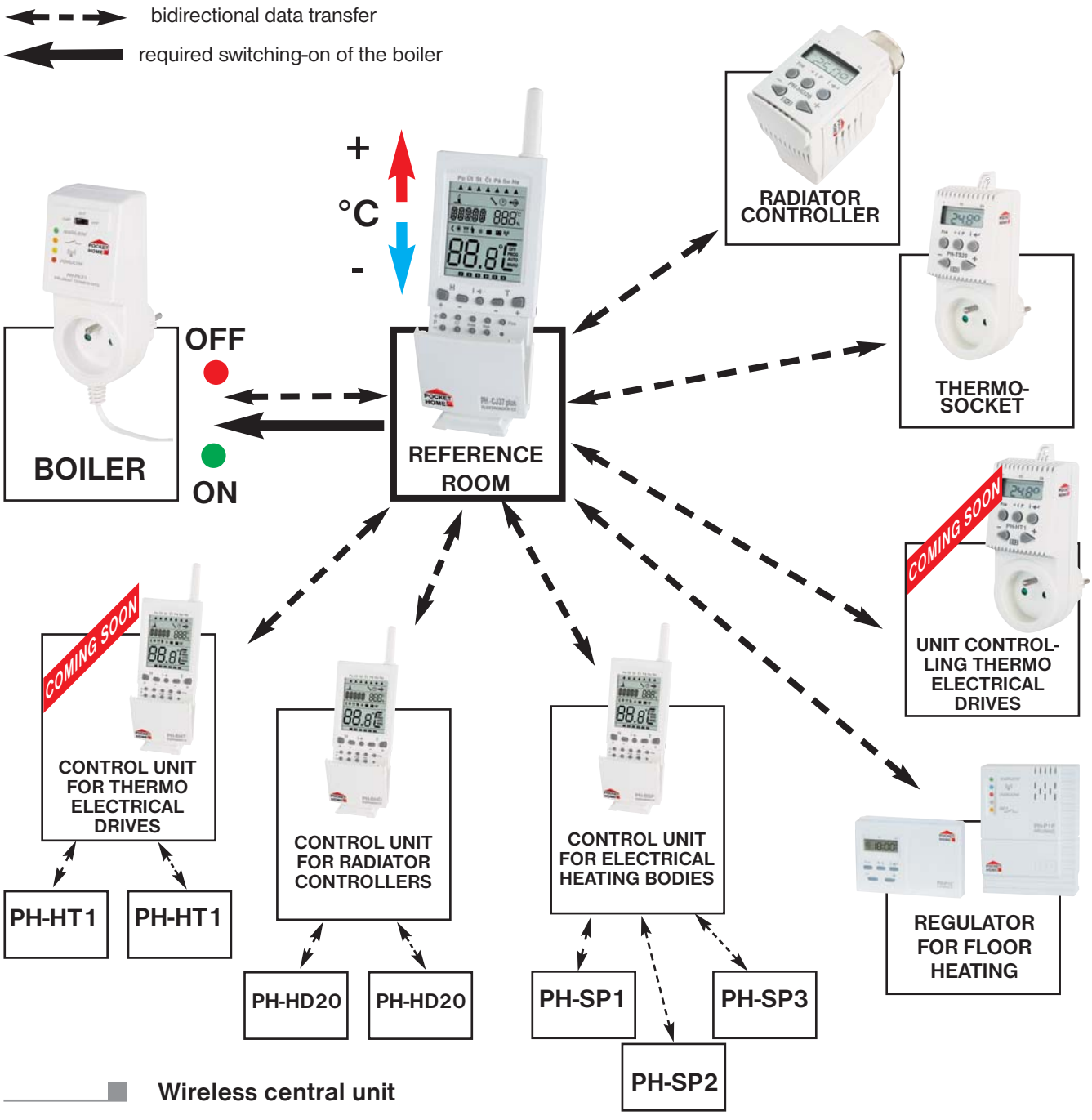
POCKET HOME

PocketHome®

PH-CJ37

CENTRAL CONTROL UNIT

CENTRAL CONTROL FOR THE HEATING OF YOUR HOUSE



- Wireless central unit
- Principal component of PocketHome® system
- Two-way radio communication on 433.92 MHz
- Regulation for room heating
- It controls also other components of the system
- Power supply from alkaline batteries 2x1.5 V, AA type

ELEKTROBOCK CZ

- Operating instructions PH-CJ37
- version 11.06

SYSTEM FUNCTIONS

This wireless two-way system is primarily designed for the regulation of heating. Here, the central unit fulfils the functions of wireless room thermostat. According to the temperature in reference room, in which it is located, it controls the heat source (for example boiler) and regulates whole heating systems according to defined programs. It enables to switch on/off digital controllers (radiators), thermo-sockets (el. heaters), control units for thermo-electric drives, regulators of floor heating (individual circuits, controlled by pump or three-way valve) and further control units for the regulation of heating bodies within one room. The central unit sends information on required temperature to individual components and on the basis of this information, each component controls respective heating appliance, which it is connected to it.

COMPONENTS OF THE SYSTEM

PH-CJ37 Wireless central unit

- it represents a brain of whole system and provides for two-way communication among individual components
- it measures temperature in the rooms and controls the heating of respective rooms
- it functions as a wireless room thermostat
- it monitors present state of components activated in the system
- 22 weekly programs, definable also with using of PC (see p.4, 7)
- when GST1 module is connected, it can be controlled via mobile phone (see p. 5, 10, 14-17)

PH-PK20 Wireless receiver for boiler - wall-mounted

- on the basis of information related to present and required temperature, as received from central unit, it controls boiler
- it sends back confirmation of the change made
- receiver state is indicated by LEDs on front panel
- after short-time power failure it activates automatically into the system (E-EPROM memory)

PH-PK21 Wireless receiver for boiler - into socket

- on the basis of information related to present and required temperature, as received from central unit, it controls boiler
- it sends back confirmation of the change made
- receiver state is indicated by LEDs on front panel
- after short-time power failure it activates automatically into the system (E-EPROM memory)
- the connection of further appliance is possible (through socket)

PH-HD20 Wireless digital radiator controller

- it senses current temperature in the room
- it receives information on required temperature from central unit
- on the basis of the information obtained it controls the position of radiator valve
- it sends back confirmation of the change made and also failure conditions
- it is able to work also in autonomous mode
- it is powered economically by alkaline batteries 2x1.5 V of AA type

PH-TS20 Wireless thermally switched socket

- it senses current temperature in the room
- it receives information on required temperature from central unit
- on the basis of information obtained it controls connected appliance
- it sends back confirmation of the change made
- it is able to work also in autonomous mode
- adjustable HYSTERESIS in the range from 0.1°C to 2°C
- it notifies about the necessity to charge the back-up battery

PH-HT1 Wireless unit for thermo electric drives

- it senses current temperature in the room
- it receives information on required temperature from central unit
- on the basis of the information obtained it controls thermo-electric drive of radiator valve
- it sends back confirmation of the change made
- it is able to work also in autonomous mode
- it notifies about the necessity to charge the back-up battery

PH-BP1 Wireless regulator for floor heating

- it consists of transmitting and receiving part (1-channel or 9-channel)
- it fulfils the functions of room thermostat, which controls connected circuit of floor heating
- the transmitter senses present temperature in the room and receives information on required temperature from central unit
- on the basis of information obtained, it wirelessly controls receiver (three-way valve or pump)
- it sends confirmation of the change made back to central unit
- it is able to work also in autonomous mode
- adjustable HYSTERESIS in the range from 0.1°C to 5°C
- maximal possible quantity of PH-BP1 units amounts to 99.

