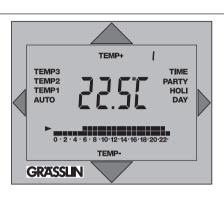


<u>GRÄSSLIN</u>



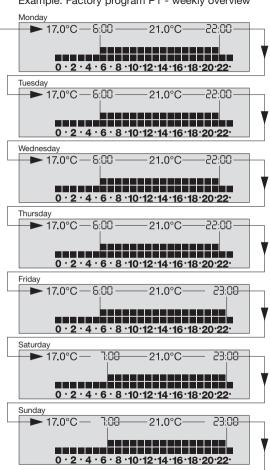
GB Operating instructions

famoso

1.	List of contents	2
2.	Brief description	3
2.1	Elementary operator control	4
3.	Installation	5
3.1	Connecting up	6
3.2	Fitting / replacing the batteries 7	- 8
4.	Setting the time / date	9
4.1	Setting summertime / wintertime	10
4.2	Interrogating the current time	11
5.	Temperature levels	12
5.1	Changing temperature levels	13
6	Overview of programmes and operating modes	14
6.1	Factory programme P1	15
6.2	Factory programme P2	16
6.3	Factory programme P3	17
6.4	Factory programme P4	18
6.5	Selecting factory programme P1 - P4	19
6.6	Selecting / reading the user-defined programme	20
6.6.1	Entering a user-defined programme 21 -	22
6.6.2	COPY function	23

6.7	AUTO mode	24	
6.8	TEMP 3 mode	25	
6.9	TEMP 2 mode	25	
6.10	TEMP 1 mode	25	
6.11	PARTY mode	26	
6.12	HOLIDAY mode	27	
7.	System settings	28	
7.1	Parameter settings	29	
7.2	Heating cycle - CDF value (cyclic duration factor)	30	
7.3	Heating cycle - setting the CDF value	31	
7.4	Elapsed-hour meter	32	
7.5	RESET	33	
7.6	Recalling the factory settings	34	
7.7	Electronic interlock	35	
7.8	Air-conditioning system	36	
8.	Technical data	37	
9.	Problems and remedies	38	
10.	Cleaning and maintenance	39	
11.	Service addresses	39	
12.	Alphabetical subject-index	40	
13.	Overview 41 -	42	
	Shaded grey area is designed for end-user instruction	n	

Example: Factory program P1 - weekly overview



2. Brief description

With its various programs and setting facilities, the famoso 2000 digital chronostat always ensures a comfortable room temperature.

The chronostat contains the following:

4 factory programmes

The factory programmes are oriented to the calendar week and have been adapted to suit different ways of life.

4 user-defined programmes

The 4 factory programmes can be edited to suit your specific requirements.

AUTOmatic mode

The chronostat operates in accordance with one of the four factory programmes or the user-defined programme in this mode.

3 continuous temperature modes

A single temperature is assigned to each of the continuous temperature modes. The programmed temperature is maintained until another mode is selected.

HOLIDAY mode

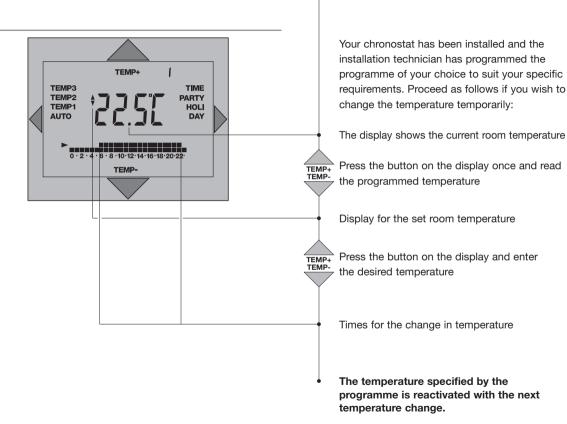
This mode remains active for the specified number of days and then returns to the previously selected programme.

