FRICO

Original instructions

Thermowarm TWS
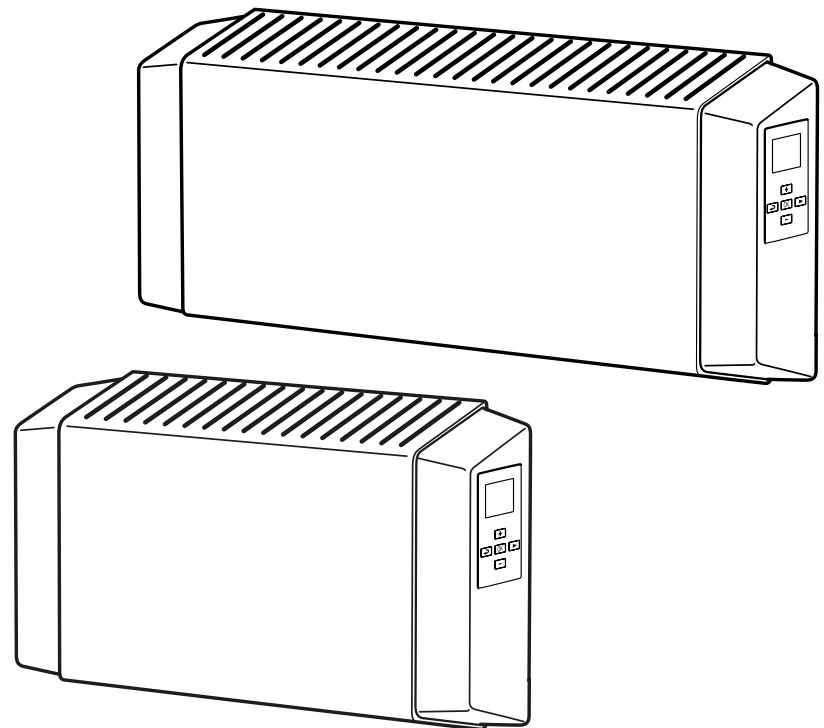
TWS

333 / 453 / 753

242 / 362 / 662

47

123

208

150

FRICO

Fig. 1

min 50

min 100

min 300

min 70

Fig. 2: Minimum distances

on/off

Overheat protection
reset

Accessories

TWSL

TWSL12	TWS100/200
TWSL3	TWSC

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Get In Touch

📞 **Call:** 0845 6880112