PH-BSP Control unit for switching on/off of heating bodies

- it senses the temperature inside the room and centrally switches on/off individual heating appliances according to requirements
- it is able to control up to 255 switching elements from one place
- the elements are switched on successively (after 1 s), so that power surges are prevented
- it is able to work also in autonomous mode (as a room thermostat)
- it is suitable for the control of electrical heaters in one room
- following units may be used as switching elements
  PH-SP1 mounted into installation box
  PH-SP2 mounted on wall
  PH-SP3 inserted into socket
  max. switched current is 16 A

PH-BHD Control unit for digital controllers

- it senses the temperature inside the room and centrally controls digital controllers located on radiators
- it is able to control up to 255 digital controllers from one place
- according to required temperature it regulates opening/closing of all controllers in the room
- it is able to work also in autonomous mode (as a room thermostat)
- it is suitable for the control of radiators in one room
- following items may be used as control elements
  PH-HD20 Wireless digital radiator controller
  PH-HD1 Wireless digital radiator controller without LCD display

PH-BHT Control unit for thermo electric drives

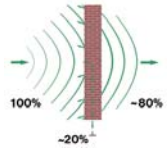
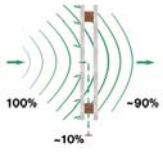
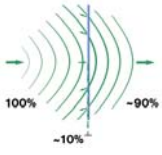
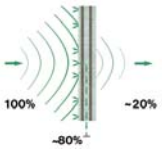
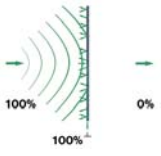
- it senses the temperature inside the room and centrally controls individual thermo electric drives of valves according to requirements
- it is able to control up to 255 units from one place
- it is able to work also in autonomous mode (as a room thermostat)
- it is suitable for the control of thermo electrical drives in one room
- following items may be used as control elements
  PH-HT1 Wireless unit for thermo electric drives

! In order to prevent mutual interference of PocketHome® systems, each system is protected by its own unique code that is stored in central unit PH-CJ37 in factory!

! Correct communication of all components of PocketHome® system with the central unit PH-CJ37 requires code learning - ACTIVATION of each component added to the system!

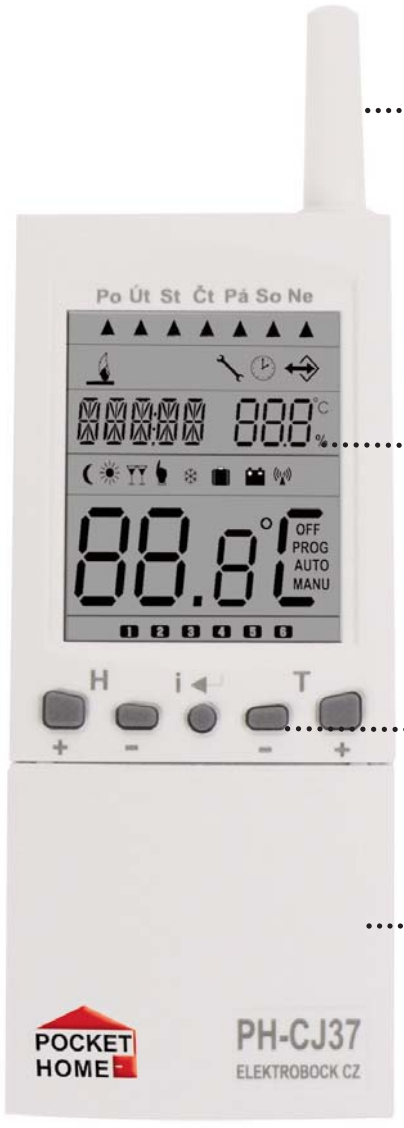
! As the whole system uses bidirectional radio frequency of 433.92 MHz, you must strictly observe the instructions for installation and location of each component of the system according to respective manual!

PERMEABILITY OF VARIOUS MATERIALS FOR RF SIGNAL 433.92 MHz

wall	plasterboard	glass	reinforced concrete	iron
				

Note: Above mentioned values are only approximate; they may vary because of specific conditions at the location of signal transmission and reception!

DESCRIPTION OF PH-CJ37



antenna

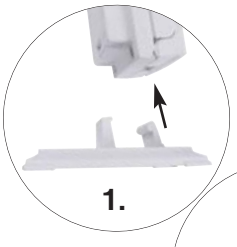
character display

control buttons

battery compartment

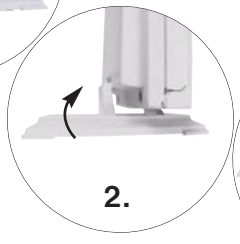
connector for external source
(5 to 12V/ DC min. 150mA)
0 V
5 to 12 V

connector for PC or GSM module



installation to stand

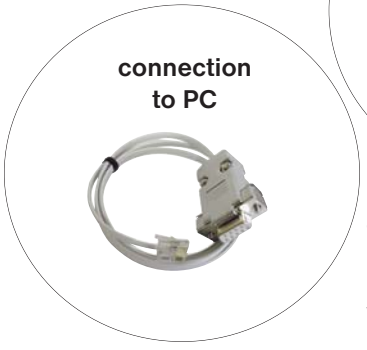
1.



2.

3.

Note: the stand is supplied with PH-CJ37



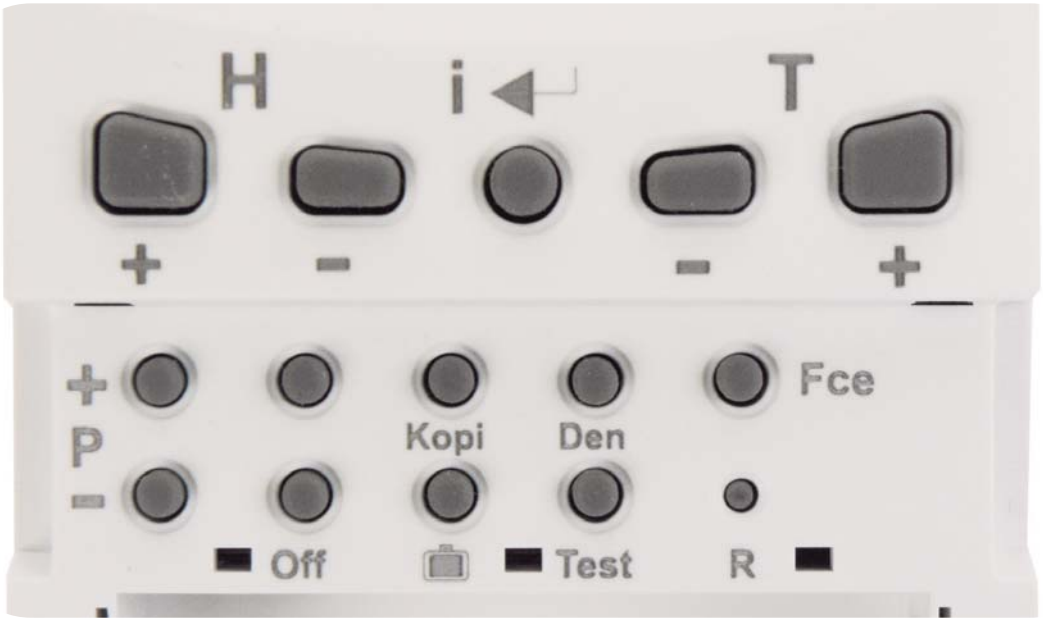
Note: external source, program and GST1 module are not included with PH-CJ37!

LOCATION OF BATTERIES AND THEIR REPLACEMENT

- open the cover of battery compartment and remove protective paper, now PH-CJ37 is functional
- when replacing batteries pay attention to correct polarity, as shown in battery compartment
- low battery is indicated by flashing symbol on the display
- use solely alkali pencil batteries 2x1.5 V of AA type!