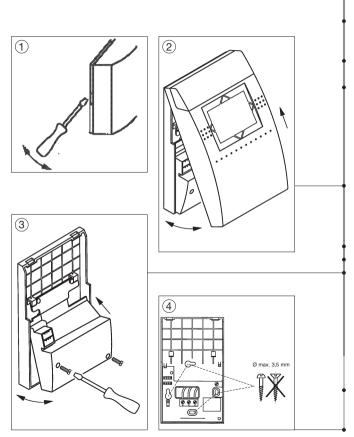
PARTY mode

Switches to temperature level 3 (factory setting: 21 °C) for a three-hour period.

The battery-powered chronostat can be removed from its stand and programmed easily on a table or from the comfort of an armchair. Simply replace the chronostat on its stand when you have finished programming (refer to Page 5).

When entering the time for a change in temperature, please remember that the heating system requires a certain amount of time to adjust the temperature to the set value.





The chronostat must be fitted / installed with an appropriate amount of care by a suitably qualified electrician / technician.

Switch the heating system off before commencing installation!

Refer to Page 28 for the system settings

Check and make sure that the connecting

Lift the chronostat off the stand ①

wires are not live.

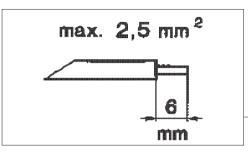
type box

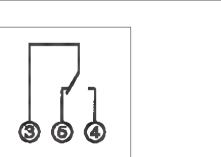
Undo the screws
Remove the protective housing
Be careful not to damage the clips

Guide the connecting leads through the cutouts in the stand

Mount the stand on a firm surface or a flush

firm surface or a flush





Strip the ends of the connecting wires carefully and connect up as shown on the circuit diagram

The chronostat **must** be fitted / installed with an appropriate amount of care by a suitably

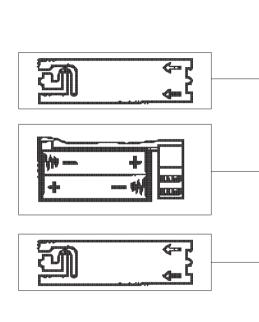
qualified electrician / technician.

Contacts 3 - 4 closed = heating / coolingmode

Replace the protective housing

Be careful not to damage the clips

Tighten the screws



Remove the retaining strap

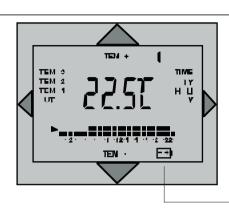
Lift the famoso 2000 chronostat off the stand

Insert the batteries
Battery type: LR 6 / AA (two)
(use only alkaline batteries)

Replace the retaining strap, inserting the spring-loaded side first

Replace the chronostat on its stand - it must latch into place.

Conduct a RESET after fitting the batteries (after fitting for the first time only).



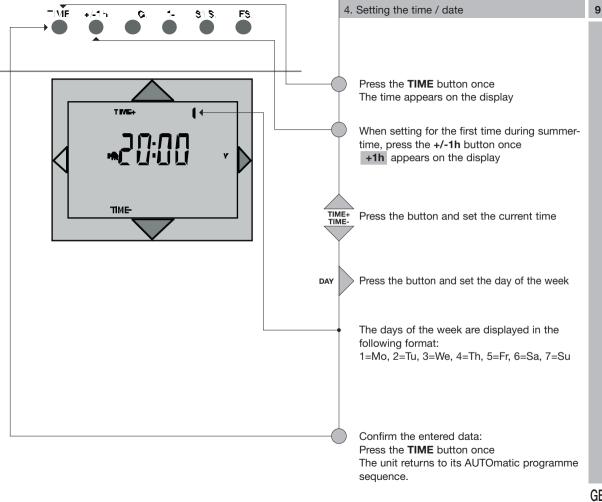
Appears on the display

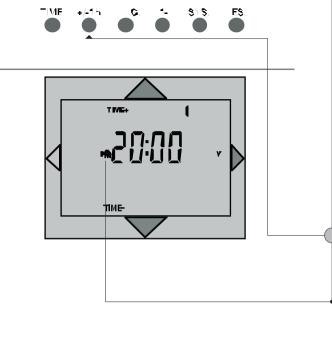
Replace the batteries as soon as possible or the chronostat may cease to work properly.