✉ **Email:** info@adremit.co.uk

Our Address

Puravent, Adremit Limited, Unit 5a, Commercial Yard,
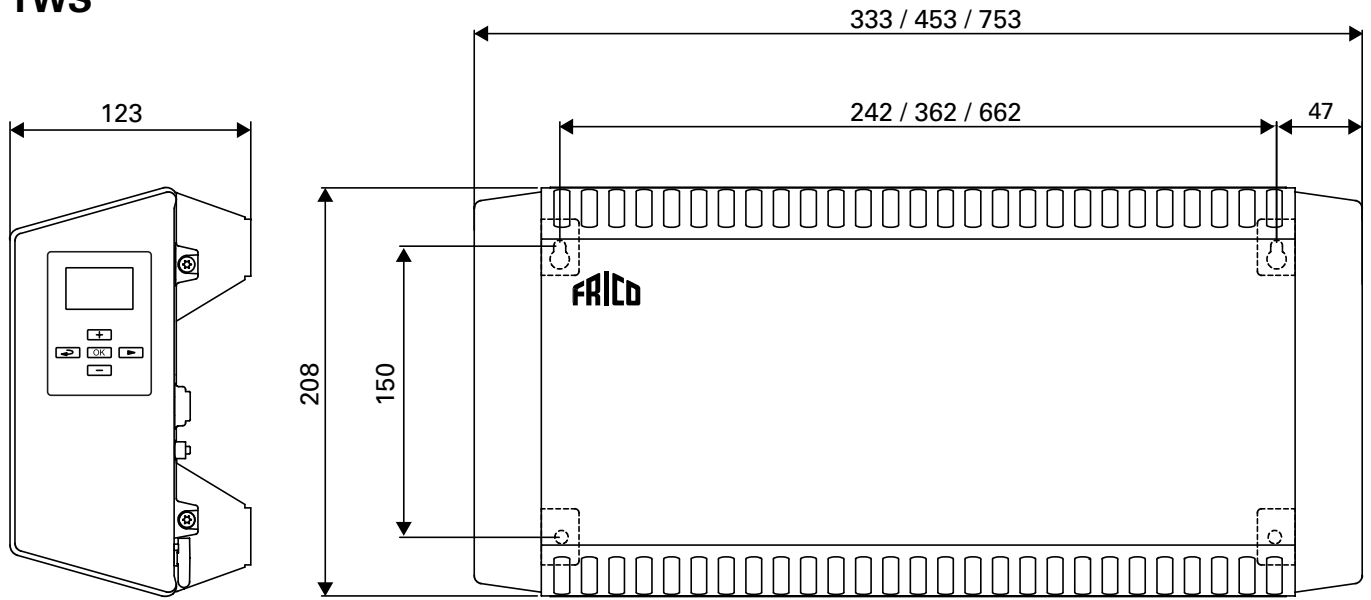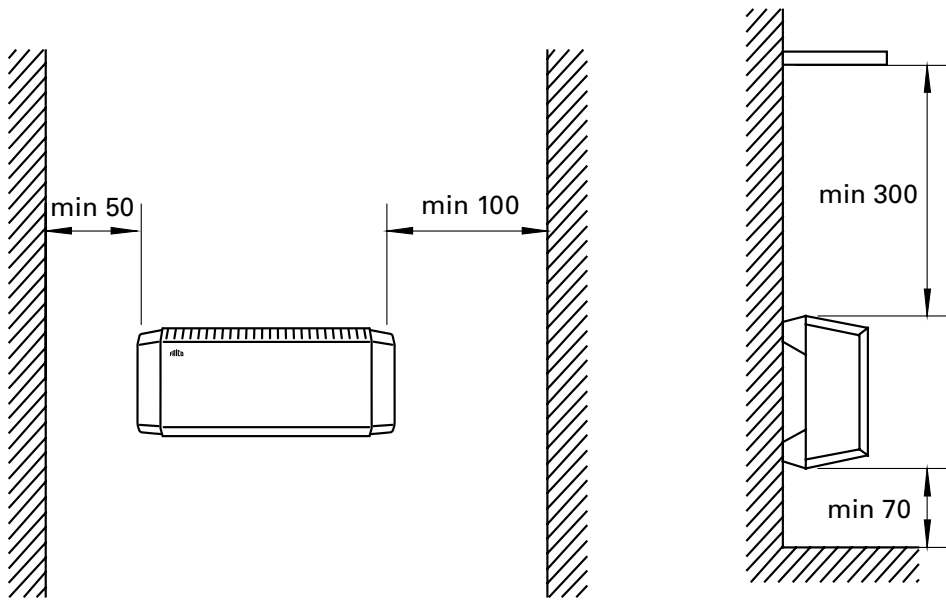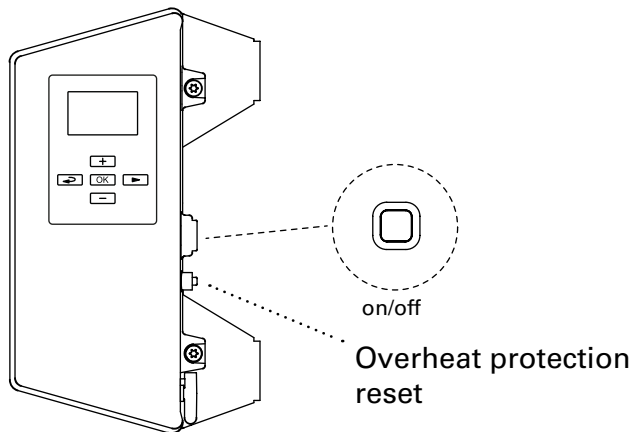Settle, North Yorkshire, BD24 9RH

Puravent

Thermowarm TWS100. (IP44)

Type	Output [W]	Voltage [V]	Weight [kg]
TWSE103	300	230V~	1,7
TWSE105	500	230V~	2,2
TWSE110	1000	230V~	3,2
TWSD110	1000	400V~	3,2

