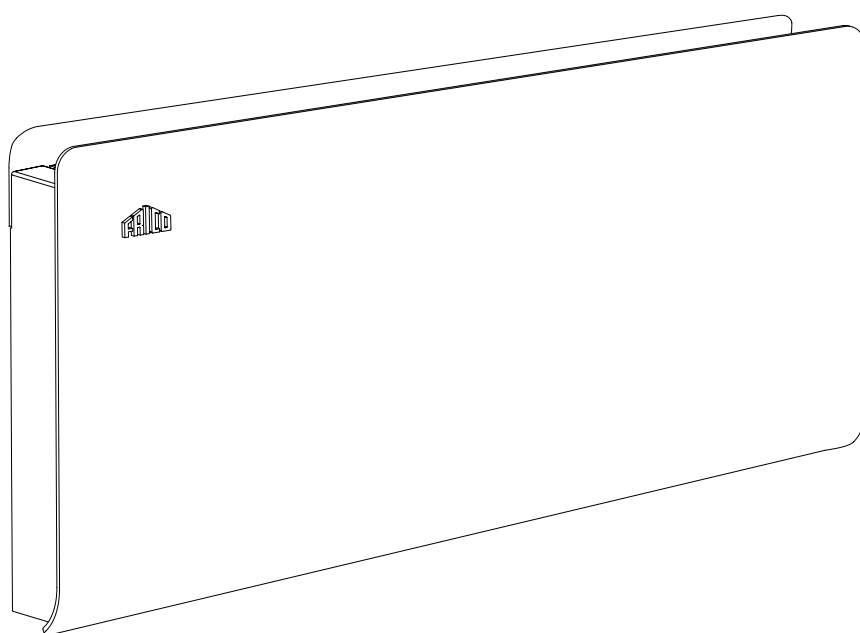


Original instructions

PF Smart



SE 9

EN ... 19

NO ... 28

DE ... 38

FR ... 49

NL ... 60

FI ...71

RU ...81

ES ...92

PL ...103

- SE** Introduktionssidorna består huvudsakligen av bilder. För översättning av de engelska texter som används, se respektive språksidor.
- EN** The introduction pages consist mainly of pictures. For translation of the English texts used, see the respective language pages.
- NO** Introduksjonssidene består hovedsakelig av bilder. For oversettelse av de engelske tekstene, se de respektive språksidene.
- FR** Les pages de présentation contiennent principalement des images. Pour la traduction des textes en anglais, consultez la page correspondante à la langue souhaitée.
- DE** Die Einleitungsseiten bestehen hauptsächlich aus Bildern. Für die Übersetzung der verwendeten Texte in englischer Sprache, siehe die entsprechenden Sprachseiten.
- NL** De inleidende pagina's bevatten hoofdzakelijk afbeeldingen. Voor een vertaling van de gebruikte Engelse teksten, zie de pagina's van de resp. taal.
- FI** Esittelysivut koostuvat lähinnä kuvista. Suvuilla olevien enlanninkielisten sanojen käännökset löytyvät ko. kielisivuilta.
- ES** Las páginas introductorias contienen básicamente imágenes. Consulte la traducción de los textos en inglés que las acompañan en las páginas del idioma correspondiente.
- RU** Страницы в начале Инструкции состоят в основном из рисунков, схем и таблиц. Перевод встречающегося там текста приведен в разделе RU.
- PL** Początkowe strony zawierają głównie rysunki. Tłumaczenie wykorzystanych tekstów angielskich znajduje się na odpowiednich stronach językowych.

