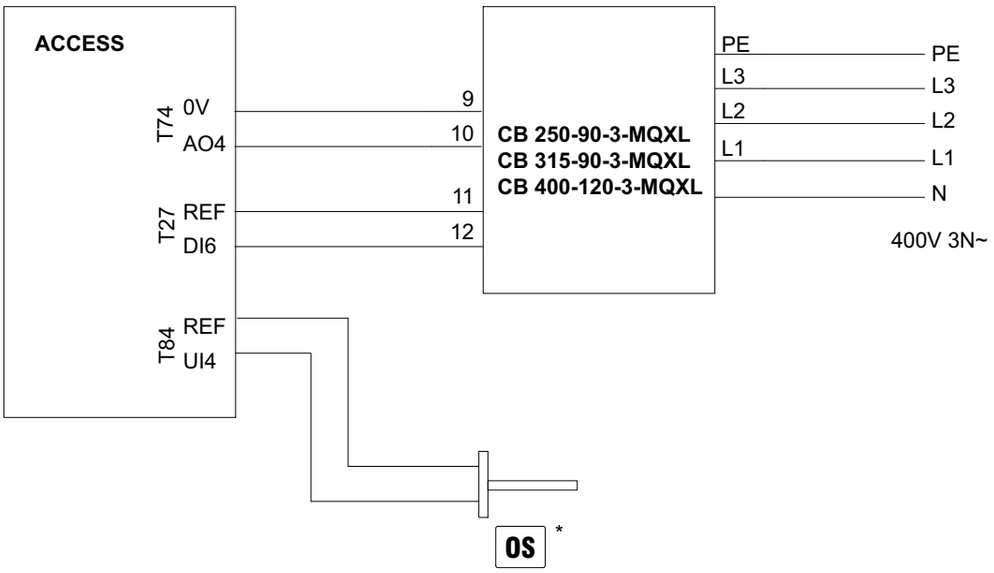

Fig. 2 Wiring CB

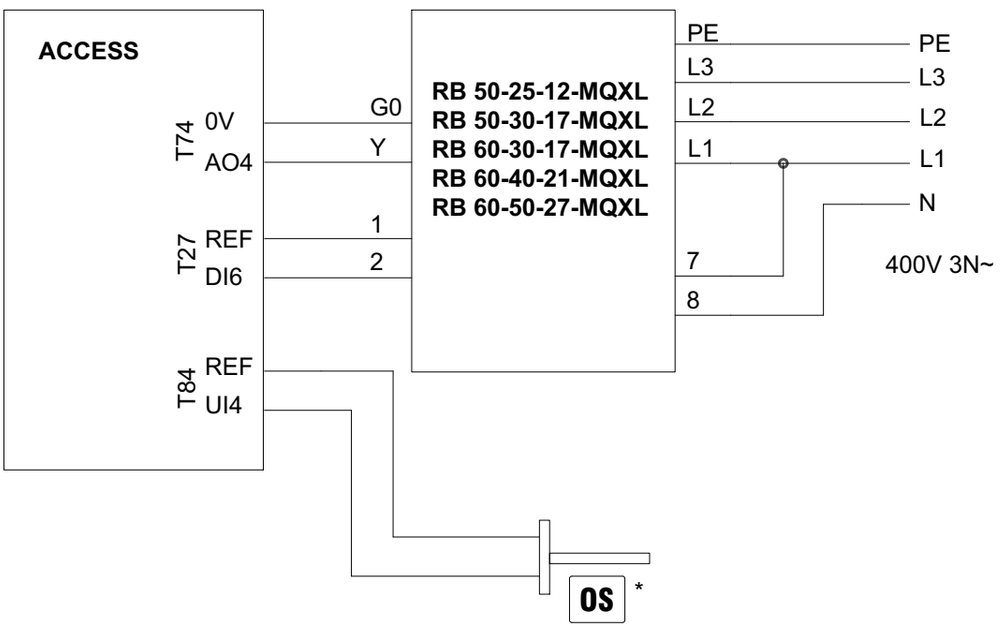

Fig. 3 Wiring RB

* See chapter 3.1

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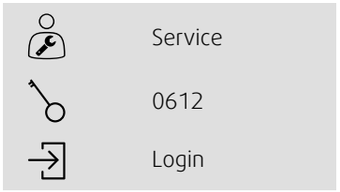
4 How to set up the function

Log in with service mode using password 0612.