Data is stored for approx. 2 minutes when replacing the batteries

Refer to Page 7

Note: The unit measures the battery voltage when the heating / cooling system is switched on / off. The battery indicator will not change if the heating / cooling system is not switched on or off.



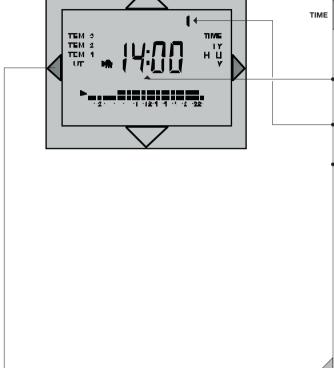


4.1 Setting summertime / wintertime

Press the **+/-1h** button and set summertime / wintertime

Displayed indicator (+1h displayed for summertime; no indicator appears on the display during wintertime (normal time)

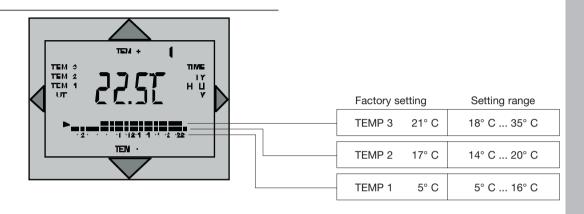
Please make sure that **+1h** is displayed during summertime.



AUTO Press the AUTO button

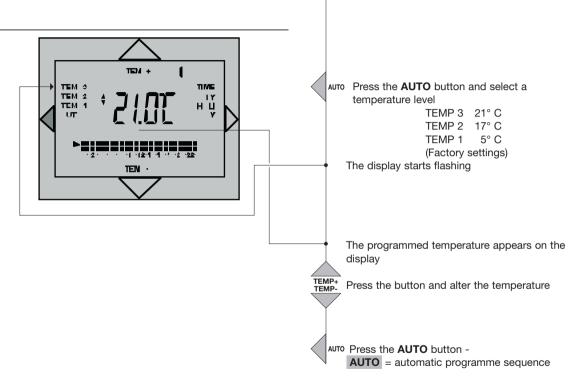
The units returns to its automatic programme sequence





Note:

The temperature measuring range is between 0°C ... 40°C. If the temperature is outside this range, --:-°C will appear on the display instead of a temperature value.



Note:

Program the temperatures so that TEMP 3 is always higher than TEMP 2 and TEMP 2 is always higher than TEMP 1.

5° C

Factory programmes P1 - P4

The factory programmes are oriented to the calendar week and have been adapted to suit different ways of life. They can be altered according to specific requirements.

4 user-defined programmes

The 4 factory programmes can be edited to suit your specific requirements.

6 operating modes:

AUTOmatic mode

The chronostat operates in accordance with one of the four factory programmes or the user-defined programme in this mode.

3 continuous temperature modes

A single temperature is assigned to each of the TEMP 3, TEMP 2 and TEMP 1 modes. The programmed temperature is maintained until another mode is selected or the unit is switched off.

PARTY mode

Switches to temperature level 3 (factory setting: 21°C) for a three-hour period.

HOLIDAY mode

This mode remains active for the specified number of days and then returns to the previously selected programme.

+	Factory programme	P1	Page 15
•	Factory programme	P2	Page 16
•	Factory programme	Р3	Page 17
+	Factory programme	P4	Page 18
+	User-defined programme		Page 20

AUTO mode	Page 24
TEMP 3 mode	Page 25
TEMP 2 mode	Page 25
TEMP 1 mode	Page 25
PARTY mode	Page 26
HOLIDAY mode	Page 27

Factory program P1 is a **daytime and evening programme**, i.e. the programme has been designed in such a way that a constant, comfortable temperature prevails during the day and in the evening.

