Service instructions for room panel

GA03HA - 01

Operating with heating regulator

Programme version 01a

USER MANUAL

We request that users carefully study applicable Instructions before connecting and starting up any of our products. Should any doubts arise, please contact our company between 8 a.m. and 4 p.m.

Table of contents

1.   Introduction

1.1. Graphic symbols

Symbols are intended to indicate and highlight the importance of text warning about dangerous situations, and have the following graphic forms:

Warning

This symbol is used when it is necessary to follow the sequence of operations as described in the instructions. Any error or failure to follow the description may result in damage or destruction of the unit.

Important

This symbol indicates information of particular importance.
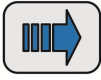
Reference

This symbol indicates additional information in a chapter.

1.2. LCD display and keyboard functions

DIGITAL COLD & HEAT   GA03HA

Panel-controller connection

Power

ALARM

00:00   06:00   12:00   18:00   24:00

Daily settings

Weekly settings

Daytime temperature

ON / OFF

Night time temperature

Increase maximum temperature one step

Change work mode

Direction keys

Preview work of devices attached to boiler

Help menu

Exit without changes

Panel menu / Confirm changes
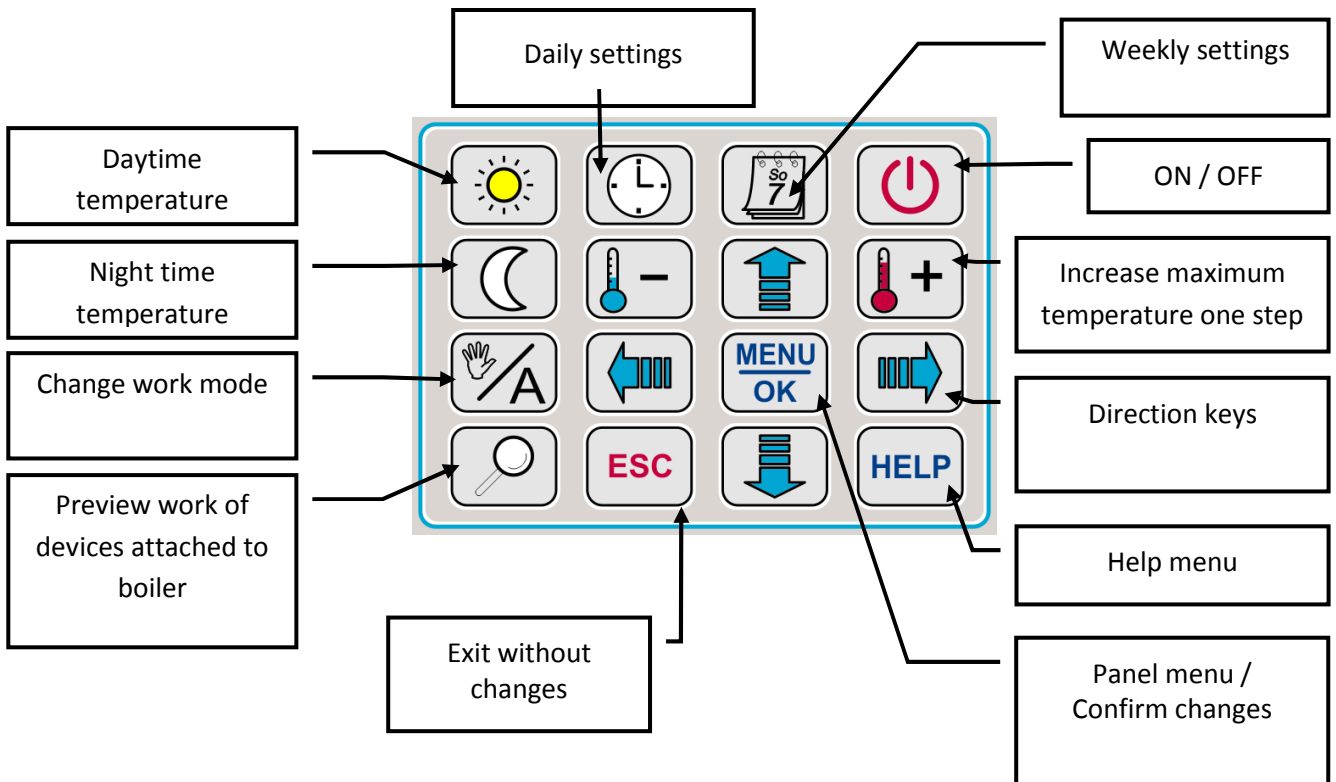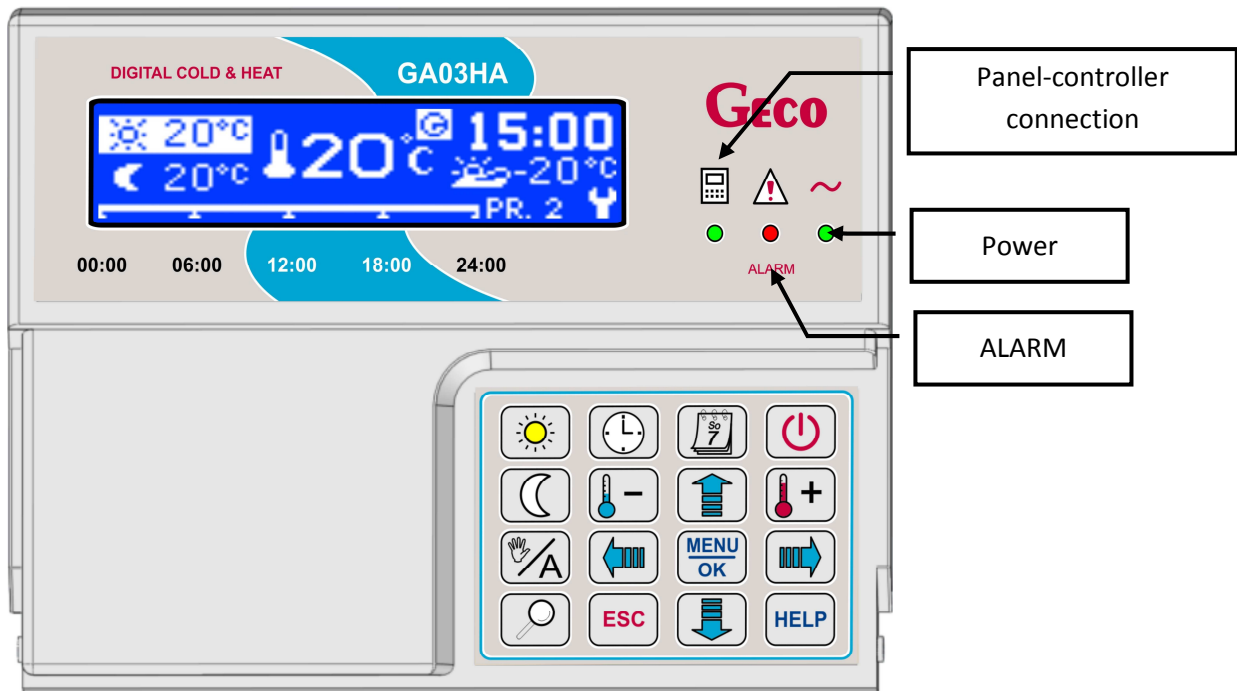
Button	Description	Operation
(power icon)	Turn panel on/off	Displays main screen