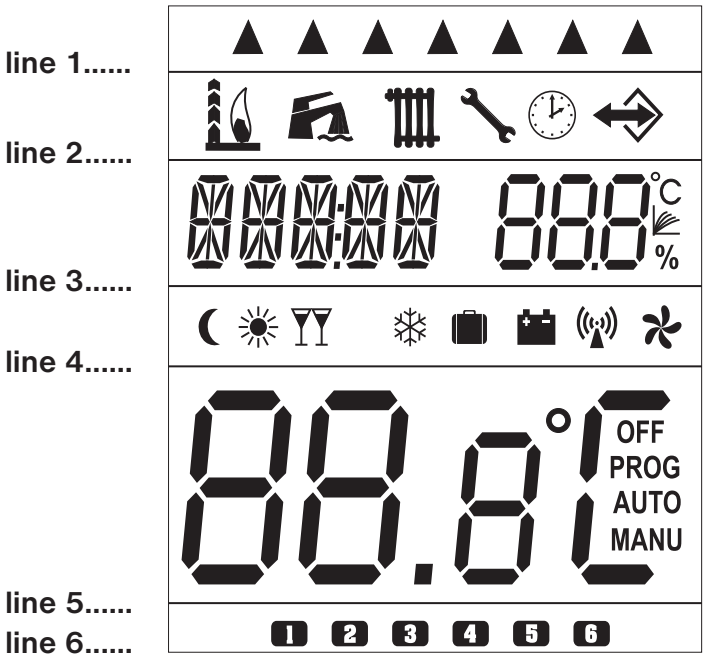
! Dispose old batteries in compliance with the regulations related to the handling of dangerous waste!

DESCRIPTION OF CONTROLS ON PH-CJ37



H + –	change of time (in PROG mode) setting the date and time (in holiday mode " ") browsing among components (in ACTIV and INFO mode) shift for setting the constant 12 – tel. No. (in CONST mode)
i ↵ ●	Enter, confirmation display of information on required temperature and operating hours in holiday mode, required temperature and present time are displayed
T + –	change of temperature change in the setting of clock and constants browsing in the course of function selection (Fce)
+ ● P – ●	selection of program for boiler (in AUTO mode) switching among programs (in PROG mode) switching among constants (in CONST mode) switching between temperatures " and " (in MANU mode) component adding (in ACTIV mode)
● Off	reset of operating hours component deactivation (in ACTIV mode) switching the component off (in INFO mode, poss. switching the boiler off also in AUTO mode)
● Kopi	copying of days (in PROG mode)
●	holiday (in this mode, info cannot be displayed) selection EVEN/ODD week (in PROG mode)
● Den	change of day (in PROG mode)
● Test	testing of correct connection (of boiler, GSM module) testing of individual components (in ACTIV, INFO modes)
● Fce	selection of function (mode) see p.7 AUTO, MANU, CLOCK, PROG, CONST, ACTIV, INFO
● R	reset

DESCRIPTION OF DISPLAY ON PH-CJ37



line 1

▲ indication of present day

line 2

indication of switched on boiler

symbol for DHW (only in OpenTherm version-under preparation)

symbol for CH (indication of boiler's operating hours)

symbol for boiler revision

symbol for setting of present date and time, see p. 7

indication of active communication

line 3

varying part of display
display of present time and required temperature/program No.
displaying of further information is explained in detail at each mode´s section

line 4

indication of economy temperature (in MANU mode)

symbol for summer mode, see p. 9

indication of comfort temperature (in MANU mode)

error message

symbol for anti-freeze mode, see p. 14

symbol for holiday mode, see p. 14

indication of weak battery

indication of signal transmitting/reception

line 5

varying part of display
indication of present temperature and selected mode (OFF, AUTO, MANU, PROG)
displaying of further information is explained in detail at each mode´s section

line 6

1 indication of program interval (max. 6 intervals per a day)

DESCRIPTION OF PH-CJ37 FUNCTIONS AND THEIR SETTING

First of all you must carefully read and understand introductory part of this manual containing the description of the unit, battery location, functions of buttons and symbols on LCD display!

! UTILIZATION OF SOFTWARE: For those, who have purchased the software enabling to control the system via PC, following part has only informative character. All constants, programs can be set and the components may be activated directly on your PC.

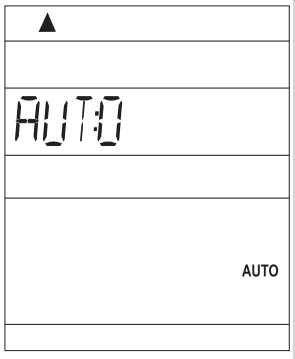
As soon as the central unit is connected to PC, all values set are transferred to the memory of central unit!
ATTENTION! THE VALUES SET ON PC HAVE HIGHER PRIORITY, SO ALL VALUES IN CENTRAL UNIT ARE REWRITTEN AFTER THE CONNECTION TO PC!

If you don't have the software, continue according to further text. It includes the explanation of basic modes and the setting of important parameters for correct functioning of the whole system.

Press **Fce** button and by means of **+/- T** buttons browse individual modes, confirm selection by pressing **i↵**.

AUTO automatic mode

The system functions in automatic mode according to the programs defined for individual components of the system.



Change of the program for boiler is made by pressing **+/- P** buttons.
Following information is displayed when **i↵** button is pressed:
- required temperature for boiler; short-term change of the temperature can be made by pressing **+/- T** (see page 14)
- operating hours of the boiler, pressing **Off** button resets the counter

Display options on LCD:

line 1 - present day
line 3 - from the left side: present time or error states, required temperature or program No.
line 5 - present temperature and selected mode
line 6 - program interval

MANU manual mode

The system functions in manual mode.
Within this mode, two required temperatures may be set for the boiler: economy and comfort. Selection and setting are made with using of **+/- P** and **+/- T** buttons.

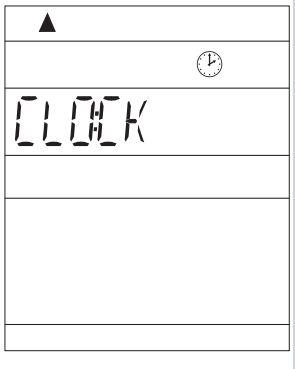
MANU is not displayed:
- when the boiler is not active (PK: N)
- when central unit is connected to PC

Display options on LCD:

line 1 - present day
line 3 - from the left side: present time or error states, required temperature
line 4 - selected temperature: economy ☾ or comfort
line 5 - present temperature and selected mode

CLOCK setting of present time and date

By means of **+/- T** buttons successively set hours, minutes, seconds, day, month and year. Each setting should be confirmed by pressing **i↵** .

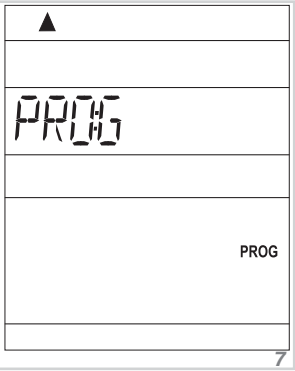


Synchronization of time and date

When time and date are changed on central unit, these data are automatically synchronized to all active components (the component has to be in wireless mode = **AUTO+MANU** items are displayed simultaneously on LCD of each component)! Following symbols are displayed on central unit's display in the course of synchronization: **Hd** (pro controllers), **TS** (for sockets), **bP1** (for regulators of floor heating P1) etc.
This synchronization is also performed automatically every 2 hours.
When central unit is connected to PC and PocketHome® software is started, the time and date are synchronized automatically within approx. 1 minute (**PC always has the highest priority**)!

PROG programming

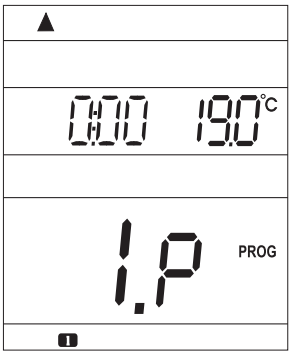
The central unit fulfils the functions of room thermostat and enables to set up to 22 different weekly programs.
For each day, up to 6 time intervals may be set with various temperatures.
Thanks to advanced technology, the unit may be programmed in two ways:



1. Programming directly on PH-CJ37
the values set are displayed on LCD display, it is possible to select even/odd week

2. Programming with using of PC
simple programming with using of PocketHome® software; defined programs and the adjustments made are automatically transferred immediately when central unit is connected to PC - see the manual for SW.