Thermowarm TWS200. (IP44)

Type	Output [W]	Voltage [V]	Weight [kg]
TWSE205	500	230V~	2,2
TWSE210	1000	230V~	3,2
TWSD210	1000	400V~	3,2

Thermowarm TWSC. (IP54)

Type	Output [W]	Voltage [V]	Weight [kg]
TWSC303	300	230V~	1,7
TWSC305	500	230V~	2,2
TWSC310	1000	230V~	3,2
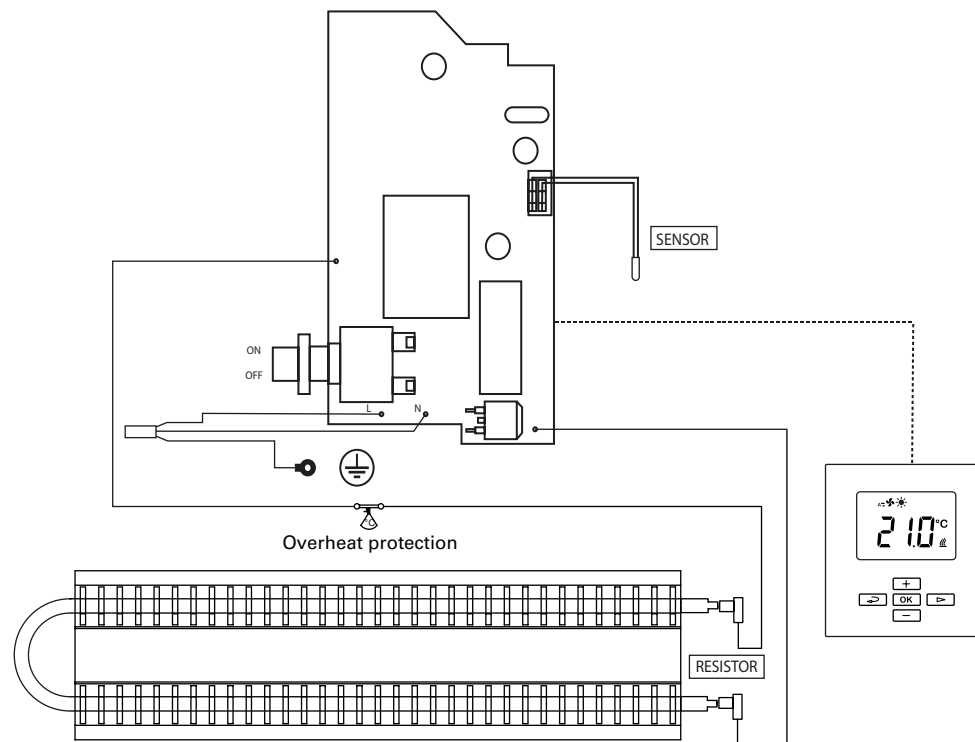
C E

TWS

ON
OFF

L   N

Overheat protection

SENSOR

RESISTOR

21.0℃

3

Installation and operating instructions

General Instructions

Read these instructions carefully before 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 if the product is used in the manner intended and in accordance with the instructions.

Application

Thermowarm TWS is a series of robust convectors with smart control designed for industrial and public buildings, such as changing rooms, stores and toilets. TWSC can also be used in corrosive and aggressive environments. TWS200 has a surface temperature as low as 60°C, which makes it ideal for daycare centres and bathrooms. Enclosure class: IP44 (TWSC: IP54).

Mounting

The appliance is supplied with a pre-installed wall bracket for attaching horizontally to the wall using four screws. The top two holes are "keyholes". See the dimensions on the introductory pages. For minimum distance, see diagrams on introductory pages.

Connection

TWS is fitted with a 0.6 metre long cord without plug and is connected to a junction box. The convector is designed for fixed installation.

The installation, which should be preceded by an omnipolar 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. Thermowarm TWS is switched on using a push-button at the rear of the right-hand plastic side. See wiring diagrams.

Replacement of cable

If the cable is damaged the unit must be sent to Frico for replacement. Contact Frico Technical Support.