PFS

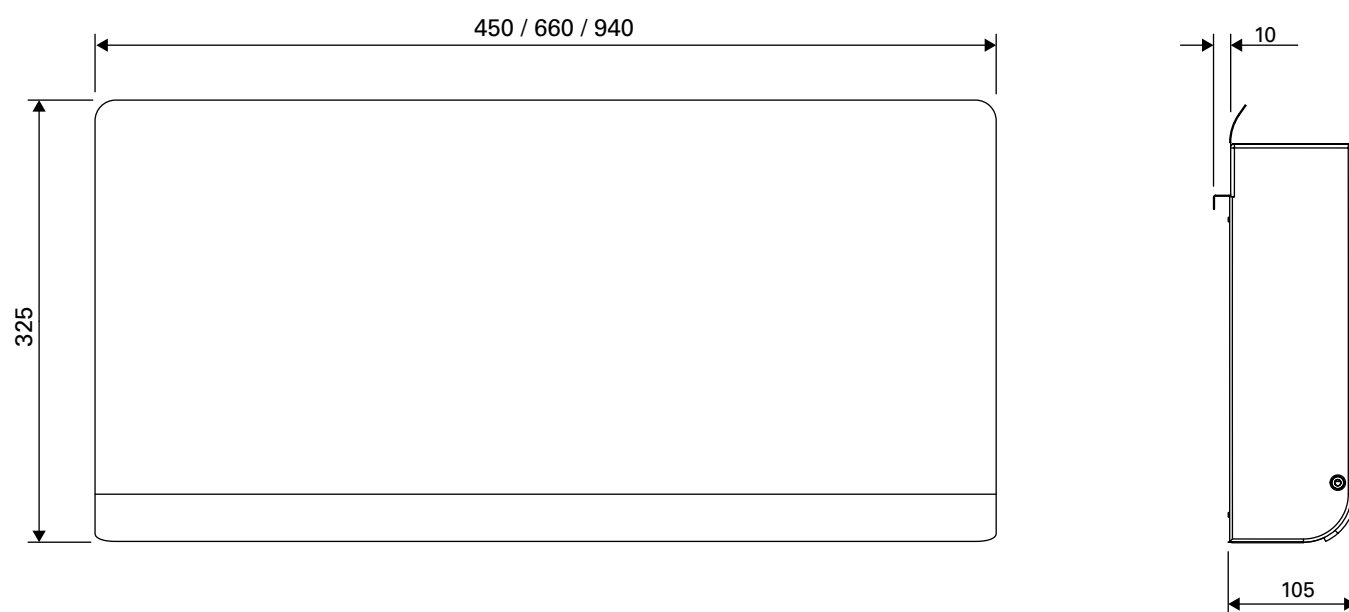


Fig. 1

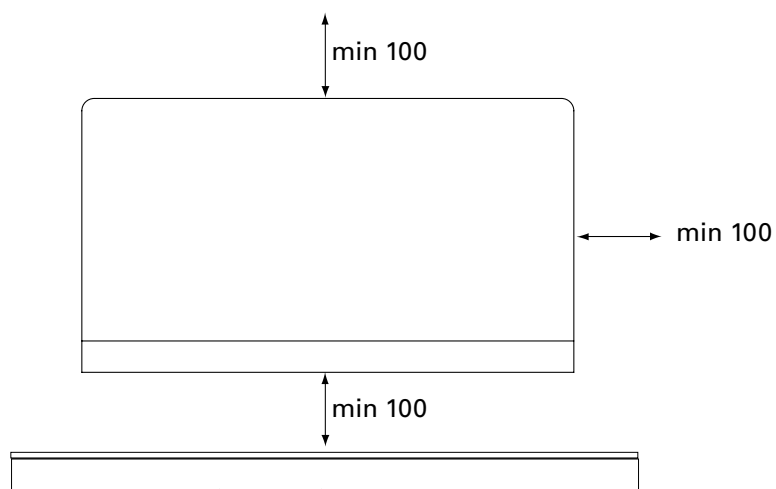
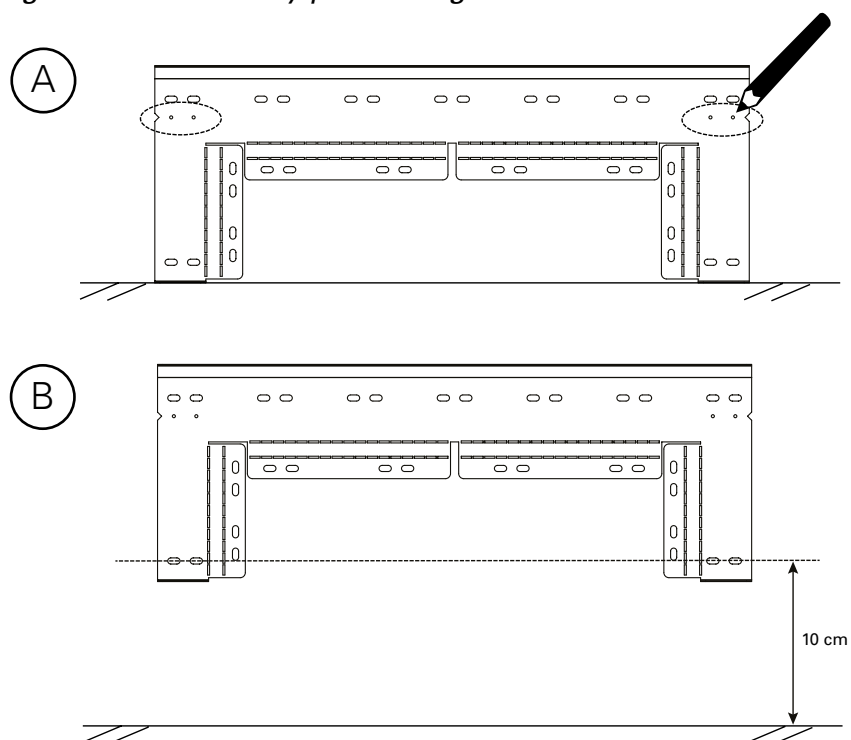