Programming directly on PH-CJ37



- press **Fce** button and by means of **+/- T** select **PROG** mode, confirm by pressing **i** button
- by means of pressing **+/- P** buttons select program, which should be set (1.P to 22.P)
- press **+/- H** to set the beginning of temperature change, with minimal step of 10 minutes
- by pressing **+/- T** assign required temperature (step of 0.5°C) to given time
- when the first time and temperature are set, press **i** to confirm
- display automatically shifts to the setting of the second time and temperature for the same day, as indicated by symbol ❷ on the last, the sixth line of the display
- continue the setting up to last (the sixth) interval
- pressing **i** (§§§) button automatically changes to the setting of next day, which can be programmed in the same way as described above.

Info: If not all 6 settings for one day are needed, it is possible to change to next day by successive pressing of **i** button or by pressing **Den** button.

Copying of days in PROG mode

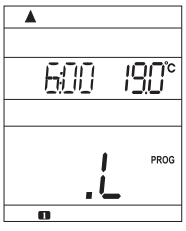
This function accelerates programming. Program for one day may be copied to next day by simple pressing of **Kopi** button.

- day indicator has to mark the day that has to be copied to the next day
- press **Kopi** button and whole program copies automatically to the next day and day indicator (line 1 of the display) moves to the next day

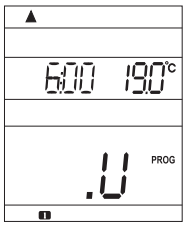
Selection of even or odd week in PROG mode

If we set programs **1.P** and **2.P**, we can define which will be active in odd or even week. When this option is selected, the programs will alternate each week in **AUTO** mode (suitable in the case of work in shifts).

ODD



EVEN



- press **Fce** button and by means of **+/- T** buttons select **PROG** mode, confirm by pressing **i** button
- by means of pressing **+/- P** buttons select program **1.P**
- press 💼 button and select, for which week the program will be active **L = odd, U = even, 1= not defined**
- **2.P** program is defined automatically

Pre-set factory programs

Programs **3.P to 22.P** are factory pre-set, but can be changed as necessary like 1.P and 2.P. (example: item 5/21 means that at 5 o'clock, required temperature is 21°C)

Note: - when PH-CJ37 is connected to PC, these programs are rewritten by defined programs!
- when changing the preset program check all 6 time intervals!

program No.3	1	2	3	4	5	6
Monday	05/21	06/18	12/20	16/21	18/22	21/18
Tuesday	05/21	06/18	12/20	16/21	18/22	21/18
Wednesday	05/21	06/18	12/20	16/21	18/22	21/18
Thursday	05/21	06/18	12/20	16/21	18/22	21/18
Friday	05/21	06/18	12/20	16/21	18/22	21/18
Saturday	07/21	21/18				
Sunday	07/21	21/18				

program No.4	1	2	3	4	5	6
Monday	06/21	07/18	15/21	18/22	22/18	
Tuesday	06/21	07/18	15/21	18/22	22/18	
Wednesday	06/21	07/18	15/21	18/22	22/18	
Thursday	06/21	07/18	15/21	18/22	22/18	
Friday	06/21	07/18	15/21	18/22	22/18	
Saturday	07/21	18/22	22/18			
Sunday	07/22	18/23	22/19			

program No.5	1	2	3	4	5	6
Monday	08/21	09/18	15/21	18/22	23/18	
Tuesday	08/21	09/18	15/21	18/22	23/18	
Wednesday	08/21	09/18	15/21	18/22	23/18	
Thursday	08/21	09/18	15/21	18/22	23/18	
Friday	08/21	09/18	15/21	18/22	23/18	
Saturday	08/21	18/22	22/18			
Sunday	08/21	18/22	22/18			

program No.6	1	2	3	4	5	6
Monday	07/21	09/18	15/22	18/23	22/18	
Tuesday	07/21	09/18	15/22	18/23	22/18	
Wednesday	07/21	09/18	15/22	18/23	22/18	
Thursday	07/21	09/18	15/22	18/23	22/18	
Friday	07/21	09/18	15/22	18/23	22/18	
Saturday	07/21	18/23	22/18			
Sunday	07/21	18/23	22/18			

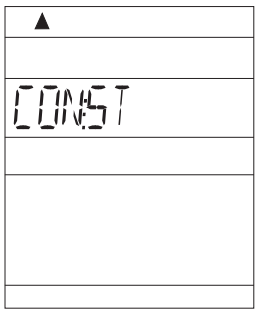
program No.7	1	2	3	4	5	6
Monday	07/22	09/18	15/23	18/24	22/18	
Tuesday	07/22	09/18	15/23	18/24	22/18	
Wednesday	07/22	09/18	15/23	18/24	22/18	
Thursday	07/22	09/18	15/23	18/24	22/18	
Friday	07/22	09/18	15/23	18/24	22/18	
Saturday	08/22	18/24	22/18			
Sunday	08/22	18/24	22/18			

program No.8	1	2	3	4	5	6
Monday	06/20	08/18	14/21	17/22	22/17	
Tuesday	06/20	08/18	14/21	17/22	22/17	
Wednesday	06/20	08/18	14/21	17/22	22/17	
Thursday	06/20	08/18	14/21	17/22	22/17	
Friday	06/20	08/18	14/21	17/22	22/17	
Saturday	07/21	17/23	22/19			
Sunday	07/21	17/23	22/19			

program No.9	1	2	3	4	5	6
Monday	08/23	21/18				
Tuesday	08/23	21/18				
Wednesday	08/23	21/18				
Thursday	08/23	21/18				
Friday	08/23	21/18				
Saturday	08/23	21/18				
Sunday	08/23	21/18				

Note: the programs 10.P to 22.P are identical with program 9.P, can be also changed!

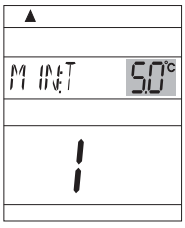
CONST setting the constants for thermostat



Following constants have to be set for correct function of central unit. They define temperature limits or method of control (hysteresis or PI regulation) for active boiler **PK: A** .

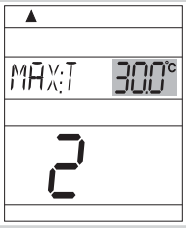
- press Fce button and by means of +/- T select **CONST** mode, confirm by pressing i↵
- press +/- P buttons to display individual constants (see below)
- set by pressing +/- T buttons, again confirm by i↵ button.

1. MINIMAL REGULATED TEMPERATURE



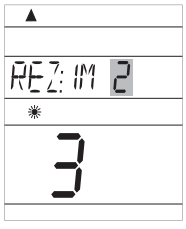
It is used for the setting of minimal adjustable temperature. When PH-GST1 module is installed, you will be informed via SMS message that the temperature in the room dropped below this value. Can be selected in the range from **2°C do 10°C**. Make respective setting and press i↵ to move automatically to next constant.

2. MAXIMAL REGULATED TEMPERATURE



It is used for the setting of maximal adjustable temperature. When PH-GST1 module is installed, you will be informed via SMS message that the temperature in the room raised above this value. Can be selected in the range from **15°C to 39°C**. Make respective setting and press i↵ to move automatically to next constant.

3. EARLY SWITCHING THE HEATING SYSTEM ON/ SUMMER MODE



By pressing +/- T select one of following modes and confirm by pressing i↵ .

Volba 0 = normal mode

Ordinary operation of heating system, without early switching the heating on.

Volba 1 = early switching on of the heating

This function guarantees required temperature at required time.