Changing the time and temperature: Example with factory settings for the temperature levels

TEMP 3 = 21° C

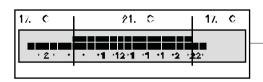
TEMP $2 = 17^{\circ} \text{ C}$

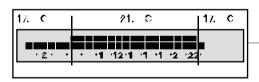
Monday to Thursday from 6:00 - 22:00 h TEMP 3 from 22:00 - 6:00 h* TEMP 2

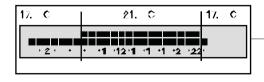
*(the following morning)

Friday from 6:00 - 23:00 h TEMP 3 from 23:00 - 6:00 h* TEMP 2 *(the following morning)

Saturday and Sunday from 7:00 - 23:00 h TEMP 3 from 23:00 - 7:00 h* TEMP 2 *(the following morning)







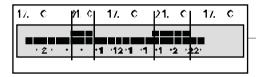
Factory programme P2 is a **full-time working day programme**, i.e. the programme has been designed in such a way that a constant, comfortable temperature prevails at breakfast-time, in the evening and all day at the weekend.

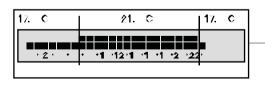
Changing the time and temperature:

Example with factory settings for the temperature levels

TEMP 3 = 21° C

TEMP 2 = 17° C





Monday to Friday from 6:00 - 9:00 h TEMP 3 from 9:00 - 17:00 h TEMP 2 from 17:00 - 22:00 h TEMP 3 from 22:00 - 6:00 h* TEMP 2

*(the following morning, 7:00 h on Saturday)

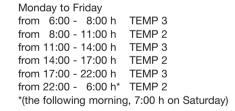
Saturday and Sunday from 7:00 - 23:00 h TEMP 3 from 23:00 - 7:00 h* TEMP 2 *(the following morning, 6:00 h on Monday)

Factory programme P3 is a working day programme, i.e. the programme has been designed in such a way that a constant, comfortable temperature prevails at breakfast-time, at lunchtime, in the evening and all day at the weekend.

Changing the time and temperature: Example with factory settings for the

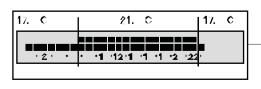
temperature levels TEMP 3 = 21° C

TEMP 2 = 17° C

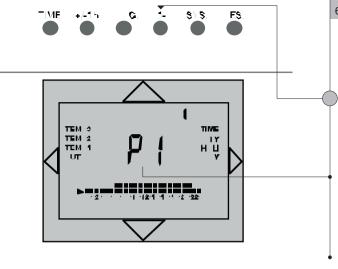


Saturday and Sunday from 7:00 - 23:00 h TEMP 3 from 23:00 - 7:00 h* TEMP 2 *(the following morning, 6:00 h on Monday)





Factory programme P4 is a weekend house programme, i.e. the programme has been designed in such a way that a constant, comfortable temperature prevails during the second half of the day on Friday and all day at the weekend. Changing the time and temperature: Example with factory settings for the temperature levels TEMP $3 = 21^{\circ}C$ 5 C TFMP $2 = 17^{\circ}C$ TFMP $1 = 5^{\circ}C$ 11 12 11 11 11 12 122 Monday to Thursday TEMP 1 24 hours a day 5 C C 121. C 17. C . 2 . 12 12 Friday from 12:00 - 18:00 h TEMP 2 from 18:00 - 23:00 h TEMP 3 17. C 21. C 17. C from 23:00 - 6:00 h* TEMP 2 *(the following morning) . 2 . * *1 *12*1 *1 *1 *2 *23 Saturday from 6:00 - 23:00 h TFMP 3 from 23:00 - 6:00 h* TEMP 2 21. C 17. C 5 C *(Sunday) Sunday from 6:00 - 23:00 h TFMP 3 from 23:00 - 12:00 h* TEMP 1 *(Friday)