Fig. 2: Minimum distance

Mounting with wall bracket

Possibility to use guide holes for easy positioning



Align the wall bracket

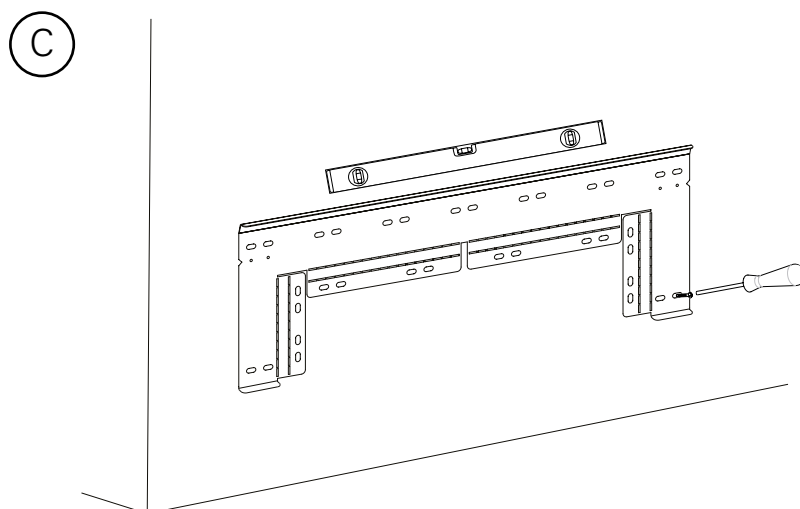


Fig. 3: Mounting wall bracket

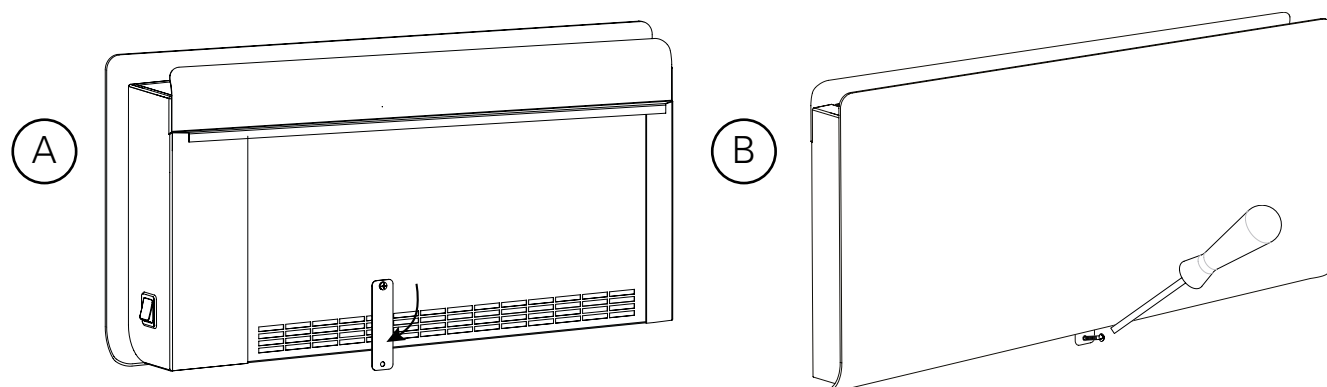


Fig. 4: Fastening with lockplate

Mounting when a connection box is to be placed behind the unit

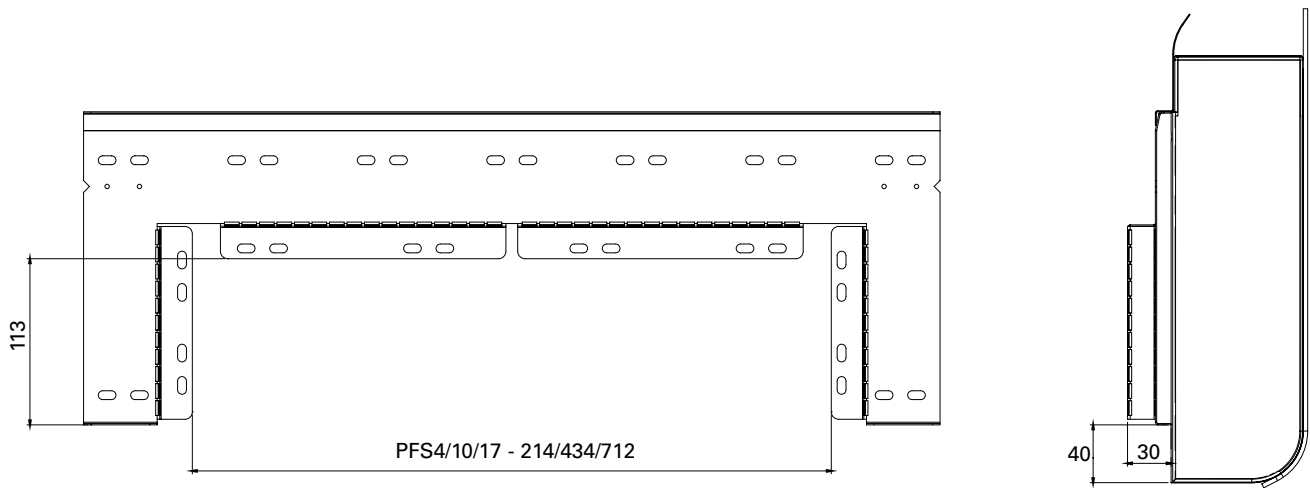


Fig. 5: Free space to mount the connection box behind the unit

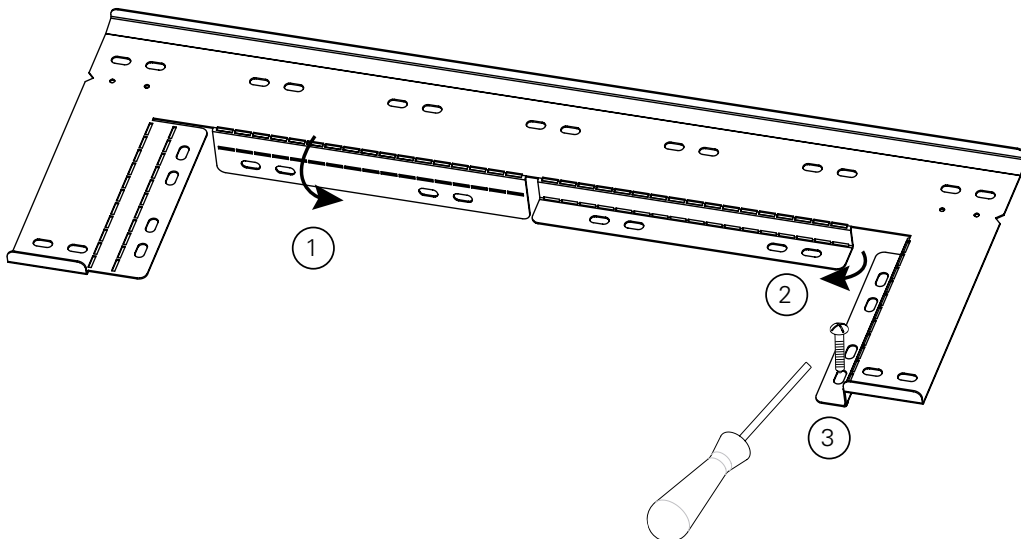


Fig. 6: Bending the wall bracket

Portable use

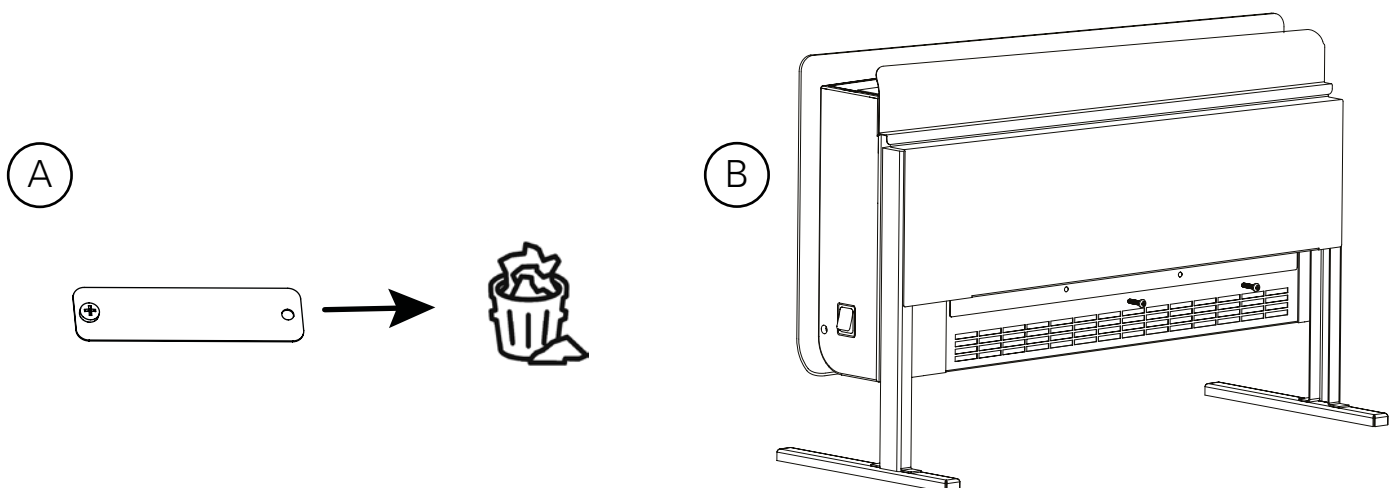


Fig. 7: Floor stand

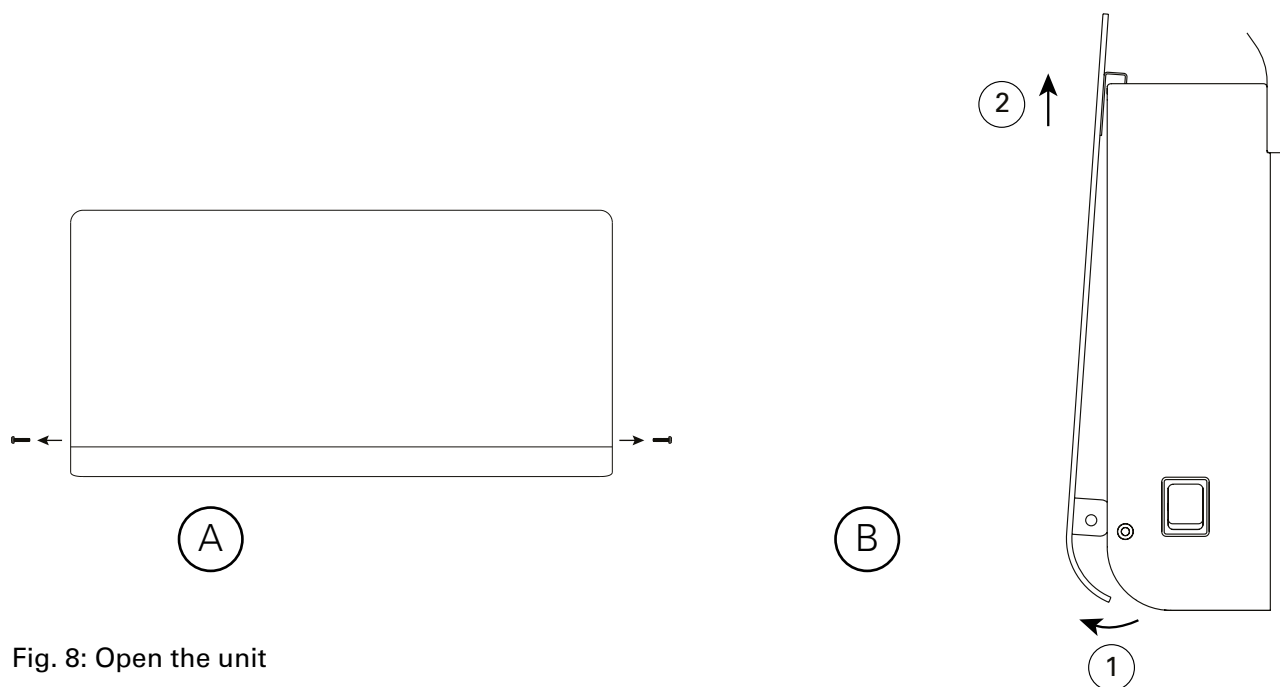


Fig. 8: Open the unit