Overview:



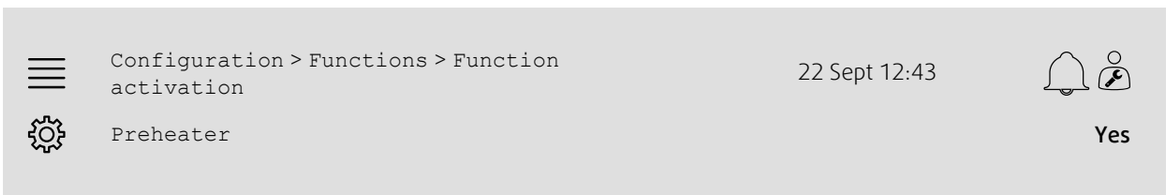
Step by step:

1. Open the log in window
2. Select service from drop down list
3. Type in password 0612
4. Press Login.

4.1 Activation

Activate the Preheater function by selecting `Yes as Preheater` in the list of available functions in the `Configuration > Functions > Function activation` menu.

Overview



Step by step:

1. Select `Configuration` from the navigation icons
2. Select `Functions`
3. Select `Function activation`
4. Select Yes as `Preheater`

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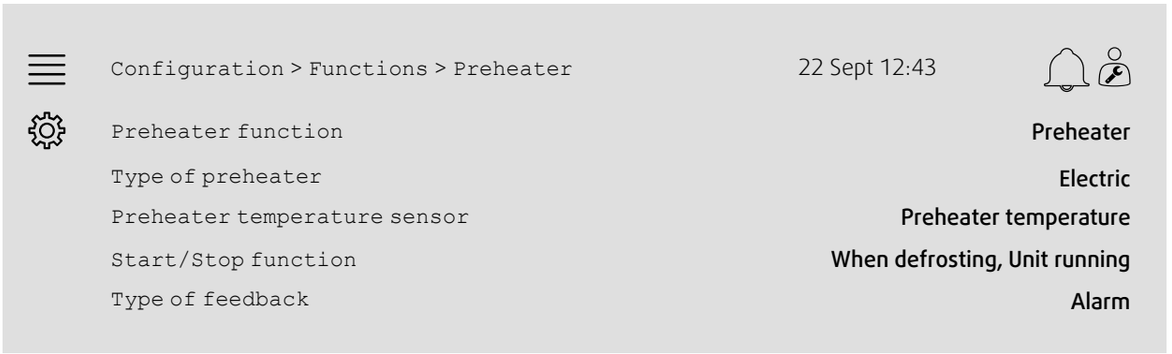
4.2 Configuration

Configure the preheater and its running mode in the `Configuration` > `Functions` > `Preheater` menu.

Note:

Select `When defrosting` if preheater is used to maintain supply air temperature at desired level only during by-pass defrosting (Pressure monitoring).
Select `Unit running` if preheater is used to prevent icing in the exchanger or to support section defrosting or heating capacity in very cold climates.

Overview



Step by step:

1. Select `Configuration` from the navigation icons
2. Select `Functions`
3. Select `Preheater`
4. Select `Preheating` as `Preheater function`
5. Select `Electric` as `Type of preheater`
6. Select `Preheater temperature` as `Preheater temperature sensor`
7. Select `When defrosting` (see note) or `Unit running` (see note) as `Start/Stop function`
8. Select `Alarm` as `Type of feedback`

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4.3 Allocation

`Configuration > I/O allocation settings`

Select I/O (in-/output) placement for the connected temperature sensor and control/feedback signals to/from the electric heater in the `Configuration > I/O allocation settings` submenus.

Caution

Do not use the same in- or output for several functions.