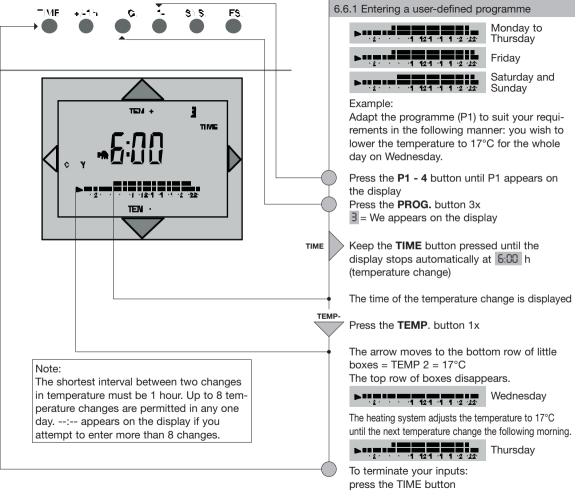


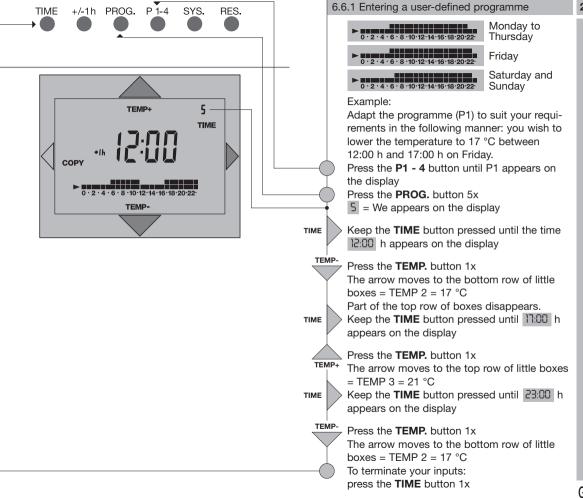
6. 5 Selecting factory programme P1 - P4

Press the **P 1 - 4** button
Select the factory programme of your choice

The selected factory programme appears on the display

The display returns to its original state automatically if no buttons are pressed for approx. 8 seconds





Example:

You have programmed day 1 If you wish to adopt the same daily programme for subsequent days, press the

copy button

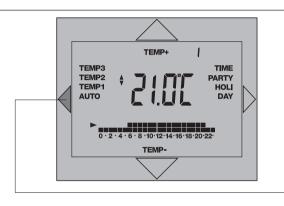
COPY day 1 to day 2 - COPY to day 3, etc.

The selected day appears on the display

Note:

Bear in mind that the last temperature programmed for the copied day continues to apply until a different temperature is programmed on one of the following days. Always check the entered programme day by day, as described in Page 20.

Press the **TIME** button
The unit returns to its automatic programme sequence.



The chronostat operates in accordance with one of the four factory programmes or the user-defined program in this mode.

AUTO Press the AUTO button

Display Selected mode **AUTO** flashes on the display

6.9 TEMP 2 mode

6.10 TEMP 1 mode

A single temperature is assigned to each of the continuous temperature modes. The programmed temperature is maintained until another mode is selected.

AUTO Press the **AUTO** button and select a temperature level TEMP3 21 °C
TEMP2 17 °C
TEMP1 5 °C
(Factory settings)

Display Selected mode
Example:
TEMP 3 flashes on the

display

Display Shows the set temperature Example:

21.0 °C

The current room temperature is displayed after approx. 8 seconds

If you wish to return to the automatic programme sequence:

аито press the **AUTO** button until **AUTO** starts flashing on the display

sequence

This mode remains active for the specified

number of days and then returns to the previously selected programme. HOLI DAY Press the **HOLIDAY** button **3x** TEMP+ HOLI DAY starts flashing on the display HOLI AUTO DAY The first day of the holiday period appears on the display TEMP-Example: HOLI DAY Press the **HOLIDAY** button 1x = 2 davs holidav TEMP+ TEMP-Press the ... button and select the temperature (not possible when OFF, refer to Page 28) Holiday mode continues running for the specified number of days To terminate HOLIDAY mode prematurely: аито press the AUTO button The unit returns to the automatic programme

The necessary settings must be specified on site when the system is put into operation for the first time.