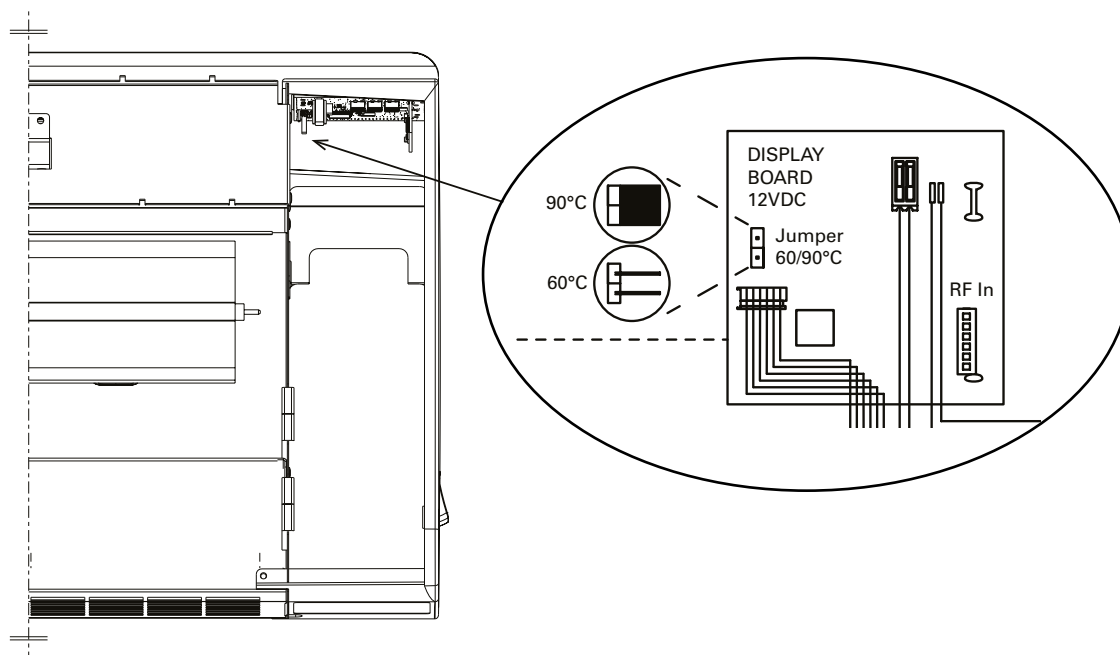
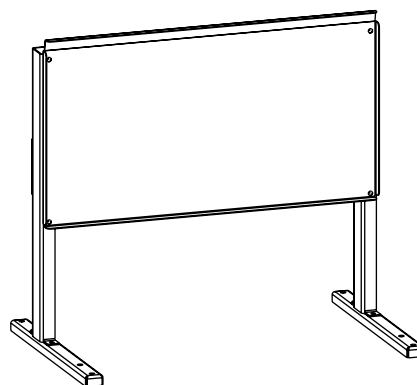


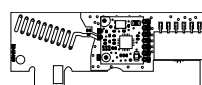
Fig. 9: Changing the maximum surface temperature from 90 °C to 60 °C by removing the jumper. Default 90 °C.

Accessories

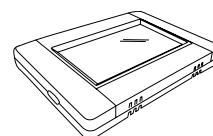
PFSS4	PFSE4
PFSS10	PFSE10
PFSS17	PFSE17
PFSRF	PFSE, PFSD
PFSH	PFSE, PFSD



PFSS



PFSRF



PFSH

⚡ Electrical heat 230V~ PFSE

Type	Output [W]	Airflow [m³/h]	Sound level* [dB(A)]	Voltage [V]	Amperage [A]	Output Motor (12V) [W]	LxHxD [mm]	Weight [kg]
PFSE4	400	40/60	26,5/37	230V~	1,8	1,2	450x325x105	4,1
PFSE10	1000	60/100	28/38,5	230V~	4,4	1,8	660x325x105	5,8
PFSE17	1750	100/150	29/40,5	230V~	7,6	3,0	940x325x105	8,1