Start-up

When the unit is used for the first time or after a long period of disuse, smoke or odour may result from dust or dirt that 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 appliance can be demounted and opened by four screws at the rear.
3. Reinstall.

Maintenance

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

As the components are maintenance-free, no maintenance other than cleaning is necessary. The frequency of cleaning can vary depending on local conditions, although it should be at least twice a year. Grilles and elements can be vacuum cleaned or wiped using a damp cloth. Use a brush when vacuuming to prevent damaging sensitive parts.

TWS200: The surface can be washed using a mild soap solution or carpet foam.

Avoid strong solvents such as acetone or similar, as well as alkaline or acidic detergents. The plastic end covers must not be exposed to oily substances.

Overheat protection

The convector is fitted with overheat protection. The overheat protection is reset by pressing the button located under a threaded cover at the side of the heater. See the introduction pages.

Packaging

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

Handling of product at end of working life

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

Safety

- *For all installations of electrically heated products should a residual current circuit breaker 300 mA for fire protection 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 :
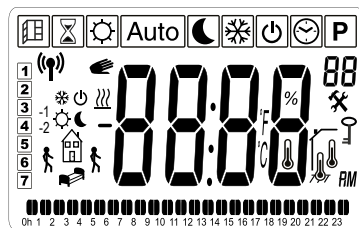- Electronic room temperature control plus week timer
- Room temperature control with open window detection
- Adaptive start control

The TWS convector has a digital display where all settings are made. The protective display cover is available as an option.
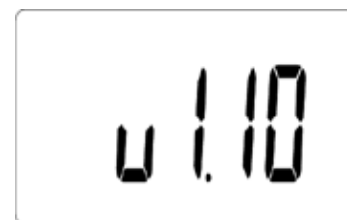
Start up

Home screen and keypad

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

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

When starting up for the first time or after an extended power failure, a test sequence is run first, after which all the symbols are displayed on the screen.

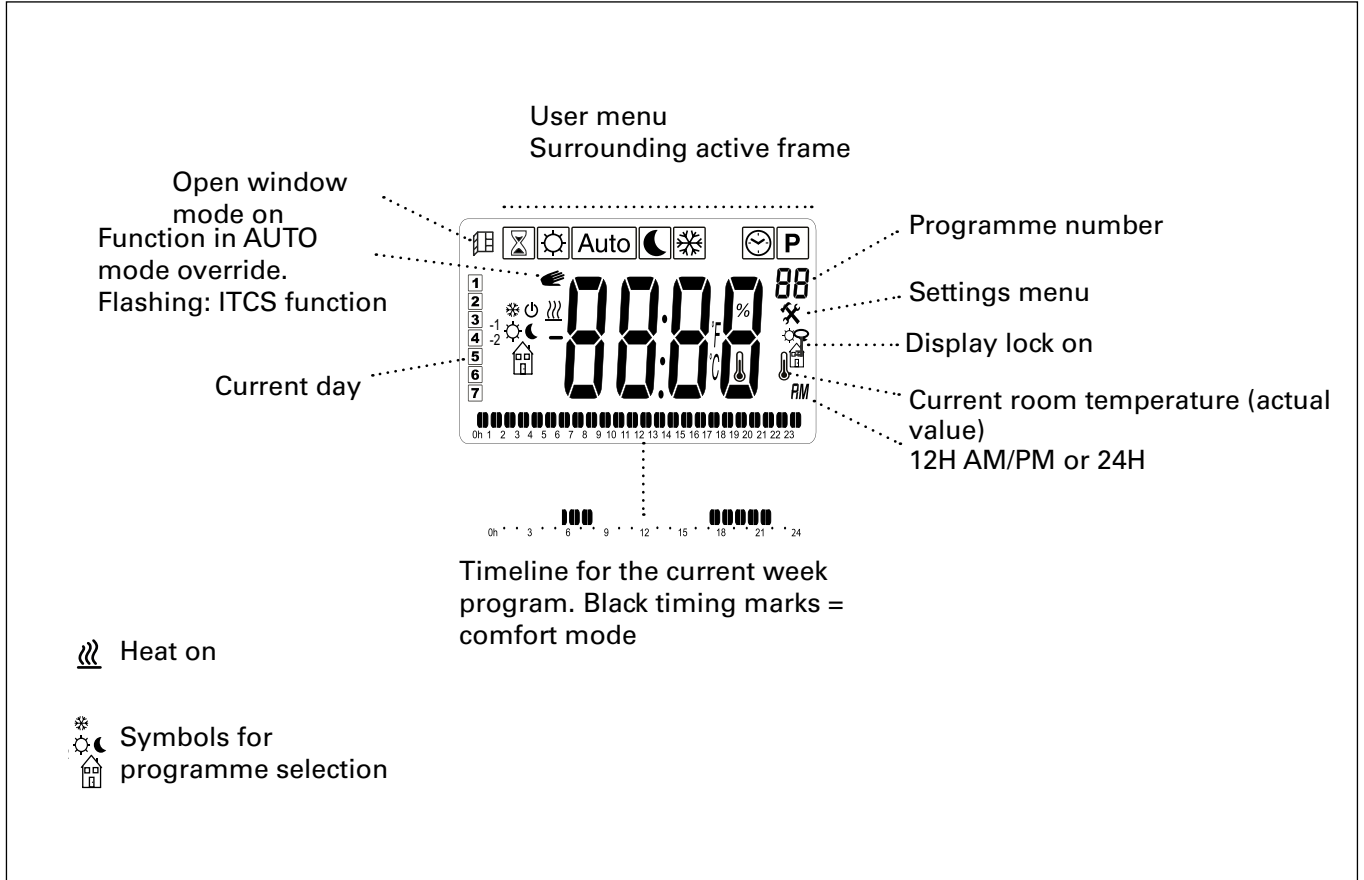Beyond this, another screen is displayed showing the software version.