You can use the system settings to adapt the chronostat to suit your specific requirements.

Refer to Page 29 for information concerning inputs (Parameter settings)

Factory settings

Heating or cooling mode

The set value for temperature 1 is active (factory setting 5 °C provides protection against freezing)

The system is switched off if TEMP 1 is active in AUTOmatic or continuous temperature mode. The same applies to HOLIDAY mode.

There is no protection against freezing.

Proportional control response

Simple control response (similar to that of a bimetal controller)

HEAT COOL TEMP 1 OFF PROP ON / OFF

To terminate programming: press the **TIME** button 1x

Recommended settings	Setting
Direct electric heating	1 or 2
Supplementary electric bathroom radiator	2 or 3
Single-room control system with electrically operated radiator valve (hot-water heating) Small to medium-sized rooms	3 or 4 s
Single-room control system with electrically operated radiator valve (hot-water heating) Medium to large rooms	4 or 5 s
Wall-mounted gas-fired boiler for single-storey heating systems	4 or 5
Free-standing gas-fired boiler or oil-fired boiler for larger living modules	4, 5 or 6

Setting	1	2	3	4	5	6
Cycle time 1 x ON - 1 x OFF in minutes	4	8,5	13	17	21	25,5

The heating cycle setting is used for adaptation to the controlled system. This is affected by the following:

- room size
- type of heating (convector heaters, single-storey heating systems)
- installation location
- temperature controller/thermostat

The setting range extends from 1 to 6.

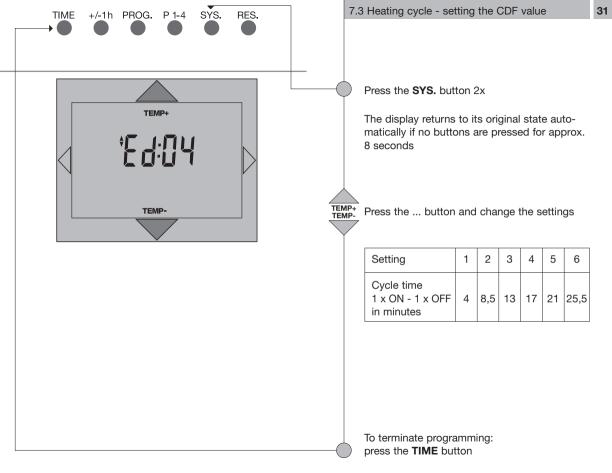
If the temperature in a room changes too dramatically, e.g. as a result of ventilating, then the cycle may be terminated prematurely or the system may be switched on again.

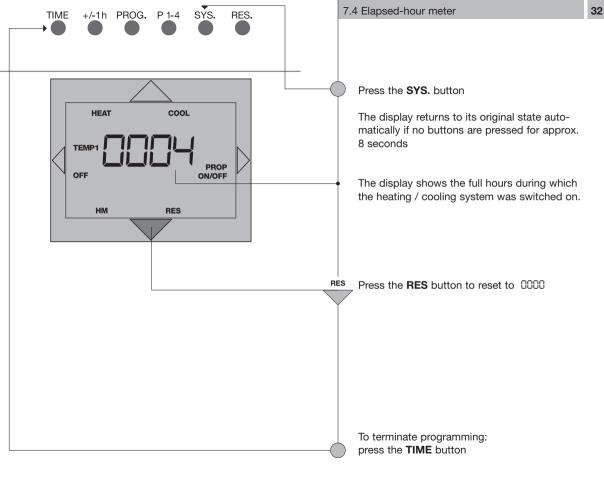
If the difference in temperature within a room is too great, the system does not switch ON and OFF sufficiently frequently, i.e. a lower CDF value must be selected.

If the system switches too often, a correspondingly higher CDF value must be selected.

Factory setting: CDF = 4

(4x 4 min. 15 s = 17 min.)





Press the **RES**, button

The chronostat reverts to a defined operating state and resets the current time to Monday 20:00 h.