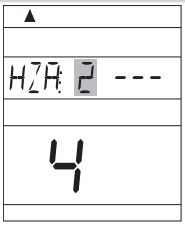
You must not guess when to switch the heating on in order to have an adequate temperature in the morning when getting up without unnecessarily long heating in advance. So, program only the time of required temperature. In two days of operation, PH-CJ37 establishes thermal constants of the room and then it switches the heating on at required time in advance. The period of early switching-on is automatically limited to 2 hours.

Volba 2 = summer mode

In this mode, heating for CH is not enabled. It is useful especially in summer, when it is not necessary to heat for central heating. When this mode is activated, the " ☀ " is showed on the display.

Note: antifreeze protection (3°C) is still functional. **In this mode it is not possible to change the temp. and select holiday mode!**

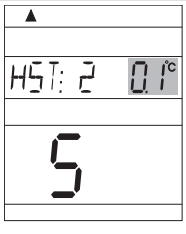
4. MINIMAL DURATION OF HEATING APPLIANCE ACTIVATION WHEN HYSTERESIS IS USED



To set minimal period in minutes for boiler activation in the case of hysteresis.
Select according to the type of heating system, see the table.

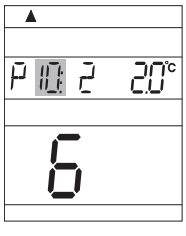
Typ vytápění	Minimální doba zapnutí zdroje
elektrické vytápění	1
plynový kotel	2 (3)
olejový kotel	4
tepelné čerpadlo	5

5. SELECTION OF HYSTERESIS OR PI REGULATION



By pressing +/- T set the **hysteresis** in the range from **0,1°C do 1,5°C**.
If hysteresis is selected, the constants (6, 7, 8) are omitted automatically, which relate to setting the parameters of PI regulation.
When three horizontal dashes are selected by +/- T buttons, **PI regulation** is active.

6. TIME INTERVAL FOR PI REGULATION

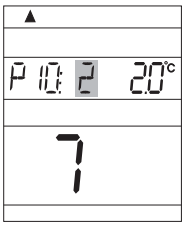


Can be set in the range from **5 to 20 minutes**. The length of this interval is given by thermal lag of respective room.
Optimal setting is usually 10 to 15 minutes.

7. MINIMAL DURATION OF HEATING APPLIANCE ACTIVATION WHEN PI REGULATION IS USED

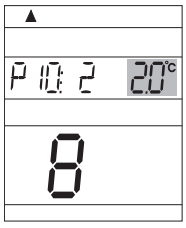
Can be set in the range from **1 to 5 minut**. The setting depends on the type of heating system and on the selection of time interval for PI regulation. Recommended to be set according to following table.

Typ vytápění	Minimální doba zapnutí zdroje
elektrické vytápění	1
plynový kotel	2 (3)
olejový kotel	4
tepelné čerpadlo	5



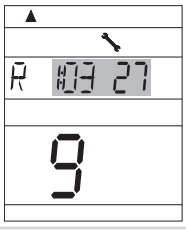
8. PROPORTIONALITY ZONE FOR PI REGULATION

This value defines the commencement of PI regulation.
For example, required temperature is 22.0°C and proportionality zone amounts to 1.5°C. Up to 20.5°C the source will heat with a full output.
As soon as this value is achieved, PI regulation starts to function.
PROPORTIONALITY zone can be set in the range from **1.5 to 3.0°C**.



9. INDICATION OF BOILER MAINTENANCE

Set the date (day, month, year) for the notification on prescribed boiler maintenance. At defined moment, the symbols **Udr** and 🔧 lit on the display (can be cancelled by setting a new time and date for next boiler maintenance!).



11. SELECTION OF CONTROL BY GSM MODULE

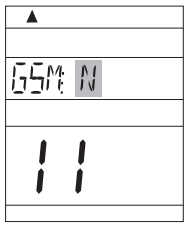
By means of this constant it is possible to select the option to control the central unit via GSM module.

Options:

GSM: N GSM module is not enabled, constants 12 and 13 are automatically omitted.

GSM: A GSM module is enabled, it is necessary to set the constants 12 and 13!

Select by pressing +/- T buttons and confirm by i↵ .
(The control via GSM module is described in detail in the manual for GST1)



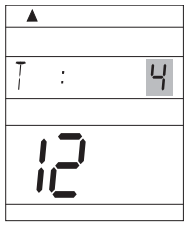
12. SETTING THE TELEPHONE NUMBER

This constant may be set only for the versions with option of connecting of GST1 module enabling the control via mobile phone (see p. 14-17).

Set the telephone number, in international format (420123456789), to which SMS messages informing about thermostat condition should be sent.

Set by pressing +/- T buttons and confirm by i↵ button.

The numbers can be changed by +/- H buttons.



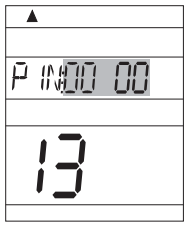
13. SETTING THE PIN CODE OF SIM CARD

This constant may be set only for the versions with option of connecting of GST1 module enabling the control via mobile phone (see p. 14-17).

Set the PIN code of SIM card, which is inserted in GST1 module.

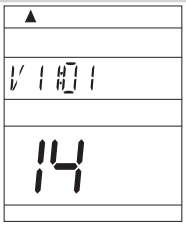
Set by pressing +/- T buttons and confirm by i↵ button.

The numbers can be changed by +/- H buttons.

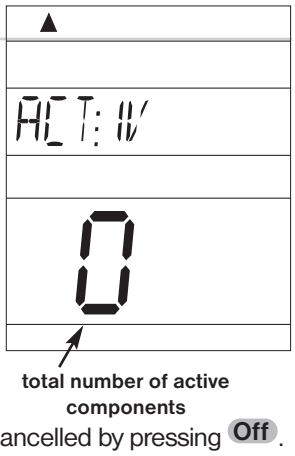


14. FIRMWARE VERSION

This constant cannot be set, it just informs on firmware version.



ACTIV activation of individual components of PocketHome® system



total number of active components

This mode enables to add (activate) successively the components of the system and assign programs 1.P-22.P to them. **Maximal number of all components of the whole system amounts to 255!**

- press Fce button and by means of +/- T buttons select **ACTIV** mode, confirm by pressing i↵
- by pressing i↵ button select the group of components to be activated
- by pressing +/- P buttons select the option according to following table
- by pressing +/- T button assign a program
- to activate a further component in the same group (e.g. Hd), press +/- H
- press +/- P to activate and +/- T to assign program to respective component.
- when all components in one group are set, confirm it by pressing i↵ button and you will change to another group (e.g. TS)

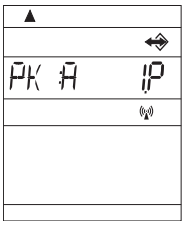
Individual components within the group may be browsed by pressing +/- H . A component may be cancelled by pressing Off.

Group of components	Description	Activation options (selected by +/- P button)	Programs (selected by +/- T)
PK max. 1component	**BOILER RECEIVER** (PH-PK20, PH-PK21)	**A** = boiler receiver active **N** = is not use	**1.P - 22.P**
Hd max. 255 components *	**DIGITAL RADIATOR CONTROLLER** (PH-HD20)	**0**= controller inactive Select successively the addresses from **1 to 255** according to the number of controllers within the system **	**1.P - 22.P**
TS max. 255 components *	**THERMO-SOCKET** (PH-TS20)	**0**= socket inactive Select successively the addresses from **1 to 255** according to the number of sockets within the system **	**1.P - 22.P**
HT max. 255 components *	**UNIT FOR THERMO ELECTRICAL DRIVES** (PH-HT1)	**0**= unit inactive Select successively the addresses from **1 to 255** according to the number of sockets within the system **	**1.P - 22.P**
bP1 max. 99 components *	**REGULATOR FOR FLOOR HEATING** (PH-BP1)	**0**= thermostat inactive Select successively the addresses from **1 to 99** according to the number of thermostats within the system **	**1.P - 22.P**
bSP max. 99 components *	**CONTROL UNIT FOR EL. HEATING BODIES** (PH-BSP)	**0**= unit inactive Select successively the addresses from **1 to 99** according to the number of units within the system **	**1.P - 22.P**
bHd max. 99 components *	**CONTROL UNIT FOR DIGITAL CONTROLLERS** (PH-BHD)	**0**= unit inactive Select successively the addresses from **1 to 99** according to the number of units within the system **	**1.P - 22.P**
bHT max. 99 components *	**CONTROL UNIT FOR THERMO EL. DRIVES** (PH-BHT)	**0**= unit inactive Select successively the addresses from **1 to 99** according to the number of units within the system **	**1.P - 22.P**