Overview:

`Configuration > I/O allocation settings > Analog inputs` — 22 Sept 12:43

Analog inputs	Device	Position
`Intake air temperature`	`Controller`	`AI4`
`Preheater temperature`	`PDT2`	`UI1`

`Configuration > I/O allocation settings > Digital inputs` — 22 Sept 12:43

Digital inputs	Device	Position
`Feedback preheater`	`Controller`	`DI6`

`Configuration > ... > Digital inputs> Feedback preheater` — 22 Sept 12:43

Name	`Feedback preheater`
Original name	Feedback preheater
Contact function	`Normally closed`

`Configuration > I/O allocation settings > Analog outputs` — 22 Sept 12:43

Analog outputs	Device	Position
`Preheater`	`Controller`	`AO4`

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Step by step:

1. Select `Configuration` from the navigation icons
2. Select `I/O allocation settings`
3. Select `Analog inputs`
4. Allocate `Intake air temperature` to AI4
5. Allocate `Preheater temperature` to UI1 on Controller
6. Go back to `I/O allocation settings` (use the navigation path `Configuration` > `I/O allocation settings`)
7. Select `Digital inputs`
8. Allocate `Feedback preheater` to DI6
9. Select `Feedback preheater`
10. Adjust `Contact function` to `Normally closed`
11. Go back to `I/O allocation settings` (use the navigation path `Configuration` > `I/O allocation settings`)
12. Select `Analog outputs`
13. Allocate `Preheater` to AO4
14. Go back to `I/O allocation settings` (use the navigation path `Configuration` > `I/O allocation settings`)

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4.4 Operation settings

`Data & Settings > Temperature control > Preheater`

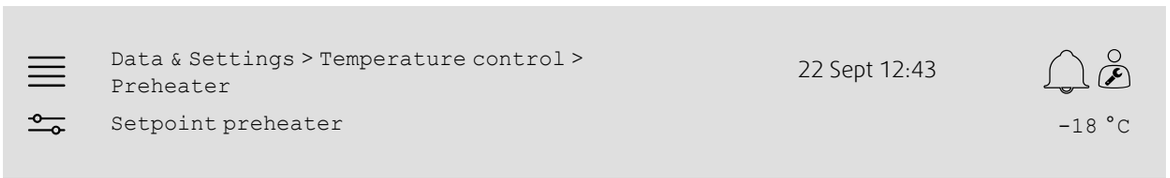
Adjust the preheater temperature set point in the `Data & Settings > Temperature control > Preheater` menu

Note:

When defrosting:
To maintain a supply temperature during by-pass defrosting the preheater need to compensate for the missing heating capacity. E.g. if the desired supply air temperature is 22 °C, but the heating capacity is only 10 °K the preheater setpoint need to be set to 12 °C.

Unit running:
Example A: To prevent any ice build-up in the exchanger the preheater setpoint need to be 0 °C
Example B: In very cold climates the preheater setpoint need to equal the outdoor temperature used for dimensioning the unit's heating capacity. E.g. If the unit is dimensioned for outdoor temperatures down to -18 °C but outdoor temperatures in this location may be even lower the preheater setpoint need to be -18 °C.

Overview:



Step by step:

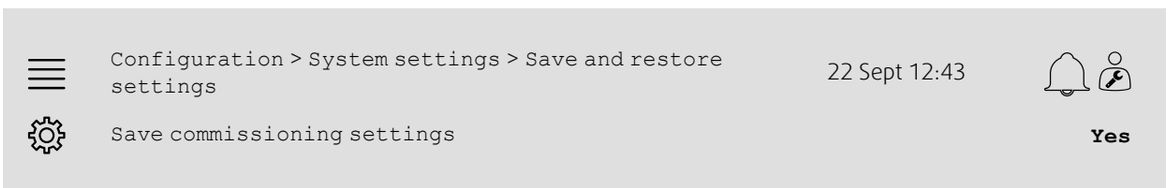
1. Select `Data & Settings` from the navigation icons
2. Select `Temperature control`
3. Select `Preheater`
4. Adjust `Setpoint preheating` to the desired temperature setpoint.

4.5 Save commissioning settings

When the installation is complete and all functions are tested it is recommended to save a local backup of the current configuration in the control unit.

Select `Yes` on `Save commissioning settings` in the `Configuration > System settings > Save and restore settings` menu.

Overview:



Step by step:

1. Select `Configuration` from the navigation icons
2. Select `System settings`
3. Select `Save and restore settings`
4. Select `Yes` on `Save commissioning settings`.

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