Refer to Page 9 for information concerning setting the time / date

7.6 Recalling the factory settings

This function recalls factory programmes P1 - 4 and the factory settings for the temperature levels and resets the current time to Monday 20:00 h. It also erases all user-defined settings.

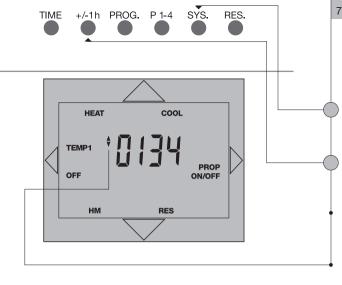
Press the PROG. button and keep it pressed

Press the RES. button

Release the RES. button

Release the **PROG.** press down key until 20:00 h appears in the display

- Refer to Page 9 for information concerning setting the time / date
- Refer to Page 15 for information concerning selecting factory programmes or
- Refer to Page 21 for information concerning entering a user-defined programme



7.7 Electronic interlock

The electronic interlock prevents unintentional or unauthorized modifications to the programmes. The temperature can be changed slightly by +/- 3 degrees. It is also possible to interrogate the current time.

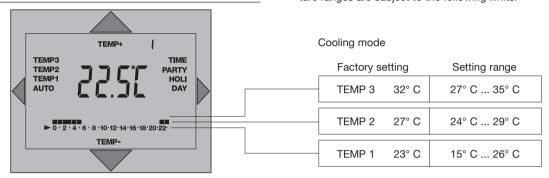
Press the SYS. button 1x

Press the +/-1h button 1x

Enable - repeat the procedure

The display indicates interlock on/off

If the unit is used in cooling mode, the temperature ranges are subject to the following limits:



Note:

In cooling mode, the air-conditioning system is switched on the least number of times with TEMP 3 (highest temperature). The air conditioner cools to the greatest extent with TEMP 1. This factor has been taken into consideration in factory programs P1 - 4 by swapping TEMP 3 and TEMP 1 over compared with heating mode. OFF cannot be set in cooling mode (refer to Page 28)

Dimensions H x W x D (mm) 134 x 81 x 33
Weight	approx. 200 g
Operating voltage	battery, type 2x LR 6 / AA
Switching capacity: - resistive load - inductive load	5 A / 250 V~
cos φ 0.6	1 A / 250 V~
Switching output	floating
Switching contact	1 changeover contact
Ambient temperature	- 5°C to + 45 °C
Class of protection	II
Accuracy	typ 2.5 s / day at + 25 °C
Reserve power	2 min. to replace the batteries
Battery life	1 year
Shortest switching period: - daily program - weekly program	1 h 1 h
Programmable every	15 min.
Switching preselection	yes

Switching state display an	d operating modes:
Heating mode	Flame symbol
Cooling mode	Fan symbol
Automatic mode	AUTO
Continuous mode	TEMP 1, TEMP 2 or TEMP 3
Party mode	PARTY
Holiday mode	HOLIDAY
Type of installation	Surface-mounted
Type of connection	Screw-type terminals, each 2.5mm ²
Temperature Heating control range	+ 5°C to + 35°C
Temperature Cooling control range	+ 15°C to + 35°C
Protection against freezing	TEMP 1 setting (factory setting: 5°C)
Differential temperature gap	+/- 0.25 at 0.4 K *
Feedback	Electronic
Degree of protection	IP 20
* Greater fluctuations are po	ssible as a result of the

heating system and the heated room.

 Operator control restricted at low voltage, i.e. whenever the battery symbol appears on the display. It is no longer possible to activate factory programs. Data entered during programming is not stored.

- 2. It is not possible to edit data
- 3. It is not possible to set the value for the temperature level
- 4. The heating system takes too long to reach the set temperature
- 5. The heating system switches too frequently
- The wrong key has been pressed or incorrect values have been entered during programming.