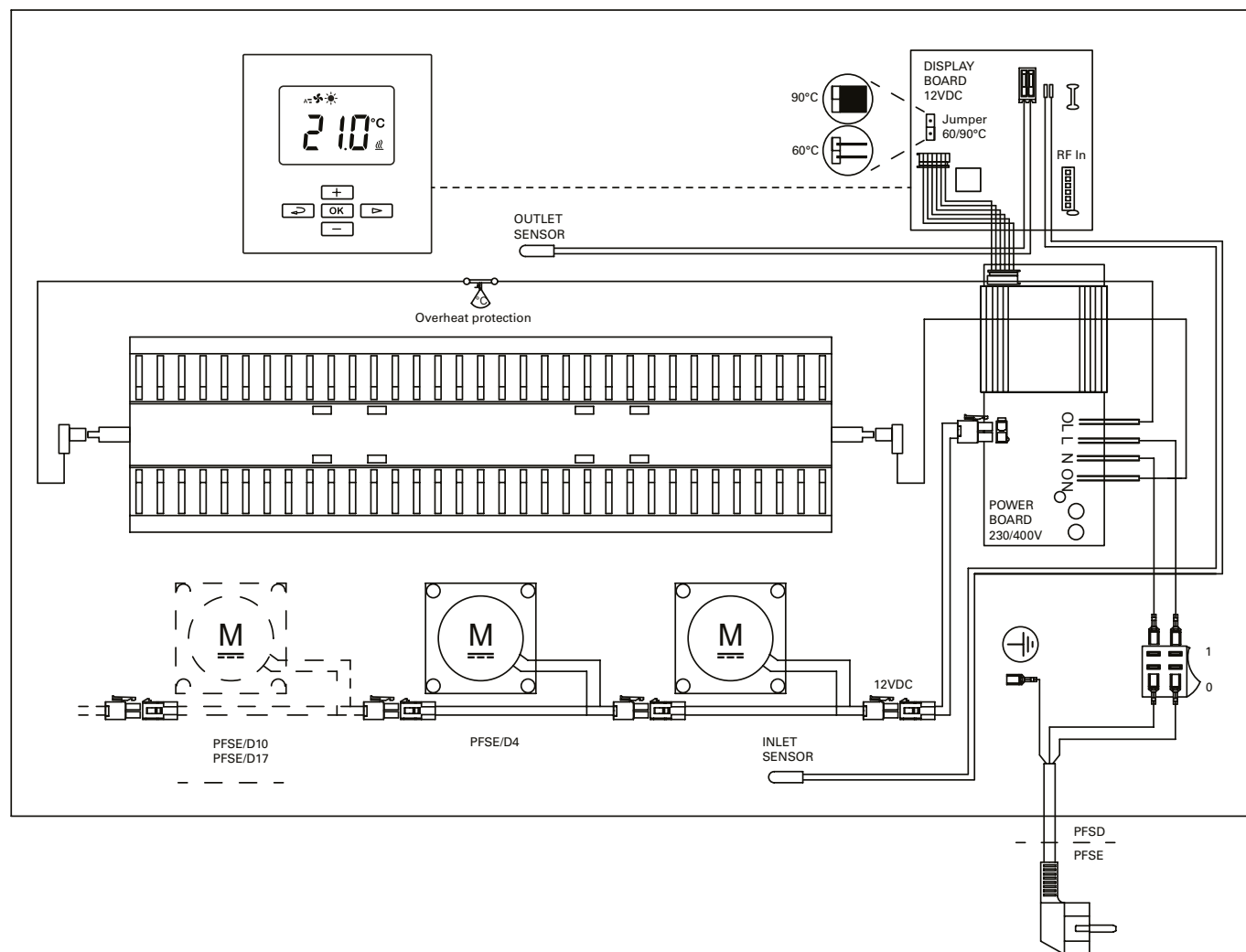
⚡ Electrical heat 400V2~ PFSD

Type	Output [W]	Airflow [m³/h]	Sound level* [dB(A)]	Voltage [V]	Amperage [A]	Output Motor (12V) [W]	LxHxD [mm]	Weight [kg]
PFSD4	400	40/60	26,5/37	400V2~	1,0	1,2	450x325x105	4,1
PFSD10	1000	60/100	28/38,5	400V2~	2,5	1,8	660x325x105	5,8
PFSD17	1750	100/150	29/40,5	400V2~	4,4	3,0	940x325x105	8,1

*) Conditions: Distance to the unit 2 metres. Directional factor: 2. Equivalent absorption area: 12,75 m². At lowest/highest airflow.

Protection class: IP24.
CE compliant.

PFSE / PFSD



Installation and operating instructions

General Instructions

Read these instructions carefully prior to installation and use. Keep this manual for future reference.

The product may only be used as set out in the assembly and operating instructions. The guarantee is only valid should the product be used in the manner intended and in accordance with the instructions.

Application

With its smart functions and streamlined design, the PF Smart fan convector is the perfect choice for fast and efficient heating. The PF Smart is suitable for most environments including offices and homes. It is ideal for installation in premises that are used rarely, such as weekend cottages and assembly halls where rapid heating is desirable. In addition, the PF Smart can be remotely controlled so that the premises is warm by the time you arrive.

Protection class: IP24.

Approvals

- When the maximum surface temperature is set to 60 °C, PFS is suitable for use in preschools, afterschool recreation centres and toilet and bathroom facilities.
- The convector is approved for installation in wet rooms provided that no control devices (buttons, switches, etc.) are within reach of persons in baths or showers. Convectors for portable use must not be used close to pools, bathtubs or showers.

Protection class: IP24.

Mounting

Fan convector PFS is mounted on the wall with the included wall bracket. The convector must not be placed immediately under a fixed socket. For minimum dimensions with permanent installation, see fig. 2. PFSE can also be used as a portable unit, floor stand is available as an accessory.

Mounting with wall bracket

1. Mount the wall bracket stable on the wall with screws in the oval holes (at least 2x). It is important that the wall bracket is

aligned to a straight horizontal position. Guide holes on the wall bracket can be used to mark out where the bracket should be positioned to end up 10 cm above the floor. Fig. 3.

2. Hang the fan convector on the wall bracket.
3. Rotate the lock plate (Fig. 4) and fasten with a screw in the wall, so that the fan convector is mounted securely.

Mounting when a connection box is to be used

To enable the installation of a surface mounted connection box behind the fan convector, the wall bracket is bent in order to place the unit further from the wall. See Fig. 5 and 6.

1. Bend the wall bracket acc. to Fig 6. The holes in the bent-down part are used to fasten the wall bracket to the wall.
2. Follow steps 1-3 in section "Mounting with wall bracket".

Portable use

PFSE can also be used as a portable unit. Floor stand PFSS is available as an accessory. Fig. 7.

1. Mount the floor stand with the included screws.
2. Hang the fan convector on the floor stand. The lock plate is not used and should be removed.
3. Fasten the stand to the unit with screws included, in intended holes, PFSE4 1x, PFSE10/17 2x.

Connection

PFSE is equipped with a 1.2 metre long cord with plug for connection to an earthed power socket (230V~). PFSD is intended for permanent installation and is connected via cable without plug.

The installation, which should be preceded by an isolator switch with a contact separation of at least 3 mm, should only be wired by a competent electrician and in accordance with the latest edition of IEE wiring regulations.

Fan convector PFS is switched on with the switch placed low on the right plastic end.

See wiring diagrams.

Switching surface temperature 60 / 90 °C

On delivery, max. surface temperature is set to 90 °C. To select the lower surface temperature - max 60 °C, remove the jumper on the circuit board placed below the display inside the convector.

1. Disconnect the power supply.
2. The front is opened by removing the screws on the plastic ends (2x), pull the front at the bottom and then lift it up. (Fig. 8)
3. Remove the jumper. Fig. 9.
4. Reinstall the front.

A surface temperature of 60 °C can at some conditions result in a power reduction, to keep the temperature low.