* ***number of components**: This number represents the quantity of all components in the system, e.g. PK+ Hd+ TS+ HT+ bP1+ bSP+ bHd+bHT=255. So, the system may include 1 receiver for boiler and further 254 digital radiator controllers and any other combination!*
* ***address from 1 to 255**: This address must always agree with the address given in the parameter PAr in manual for PH-HD20 and PH-TS20, PH-bP1.... It is assigned automatically in the course of learning in UA:dr mode (for PH-HD20/TS20 of 10.05 version and igher)!*

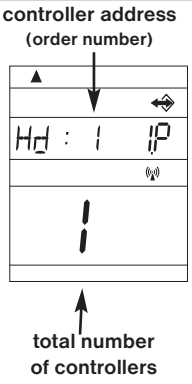
ACTIVATION OF BOILER RECEIVER - PK

- press Fce and by means of +/- T select **ACTIV** mode, confirm by pressing i↵
- information on boiler receiver (PK) will be shown on the display
- by means of pressing +/- P select the option according to following table
- by pressing +/- T buttons assign temperature program (1.P - 22.P)
- on boiler receiver (PH-PK20,PH-PK21) press "**FUNCTION BUTTON**" to get into code learning mode (see respective manual for the receiver)
- press Test button on PH-CJ37 (the symbol for signal transmitting displays)
- two LEDs flash simultaneously on the receiver and the component is now ACTIVATED!



If **Err** appears on the display, it is necessary to check the connection and repeat whole procedure!

ACTIVATION OF DIGITAL CONTROLLERS - Hd



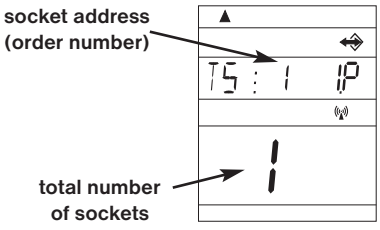
- press Fce and by means of +/- T buttons select **ACTIV** mode, confirm by pressing i
- repeatedly press i to display the name of group of components: **Hd** for controllers
- by pressing +/- P button select activation option according to the table (p.11) and by pressing +/- T button assign respective program (1.P-22.P)
- by pressing +/- H buttons select the controller to learn the code
- **set the selected controller (PH-HD20) to learning mode "UA:dr"** (see the manual for PH-HD20)
- press Test button on PH-CJ37 (the symbol for signal transmitting displays)
- further pressing of Test verifies correct activation of the controller
- symbols AUTO and MANU are displayed simultaneously on the controller and so the component is ACTIVATED!
- use the same procedure for the activation of further controllers

If **Err** appears on the display, it is necessary to check the connection and repeat whole procedure!

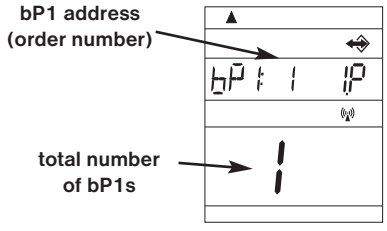
Note: controller deactivation (cancellation from the system) - in ACTIV mode select the controller to be cancelled and press Off button.

THE ACTIVATION OF FURTHER COMPONENTS IS REALIZED IN THE SAME WAY AS IN THE CASE OF DIGITAL RADIATOR CONTROLLERS (Hd)!!

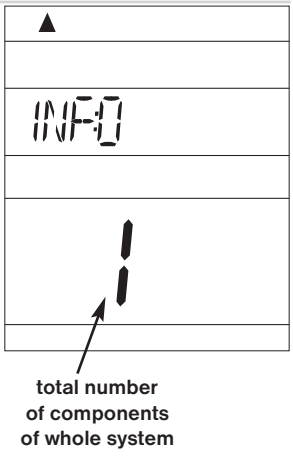
ACTIVATION OF THERMO-SOCKETS - TS



ACTIVATION OF REGULATOR FOR FLOOR HEATING - bP1



INFO information on individual components activated within the system



In this mode, it is possible to obtain information on the condition of individual components to the system and to test their correct connection.

- press Fce button and by means of +/- T buttons select **INFO** mode, confirm by pressing i button
- information on boiler receiver (PK) will be shown on the display
- by pressing i button get to the group of digital radiator controllers (Hd)
- by further pressing of i button to the group of sockets (TS)
- by further pressing of i button to the group of units for thermo al drives (HT)
- by further pressing of i button to the group of regulators for floor heating (bP1)
- by further pressing of i button to the group of control units for electrical heating bodies (bSP)
- by further pressing of i button to the group of c. u. for digital controllers (bHd)
- and by further pressing of i to the group of c. u. for thermo elec. drives (bHT).

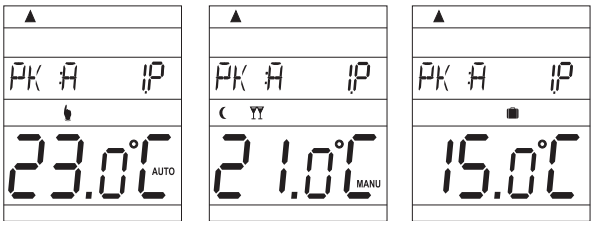
Information on PK and permitted changes

1.the program set - in this mode cannot be changed

2.failure - indicated by " " symbol

3.the mode set - in this mode, it is possible to change required temperature for given mode.

- by pressing +/- P select mode (AUTO, MANU or holiday) and by pressing +/- T make a temperature change.



4.condition - information on the condition of boiler (is on=symbol of flame, selected mode - AUTO/ MANU/ OFF/ holiday)

- press Test (symbol appears briefly on the display and symbol of communication is on).

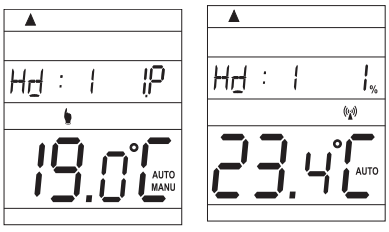
Respective diode indicating signal transmission and reception flashes on the boiler receiver.

The testing of correct connection can be made in AUTO mode, the pressing of Test button causes the switching of relay in the receiver (PH-PK20/21) for several times!

Information on Hd and permitted changes

1.the program set - in this mode cannot be changed

2.controller address - cannot be changed, but it is possible to browse individual controllers by pressing +/- H . This address is assigned automatically in the course of activation (see the manual for PH-HD20).



3.failure - indicated by " " symbol

4.the mode set - in this mode, it is possible to change required temperatures for given mode.
- by pressing +/- P select mode (AUTO, MANU) and by pressing +/- T make a temperature change.
- by pressing Off button the controller is switched off (in AUTO mode, Off is cancelled at next temperature change within program)

5.condition - information on the condition of controller (present temperature) a valve position (in per cent).
- press Test (symbol appears briefly on the display and symbol of communication is on).

Symbol TEST displays on the controller, the controller sends current data on valve position and room temperature to central unit.

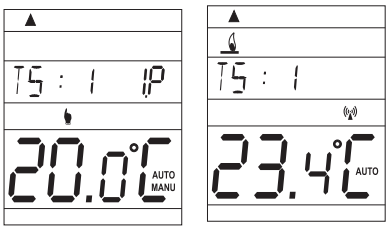
6."opened window" mode - if the controller is in the mode "opened window, "– – –" displays and the controller is closed (see respective manual (PH-HD20/PH-BHD)).