Remedy:

1. Replace the battery Page 7

2. The interlock is active Page 35

3. Select values within the setting range Page 12

Check that the correct CDF value
 has been entered Page 31

 Check that the correct CDF value has been entered Page 31

Cancel the operation:
 Press the TIME button or the AUTO button on the display to start again

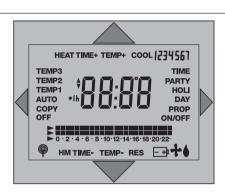
10. Cleaning and maintenance

Use a dry cloth to clean the unit. Never use any caustic cleaning agents.

11. Service addresses

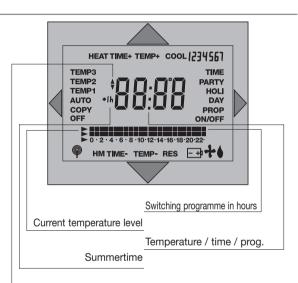
Grässlin GmbH & Co. KG FEINWERKTECHNIK Postfach 1232 D-78104 St. Georgen/Schw. Telephone ++49(0)7724/933-0 Telefax ++49(0)7724/933-240

Key word	page	Key word	page
Arrow buttons	41	Heating mode	28
AUTO automatic programme seque	ence 42	Heating systems	30
Basic programmes	03	HM	42
Batteries	07	HOLIDAY mode	27
Brief description	03	Holiday mode	27
Buttons	41	Installation	05
CDF value	30 - 31	Interrogating the time	11
Cleaning and maintenance	39	List of dealers	39
Clips	05	M ounting	05
Connections	06	Overview	41 - 42
Continuous temperatures	25	Parameters	29
Control elements	41	PARTY mode	26
Control response	28	Power supply	07
COOL	42	Problems and remedies	38
Cooling mode'	28	Protection against freezing	12 / 28
COPY	23	RES	33 / 42
Copy function	23	RESET	33
Cycle times	30	Room temperature	42
Diagram	06	S ervice	39
Display	42	Setting the time	09
Displays	42	Stand	05
Elapsed-hour meter	32	Summertime	10
Electronic interlock	35	System settings	28
Elementary operator control	04	Technical data	37
Entering / editing programmes	2	TEMP	42
Entering the date	09	Temperature levels	12
Erasing settings	34	TIME	42
Factory programmes	15 - 18	Time setting	09
Factory settings	12 / 14 / 34	User-defined programme	20
Faults	38	W intertime	10
H EAT	42		
			GI



10. OVCI VICVV	/ Control Cicinicitis	7
TIME	Setting the current time Confirming inputs	
+/- 1h	Setting and changing over between summertime and wintertime	
PROG.	Recalling, reading and editing the programme	
P 1-4	Selecting the factory programmes	
SYS.	System settings, Page 28	
RES.	Reset to a defined operating state, time Mo 20:00 h	
	Setting the temperature / time Selecting temperature level / system setting	
	Setting the temperature / time Selecting temperature level Resetting the elapsed-hour meter	
4	Selecting the operating mode: TEMP 1, TEMP 2, TEMP 3, AUTO, COPY System settings	
	Interrogating the current time Selecting the PARTY and HOLIDAY modes System settings Selecting the times for temperature changes	

13. Overview / control elements



Changing the required value

		,	
13.	Overview A	/ displav	/S

HEAT	Heating mode
COOL	Cooling mode
TIME +	Set the assignment of the TIME button
TEMP+	Set the assignment of the TEMP button
1234567	Indicates the current day of the week
TEMP 3	TEMP 3 mode selected
TEMP 2	TEMP 2 mode selected
TEMP 1	TEMP 1 mode selected
AUTO	Factory programme or user-defined programme running
COPY	Enter the assignment of the COPY button - user-defined programme, Page 23
OFF	System setting, Page 28
TIME	Current time
PARTY	PARTY mode, Page 26
HOLIDAY	HOLIDAY mode, Page 27
PROP	System setting, Page 28
ON/ OFF	System setting, Page 28
НМ	Elapsed-hours indicator, Page 32
TIME -	Set the assignment of the TIME button
TEMP-	Set the assignment of the TEMP button
RES	RESET, Page 33
-+	Battery status / battery replacement, Page 7
+	Cooling mode on/off
•	Heating mode on/off