Start-up (E)

When the unit is used for the first time or after a long period of non-use, smoke or an odour may result from dust or dirt which has collected on the element. This is completely normal and disappears after a short time.

Service, repairs and maintenance

For all service, repair and maintenance first carry out the following:

1. Disconnect the power supply.
2. The front is opened by removing the screws on the plastic ends (2x), pull the front at the bottom and then lift it up. (Fig. 8)
3. Reinstall the front.

Maintenance

In all electrical heating appliances, small clicks can occur due to movement when the material expands and contracts with changes in temperature.

Since fan motors and other components are maintenance free, no maintenance other than cleaning is necessary. The level of cleaning can vary depending on local conditions. Undertake cleaning at least twice a year. Inlet and exhaust grilles, fans and elements can be vacuum cleaned or wiped using a damp cloth. Use a brush when vacuuming to prevent damaging sensitive parts. Avoid the use of strong alkaline or acidic cleaning agents.

Overheat protection

The fan convector is equipped with overheat protection. The overheat protection resets by

turning off the unit during 10 minutes.

Replacing the fan motor

1. Disconnect the power supply.
2. The front is opened by removing the screws on the plastic ends (2x), pull the front at the bottom and then lift it up. (Fig. 8)
3. Disconnect the cables to the motor.
4. Remove the screws securing the motor and lift it out.
5. Install the new motor as above in reverse order.
6. Reinstall the front.

Packaging

Packaging materials are chosen with consideration to the environment and are therefore recyclable.

Handling of product at end of working life

This product may contain substances necessary for the functionality of the product but potentially dangerous for the environment. The product should not be disposed of mixed with general household waste but delivered to a designated collection point for environmental recycling. Please contact the local authority for further details of your nearest designated collection point.

Safety

- *For all installations of electrically heated products a residual current circuit breaker 300 mA for fire protection should be used.*
- *Keep the areas around the air intake and exhaust grilles free from possible obstructions!*
- *The unit must not be fully or partially covered as overheating can result in a fire risk!*
- *This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.*

- Children of less than 3 years should be kept away unless continuously supervised.
- Children aged from 3 years and less than 8 years shall only switch on/off the appliance provided that it has been placed or installed in its intended normal operating position and they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.

- Children aged from 3 years and less than 8 years shall not plug in, regulate and clean the appliance or perform user maintenance.

CAUTION — Some parts of this product can become very hot and cause burns. Particular attention has to be given where children and vulnerable people are present.

Control

- This product is considered a local space heater according to Ecodesign Regulation (EU) 2015/1188 and is equipped with smart control which among others includes :
- Electronic room temperature control plus week timer
- Room temperature control with open window detection
- Adaptive start control

The fan convector has a digital display on which all settings are made and can also be remotely controlled via an app (iOS, Android) or web browser.

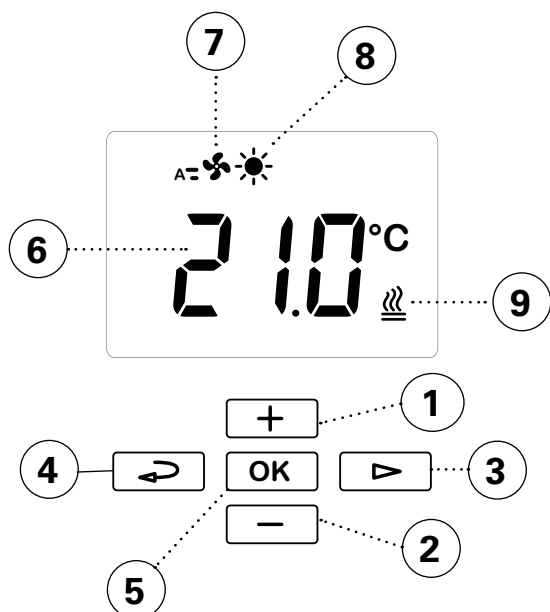
PF Smart App

PF Smart can also be remotely controlled via an app (iOS, Android) or web browser. Requires an RF module per fan convector, hub and wireless Internet connection. See accessories in the introduction pages and separate manual.



Start up

Home screen and keypad



Keypad

- 1 Increase / up
- 2 Decrease / down
- 3 User menu / browse / proceed
- 4 Return
- 5 Confirm / select

Display

- 6 Desired room temperature (set point)
- 7 Fan mode Auto active
- 8 Temperature mode Comfort active
- 9 Heat on

When the screen is inactive, it can be activated by pressing any key.






PF Smart is supplied with default settings. The temperature is easily changed by pressing + or -. PF Smart can also be adapted to individual requirements, see the following pages.

Default settings

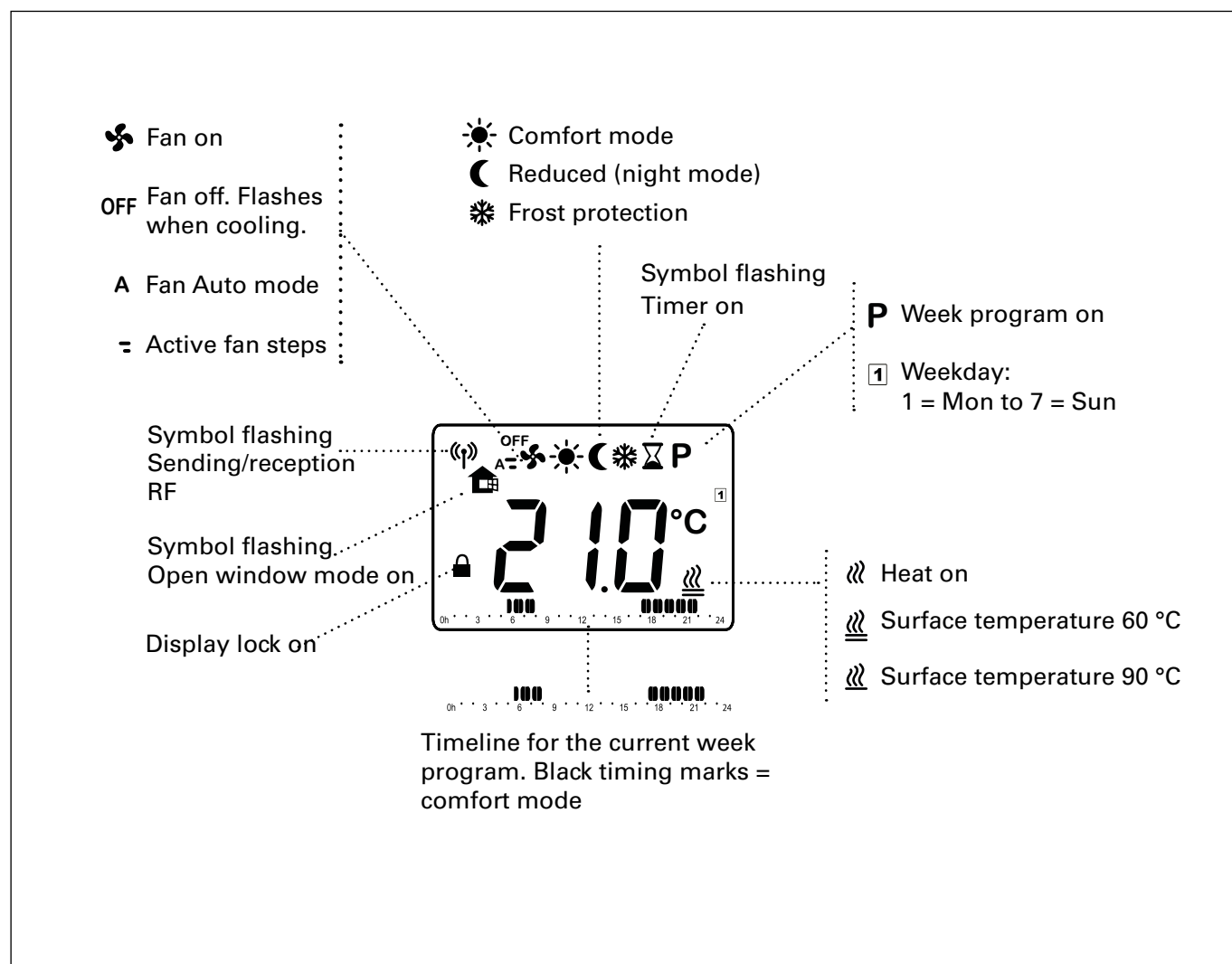
Set point	21 °C
Fan mode	Auto
Temperature mode	Comfort