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.

u1.10

Quick commands

Press and hold	Quick command
↵ + ▷	Display lock on/off

Display symbols

User menu
Surrounding active frame

Open window
mode on
Function in AUTO
mode override.
Flashing: ITCS function

Programme number

Settings menu

Display lock on

Current day

Current room temperature (actual value)

12H AM/PM or 24H

Timeline for the current week program. Black timing marks = comfort mode

〰 Heat on

❄☀☾
🏠 Symbols for programme selection

Operating modes

It is possible to choose between four modes – comfort, reduced mode (night mode), automatic 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	Range
Comfort mode	21 °C	5 - 30 °C
Reduced (night mode)	18 °C	5 - 30 °C
Frost protection	See the Settings menu.	

▷ User menu

Select mode in the user menu:

☼ Comfort mode

☾ Reduced (night mode)

Auto Automatic mode – weekly programme

❄ Frost protection

OK Confirm

+ / − Set the desired room temperature – set point value (not for Auto).

OK Confirm

For setting automatic mode – weekly programme, see the section Weekly programme.

Quick commands

Press		Quick command
OK	☼☾❄	Switch between current room display temperature (actual value) and set point value.
	Auto	Switch between display time, current room temperature (actual value) and set point value.

Set time and date

For week program. Time and date.

▷ User menu

Select ☉

OK Confirm

Set the following:
- hour (24 h)
- minute
- weekday: Mon=1, Sun=7
- day/month
- year
Increase/decrease using +/-.
Confirm each step with OK.

Display energy consumption

Potential to display energy consumption (kW) for the past 24 hours / 7 days / 30 days. This menu is only displayed when the heat output is set (see Settings menu).

▷ User menu

Select ☼☾🏠

OK Confirm

+ / − Switch between viewing consumption at the various time intervals.

Timer

The set point value can be changed for a limited period using the timer (15 minutes to 44 days).

▷	User menu

Select ⧖

OK	Confirm

+	Set the desired time.
−	

12H

15 minutes - 44 days (' minute, h hour, d day)

OK	Confirm

+	Set the desired room temperature.
−	

24.0c

OK	Confirm

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.

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Week program
There are nine preset weekly programmes (P1-P9) and the potential to add an additional 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. This function can be deactivated (see Settings menu).

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**
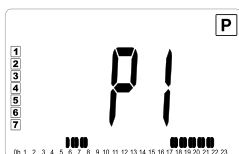
P1 or the recently used program is shown.

OK	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.

OK	Confirm with ok to start the program.

Setting your own week program U1-U4

+ −	Select U1-U4.