Information on control units bHd can be obtained in similar way, just select group **bHd** in **INFO** mode**!**

Information on TS and permitted changes

1.the program set - in this mode cannot be changed

2.socket address - cannot be changed, but it is possible to browse individual sockets by pressing +/- H . This address is assigned automatically in the course of activation (see the manual for PH-TS20).



3.failure - indicated by " " symbol

4.nastavený režim - in this mode, it is possible to change required temperatures for given mode.
- by pressing +/- P select mode (AUTO, MANU) and by pressing +/- T make a temperature change.
- by pressing Off button the socket is switched off (in AUTO mode, Off is cancelled at next temperature change within program)

5.stav - information on current condition of the socket (heating on/off and present temperature).
- press Test (symbol appears briefly on the display and symbol of communication is on).

Symbol TEST displays on the themo-socket, the socket sends current data on room temperature to central unit.

Information on HT units and control units bSP and bHT zcan be obtained in similar way, just select respective group **HT/ bSP/ bHT** in **INFO** mode!

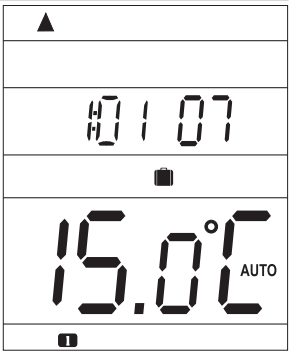
FURTHER DISPLAYED DATA

1, when time setting is changed in PH-CJ37, the time is automatically sent to all components
- note " **Hd, TS,HT...až bHT** " displays briefly on PH-CJ37 (according to active groups of components)
- the same time is displayed on all active components as set on PH-CJ37

2, information on boiler condition
- twice an hour PH-CJ37 unit sends information on boiler condition ("**Hd** …" is again displayed) to all components
- individual components show "**t : Hr/ d:Hr** " (e.g. mass test)

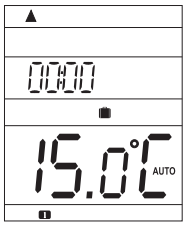
FURTHER FUNCTIONS

HOLIDAY



This function is very useful in the course of holidays, when the house is empty and it is not necessary to change room temperature.
Always set the DATE and HOUR of your return from holiday, e.g. the moment when PH-CJ37 should return to defined program (in AUTO or MANU)!

- select AUTO or MANU mode
- press button
- by pressing +/- H buttons set the date of return from holiday and confirm by pressing i
- set the time of return and again confirm by pressing i
- by pressing +/- T buttons set the temperature, which will be kept throughout your holiday until you come back
- after expiration of approx. 30 second the central units switches to holiday mode



Note: can be set also in a system without any active boiler. All active controllers (sockets) will maintain the same set temperature in the course of your holiday!

! In this mode, buttons are not functional (with the exception of Info, Off and) !
This mode can be cancelled only by pressing button!
This mode cannot be selected in SUMMER mode (constant 3 is set, symbol ☀)!

SHORT-TERM CHANGE OF TEMPERATURE IN AUTO MODE

This function can be used in such case, when present temperature in the room is unsuitable at given moment and has to be changed for a short time, without any change to program.

This function is possible in **AUTO** mode for boiler, by simple pressing +/- T buttons set different temperature than set in the program. The unit PH-CJ37 will maintain this temperature up to further change as defined by program.

RESET

R button should be used only in the case of indefinable error - when pressed, the processor is reset, but all changes made will remain stored in E-EPROM memory!
To reset all the parameters set and the programs defined (programs 3 to 22 will return to factory setting), press Off and R buttons, release R button and then Off button (note RESET displays shortly on the LCD).

ANTI-FREEZE MODE

If the room temperature drops under 3°C, PH-CJ37 will automatically send command to switch the boiler on.
As soon as the temperature increases, it returns back to the mode as set.

CONNECTION OF GST1 MODULE

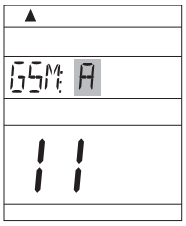
The system can be extended with GSM module - GST1, which provides for remote control of central unit via mobile phone. With using of simple SMS messages it is possible to control heating or obtain information on system condition.
More detailed instruction see GST1 module (the module connection option is selected by CONST 11-13, p.10)

DESCRIPTION OF SETTINGS WHEN GST1 MODULE IS INSTALLED

CORRECT PUTTING INTO OPERATION REQUIRES STRICT OBSERVANCE OF FOLLOWING PROCEDURE!

1. Make installation and setting of central unit according to respective manual.

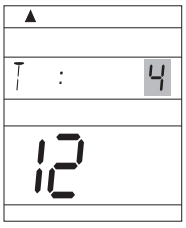
2. Constants 11, 12 and 13 should be set on central unit, namely in following way:



SELECTION OF CONTROL BY GSM MODULE - CONST 11

By pressing +/- T buttons select option **GSM: A** confirm by pressing i↵ .

SETTING THE TELEPHONE NUMBER - CONST 12

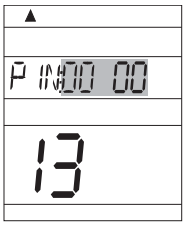


Set the telephone number, in international format (420123456789), **to which SMS messages informing about thermostat condition should be sent**.

Set by pressing +/- T buttons and confirm by i↵ .

The numbers set may be browsed by +/- H buttons.

SETTING THE PIN CODE OF SIM CARD - CONST 13



Set the PIN code of SIM card, which is inserted in GST1 module.

Set by pressing +/- T buttons and confirm by i↵ .

The numbers can be changed by +/- H .

Thanks to this function it is not necessary to remember PIN code for SIM card inserted in the module, which is connected to central unit. After entering PIN code (see below respective procedure) into central unit, connect the module and then connect it to mains. In the course of approx. 3 minutes, the PIN code is sent from central unit to the module and so the module becomes active (to accelerate the activation use Test button on central unit).

3. Inset activated SIM card into GST1 module. SIM card holder is located at rear, open the cover as indicated by the arrow (see p. 2 of the manual for GST1).

4. Interconnect central unit and GST1 module via data cable (included with GST1) and then connect the module via power adapter to 230 V/50 Hz mains (orange LED is flashing)!

5. As soon as the orange diode on GST is alight, test correct connection by pressing Test nbutton on the central unit. One of following messages appears on the display of central unit (the connection is automatically established in 3 minutes):

Signalizes correct connection of the module.

The module is not connected, incorrect connection of the module!

Signalizes correct connection of the module and PIN code setting.

Signalizes correct connection of the module, but incorrect PIN code setting! It is necessary to disconnect the module, RESET central unit and set correct PIN code!