At the first start-up or after a longer power failure, the time needs to be set. If a week program is not to be used and the time does not need to be set, this can be overridden by pressing the OK button repeatedly until the home screen appears.

Quick commands

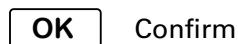
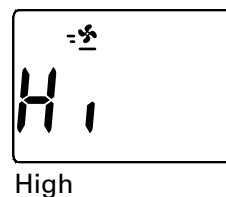
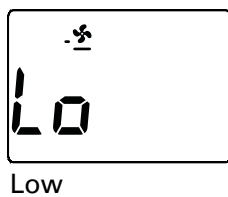
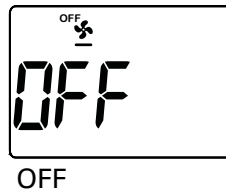
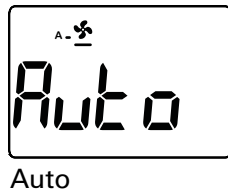
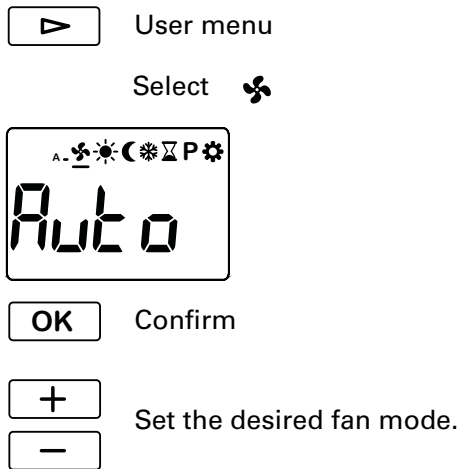
Press and hold	Quick command
 + 	Display lock on/off
	Show time and weekday
 + 	Current room temperature (actual value)

Display symbols



Fan mode

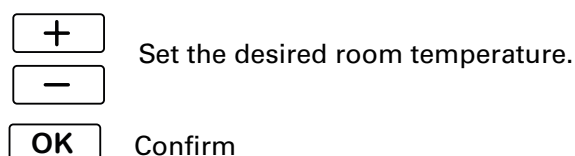
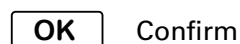
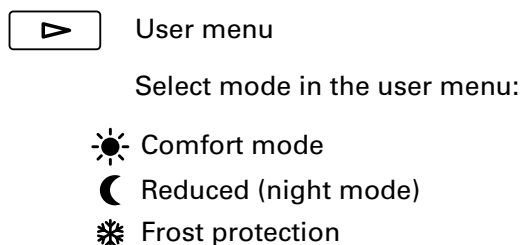
The fan speed can be set to suit any requirements. Modes: Auto/Low/High/Off.



Fan mode	Functions
Auto	The fan runs at low speed except: - when the room temperature is more than 2 °C below the set point, then the fan speed increases to high speed for a shorter heating time. - if it is too hot in the the unit
OFF	The fan is off. When Off is selected, the fan first runs during a cooling period until the right temperature is reached before it stops. To prevent excessive internal temperature, the internal sensor may reduce the power.
Low	Low speed. To prevent excessive internal temperature, the internal sensor may reduce the power.
High	High speed

Temperature mode

It is possible to choose between three modes - comfort, reduced mode (night mode) or frost protection. Settings for Comfort mode and Reduced mode are also applied in the week program when used.



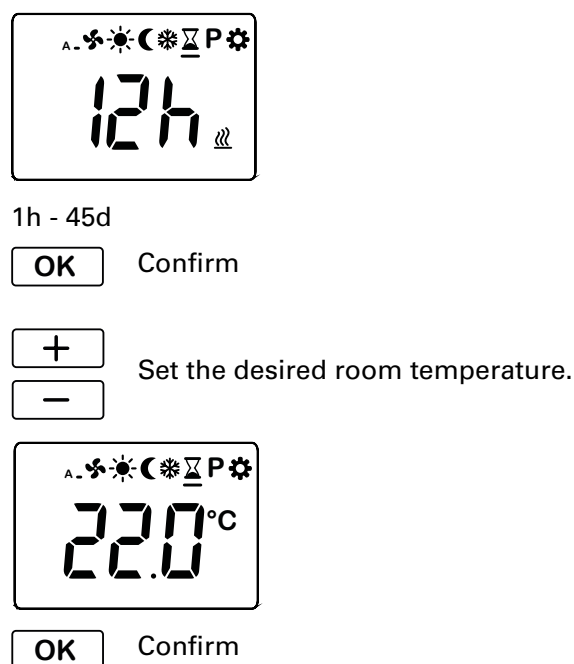
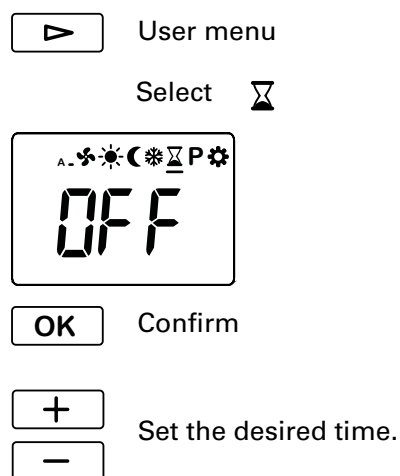
Default settings

Temperature mode	Set point	Fan mode
Comfort mode	21 °C	
Reduced (night mode)	18 °C	
Frost protection	10 °C	High (locked)

See section Fan modes to set the desired fan mode. For temperature mode Frost protection, the fan mode is locked to High (for maximum heat distribution).