OK	Press and hold OK for 2 s. to confirm.

Monday [1]

▷	Advance the time in 30-minute intervals.

+ −	Press + to activate comfort temperature at a given time interval. Press - or the forward arrow to select reduced temperature.

OK	When the entire day is complete, confirm with OK.

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

It is now possible to copy the previous day (COPY).

+ −	Select YES to copy the previous day's settings or select NO.

OK	Confirm

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

Once all 7 days are complete:

OK	Confirm with ok to start the program.

Temporarily override the weekly programme
It is easy to temporarily disregard the set point temperature according to the weekly programme.

+ −	Select the desired temporary set point temperature.

OK	Confirm

The temporary set point temperature applies until the next programme step, or for max. 2 hours.

The fact that the weekly programme is temporarily being overridden is indicated by a hand symbol in the display.

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.

Settings menu

| OK | Press and hold for 5 seconds. |

Home screen

| ▷ | Browse between the menu options. |
| OK | Confirm |

See the table on the next page regarding settings that can be made.

Calibration of temperature sensor
This is done in the Settings menu.

OK	Press and hold for 5 seconds.
▷	Browse to Calibration of temperature sensor (5).
OK	Confirm

The first screen displays the measured temperature. Press "OK" to view the offset value. If "no" is displayed, the offset value is zero and sensor calibration has not been performed.

When calibration of the sensor is to be performed, the set point value must have been constant for at least 24 hours.

1. Measure the temperature in the room using a thermometer at the same height above the floor as the convector.
2. Enter this value in Settings menu / Calibration of temperature sensor (5) with +/-. Confirm with "OK".

Trouble shooting

Symptom	Cause	Action
"Err" and this symbol flashes:	External sensor is defective or has come loose.	Contact Frico for support.
"Err" and this symbol flashes:	Internal sensor is defective or has come loose.	Contact Frico for support.

Menu options	Functions	Default settings	Description
ProG (01)	If "no" is selected, a simplified user menu appears where it is only possible to select between two operating modes: comfort mode and reduced mode.	YES (activated function)	Switch between YES and no using +/-. Confirm with OK.
dEG (02)	Change temperature unit.	°C	Switch between °C and °F using +/-. Confirm with OK.
24H (03)	For week program. Set the time format.	24H	Switch between 24H (24:00) and 12H (12:00 AM/PM) using +/-. Confirm with OK.
dSt (04)	For week program. Daylight saving/summer time and winter time.	YES (activated function)	Switch between YES and no using +/-. Confirm with OK.
(05)	Calibration of temperature sensor	no (no offset)	See previous page.
AF (06)	Set point value for frost protection.	10 °C	Set the desired value between 5-10°C using +/-. Confirm with OK.
ItcS (07)	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.	YES (activated function)	Switch between YES and no using +/-. Confirm with OK.
Win (08)	Open window mode to save energy. Should the temperature drop by more than 3°C in 6 minutes, the control enters frost protection mode for 15 minutes (see Temperature mode). To stop Open window mode, press "OK". Unless the temperature drops further, the control returns to previous settings after 15 minutes.	YES (activated function)	Switch between YES and no using +/-. Confirm with OK.
Pow (09)	Heat output. Must be set in order to enable energy consumption to be displayed.	no (menu not displayed)	Switch between no and 1000/500/300 W using +/-. Confirm with OK.
Chil (10)	Child protection. Set the desired output to 0-100% of full output.	no (100%)	Switch between no/100% output (no) and 75/50/25% using +/-. Confirm with OK.
CLr (11)	Factory reset. Resets values to factory settings.	-	To factory reset, choose yes by pressing OK about 4 seconds (countdown).
(12)	Software version	-	Press and hold for 5 seconds to see the version.
End (13)	Leave the Settings menu.	-	Confirm with OK.

Main office
Frico AB
Industrivägen 41
SE-433 61 Sävedalen
Sweden

Tel: +46 31 336 86 00

mailbox@frico.se
www.frico.net

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

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Get In Touch

Call: 0845 6880112
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Our Address

Puravent, Adremit Limited, Unit 5a, Commercial Yard, Settle, North Yorkshire, BD24 9RH