THE WORDING OF SENT MESSAGES

Info PK001	Information on boiler condition
Info HDyyy **Info TSyyy** **Info HTyyy**	Information on the condition of controller; **yyy** is an address (order number) of the controller, in format **001 to 255.** In similar way it is possible to obtain information on the condition of TS sockets and HT units for thermo electrical drives.
Info BP1yyy **Info BSPyyy** **Info BHDyyy** **Info BHTyyy**	Information on the condition of thermostat for floor heating; **yyy** is an address (order number) of the thermostat, in format **001 to 099.** In similar way it is possible to obtain information on the condition of BSP, BHD and BHT units.
Off PK001	Switching the boiler off, function cancellation by means of message Temp xx PK001 (when in AUTO mode, this condition stands up to next change as per defined program)
Off HDyyy **Off TSyyy** **Off HTyyy**	Switching the controller off; **yyy** is an address (order number) of the controller, in format **001 to 255**. Function cancellation by means of message Temp xx Hdyyy (when in AUTO mode, this condition stands up to next change as per defined program). Similar procedure is used for TS sockets and HT units for thermo electrical drives.
Off BP1yyy **Off BSPyyy** **Off BHDyyy** **Off BHTyyy**	Switching off the thermostat for floor heating; **yyy** is an address (order number) of the thermostat, in format 001 to 099. Function cancellation by means of the message Temp xx BP1yyy (when in AUTO mode, this condition stands up to next change as per defined program. Similar procedure is used for BSP,BHD and BHT units.
Temp xx PK001	Change of required temperature (**xx** must be an integer) within the range of admissible maximal and minimal temperatures).
Temp xx HDyyy **Temp xx HDall** **Temp xx HDyyy-yyy**	Change of required temperature for the (xx must be an integer within the range of admissible maximal and minimal temperatures); **yyy** is an address (order number) of the controller, in format 001 to 255. If you want to send the same temperature to all controllers, enter the text **ALL** instead of yyy. If you want to send the same temperature to selected controllers but with consecutive addresses, use for example HD001-004 (required temperature is assigned to the controllers with addresses 1, 2, 3 and 4). *In AUTO mode, this change is short-time, up to next temperature change in the program. In MANU mode, this change is permanent, up to next manual change. (determination/change of mode for controllers - in Info mode on PH-CJ37).* In similar way it is possible to change temperature for TS sockets and HT units for thermo electrical drives. Instead of HD insert the abbreviation for selected group of components: TS or HT.
Temp xx BP1yyy **Temp xx BP1all** **Temp xx BP1yyy-yyy**	Change of required temperature on the thermostat for floor heating (similar meaning as in the case of Hd and TS), **yyy** may range from 001 to 099! If you want to send the same temperature to all thermostats, enter the text ALL instead of yy. If you want to send the same temperature to selected thermostats but with consecutive addresses, use for example bP1 001-004 (required temperature is assigned to BP1s with addresses 1, 2, 3 and 4). *In AUTO mode, this change is short-time, up to next temperature change in the program. In MANU mode, this change is permanent, up to next manual change. (determination/change of mode for bP1 thermostats - in Info mode on PH-CJ37).* In similar way it is possible to change the temperature for BSP, BHD and BHT units. Instead of BP1 insert the abbreviation for selected group of components - BSP, BHD or BHT.
MULTIPLE SMS messages (commands sent to all components in the system)	
Temp xx all	Change of required temperature for all components (**xx** must be an integer within the range of admissible maximal and minimal temperatures). *In AUTO mode, this change is short-time, up to next temperature change in the program. In MANU mode, this change is permanent, up to next manual change.*
off all	Switching all components off (short-term in AUTO mode, permanent in MANU mode).
Holiday xx yy	Setting the holiday (similar as the), **xx** must be an integer within the range of admissible maximal and minimal temperatures and **yy** is number of days. All components will maintain set constant temperature for defined period of time
Holiday off	Cancellation of holiday function
Call	back call

xx = temperature in °C (two-digit number, e.g. 05)

! PAny type of mobile phone can be used for the sending and receiving of return messages!!
If letter size (format) may be adjusted in the phone, always use MEDIUM! size for messages (when three sizes are available) or LARGE (when two sizes are available).

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Requir: xx.x	is required temperature (entered by user)
Act: xx.x	is current temperature in the room
ON **OFF**	heating system on heating system off
Pos xxx%	valve position in per cent, only for controllers (xxx is integer ranging from 0 to 100)
AUTO **MANU**	automatic mode AUTO manual mode MANU
HOLI	holiday mode is active
Sig: x	defines signal strength at the place of module location, **x** are values ranging from 0 to 5: 0..cannot be determined or no signal detected 1..the worst strength 5..the best signal strength
Battery!	signalizes weak battery in central unit
PK001 **HDyyy TSyyy HTyyy** **BP1yyy BSPyyy** **BHDyyy BHTyyy**	identification of the appliance; **yyy** is address (order number) of the appliance
Multiple command was sent	iinformation return message, when multiple command was sent for all controllers/thermo-sockets (e.g. **Temp 18 HDall**)
No akcept	incorrect SMS message or communication error

xx.x = temperature in °C

RETURN MESSAGES ARE SENT IN 3 MINUTES!

Note: If min./max. room temperature is exceeded (as set by CONST1 and 2, see the manual for PH-CJ37, p. 9), "WARNING" SMS message is sent immediately.

Info: When prepaid card is used, it is necessary to make a paid call once three months.
This call is made automatically (once 80 days at the time between 16 and 21 o'clock) to the number entered in central unit (CONST 12) and after 20 s, the call is terminated automatically.
By means of SMS message "**Call**" you can do it sooner.

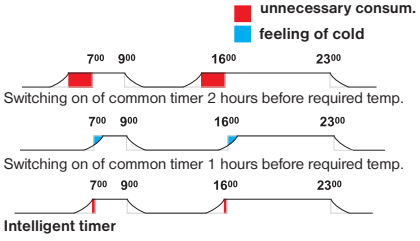
TECHNICAL PARAMETERS

Power	2x1,5V alkali pencil batteries AA
Communication type	two-way
Frequency	433,92 MHz
Range	300 m (in open area), 35 m (in built-up area)
Number of temperature changes	6 changes of temperature for each day
Hysteresis	0,1 to 1,5°C in steps of 0,1°C
Minimal programmable time	10 minut
Range of possible temperatures	3 to 39°C
Temperature setting	step of 0,5°C
Minimal step of indication	0,1°C
Measurement accuracy	±0,5°C
Battery life	1 to 3 years according to type
Protection	IP20
Operating temperature	0°C to +40°C

EXPLANATION OF PZT FUNCTION(CONST 3)

PZT function (early switching the heating off) guarantees required temperature at required time.

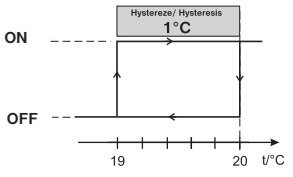
In two days of operation, PH-CJ37 establishes thermal constants of the room and then it switches the heating on automatically at required time in advance. The period of premature switching-on is automatically limited to 2 hours.



EXPLANATION OF HYSTERESIS (CONST 5)

Difference between required and real temperature.

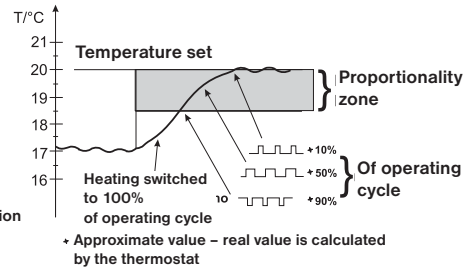
The hysteresis may be set in the range from 0.1 to 1.5°C. If the hysteresis is set to 1°C and required temperature to 20°C, the thermostat will switch off at 20°C and again switch on at 19°C (see the diagram).

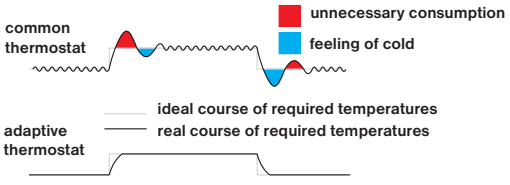


EXPLANATION OF PI REGULATION (CONST 6,7,8)

The principle of PI regulation lies in the comparison of real room temperature with required temperature.

Selection of Fce 6: when setting time interval, it is necessary to consider thermal inertia of respective room. Optimal setting is usually 10 to 5 minutes. However if frequent temperature fluctuations occur in the room, we recommend to select a shorter time interval. Proportionality zone defined the commencement of PI regulation (Fce 8).





ES DECLARATION OF COMPLIANCE

We, ELEKTROBOCK CZ s.r.o., herewith declare that our product PH-CJ37 is in compliance with principal requirements and further respective stipulations of the directive 1999/5/ES.
Issued: 1.09.2007

Send the central unit for guarantee and after-guarantee service to manufacturer's address.

WARRANTY CERTIFICATE (a 2-year warranty is granted for the product)	
Product number:	Date of sale:
	Shop stamp:
Checked by:	

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MADE IN CZECH REPUBLIC

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