Timer

The set temperature can be changed for a limited time with the timer (1 hour to 45 days). The fan runs on the set value.



While the timer is running, its symbol flashes and the display alternately shows the remaining time and the set temperature.

When time is up the unit returns to previous settings.

Week program

PFS has nine preset week programs (P1 to P9) and the possibility to add four (U1-U4).

The function ITCS (default) makes the control learn when it needs to start in order to reach a certain desired temperature at a specific time in the environment it is used. It can be disabled, see Settings.

Preset programs

Program	Description	Comfort mode	
P1	Residence	Mon-Fri: 05:30 - 08 17 - 22	Sat-Sun: 07 - 23
P2	Residence, late	Mon-Fri: 06:30 - 10 19 - 23:30	Sat-Sun: 07:30 - 23:30
P3	Residence, short	Mon-Fri: 06 - 09 16 - 23	Sat-Sun: 07 - 23
P4	Residence, day only	Mon-Sun: 06 - 22	
P5	Weekend	Fri: 17 - 23	Sat-Sun: 07 - 23
P6	Office	Mon-Fri: 06 - 18	
P7	Office, late	Mon-Fri: 09 - 21	
P8	Shop, late	Mon-Fri: 09 - 22	Sat-Sun: 09 - 20
P9	Shop	Mon-Fri: 09 - 18	Sat-Sun: 09 - 14

*) Other times: Reduced (night mode)

Read more on the following pages.


Setting week programs

 User menu

Select **P**




P1 or the recently used program is shown.


 Confirm

Selecting a preset program P1 - P9

 Select P1-P9.




 Switch between days of the week with the arrow to view times for the selected program. 1 = Mon to 7 = Sun. The times when Comfort mode is active can be seen in the lower part of the display of the selected weekday.

 Confirm with ok to start the program.


Setting your own week program U1-U4

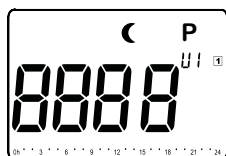
 Select U1-U4.



 Press and hold OK for 2 s. to confirm.

Monday **1**


 Select if you want to begin the setting for Reduced mode or Comfort mode.




Reduced (night mode)





Comfort mode

 Confirm

 Select the start time for the selected mode (Reduced/Comfort).




 Confirm

 Select between Reduced mode or Comfort mode for following time.



 Confirm


 Select the start time for the selected mode (Reduced/Comfort).




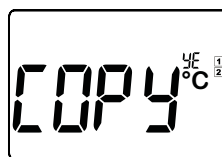
 Confirm

These steps can be repeated until a full program is set. When the program is finished, proceed to the next day.

Following days, Tue - Sun **2 3 4 5 6 7**

 Proceed to the next day.

 Select copy (COPY) to copy the previous day's settings or no (no).



Yes to copy




No to copy


 Confirm

If no (no) is selected, settings are made in the same way as for Monday 1.

When all 7 days are completed, save (SAVE) can be selected.

 Select yes to save (YE) or no (no).




 Confirm with ok to start the program.

Settings



User menu

Select 

Confirm



Browse the menu options.



Confirm

Power failure

Note! A power loss longer than 12 hours may require an adjustment of time and date. The week program is affected if the clock is not correctly set.

Menu options	Functions	Default settings	Description
Time (01)	For week program. Time and date.	Must be set if the week program is to be used.	Set the following: - hour (24 h) - minute - weekday: mon=1, sun=7 - day/month - year Increase/decrease with +/-. Confirm every step with OK.
dst (02)	For week program. Daylight saving/summer time and winter time.	On (on)	Switch between on (on) and off (OFF) with +/-. Confirm with OK.
Fr t (03)	For week program. No fan (fan off) in reduced mode.	OFF (off)	Switch between on (on) and off (OFF) with +/-. Confirm with OK.
In t (04)	Read internal temperature.	-	Press OK to return to the menu.
ItcS (05)	For week program. The control learns when it needs to start in order to reach a certain desired temperature at a specific time in the environment it is used.	On (on)	Switch between on (on) and off (OFF) with +/-. Confirm with OK.
rF (06)	For PF Smart App. Linking the RF module to the control.	-	See separate manual for PF Smart App.
oPn (07)	Open window mode to save energy. If the temperature drops more than 3 °C in one minute, the control enters frost protection mode for 15 minutes (see Temperature mode). Unless the temperature drops further, the control returns to previous settings after 15 minutes.	On (on)	Switch between on (on) and off (OFF) with +/-. Confirm with OK.
clr (08)	Factory reset. Resets values to factory settings.	-	Switch between no (no) and yes (YES) with +/-. To factory reset, choose yes by pressing OK about 4 seconds (countdown).
uEe (09)	Read version number.	-	Press OK to return to the menu.

Troubleshooting

Symptom	Cause	Action
The fan symbol is flashing. No heat and the fan runs at maximum speed.	The internal temperature has exceeded the upper limit, even though the heat is off. The fans automatically run at the highest speed and the heat is blocked until the internal temperature is below the limit, and then return to the previous settings.	<ul style="list-style-type: none"> • Check that the air flow is not blocked at the intake grille or outlet grille. • Clean the inside of the unit. • Check that the internal sensor (at the outlet grille) are placed correctly.
The text "Heat OFF" appears. No heat.	The control considers that no heat is emitted from the heating element. (The temperature difference between the room sensors and internal sensors is less than 5 °C after 90 sec.)	<ul style="list-style-type: none"> • Check that the air flow is not blocked at the intake grille or outlet grille. • Disconnect the power for at least 10 minutes in order to reset the overheat protection. • Reconnect power and cancel the alarm by pressing the OK button for 3 seconds.
The text "Sens Out" flashes in the display and there is no heat.	The upper sensor is defective or is detached from its fastening.	Contact Frico for support.
The text "Sens In" flashes in the display and there is no heat.	The lower sensor is defective or is detached from its fastening.	Contact Frico for support.
The fan convector emits heat, but it becomes progressively more difficult to achieve the desired room temperature, even though the settings are unchanged.	The internal temperature reaches its limit value faster, which limits the heat emission.	<ul style="list-style-type: none"> • Check that the air flow is not blocked at the intake grille or outlet grille. • Clean the inside of the unit. • Check that all motors operate correctly.
All the fans are inactive.	The fan speed is set to OFF.	Switch fan mode to Auto.
	The function with fans off at reduced mode (FRT) is active.	Put FRT function to OFF in Settings.
	The quick plug for the first motor is detached.	Check the fan motor connections.

If the problems continue, please contact Frico for support.



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