(hand/A icon)	Change work mode	Controller switches from daily temperature setting to fixed temperature setting, or vice versa
(sun icon)	Daytime temperature	Change the 'daytime' temperature setting for the current active programme – change in heating mode
(moon icon)	Night time temperature	Change the 'night time' temperature setting for the current active programme – change in heating mode
(magnifier icon)	Preview controller work	Screen displays operation of devices, current measured temperature and accompanying functions
(clock icon)	Fast access to daily settings	Daily settings screen is shown
(calendar icon)	Fast access to weekly settings	Weekly settings screen is shown
MENU OK	Enter panel menu. Confirm changes	Menu screen is shown. Changes are confirmed
ESC	Exit without changes	Exit to previous screen or higher level menu
HELP	Access help menu	Access controller help menu
(thermometer −)	Minimum temperature	Decrease maximum temperature one step
(thermometer +)	Maximum temperature	Increase maximum temperature one step
(up arrow)	Scroll up	Scroll one line up. Increase a value by one step
(down arrow)	Scroll down	Scroll one line down. Decrease a value by one step
(left arrow)	Left direction key	Move to the next column or position on the left
(right arrow)	Right direction key	Move to the next column or position on the right

2.   Overview

The GA03HA-01 room panel is a microprocessor-based device manufactured using Surface Mount Technology (SMT).

GECO heating controllers GH21, GH22, GH23 and GH24 have been upgraded to allow full communication with the GA03HA-01 room panel, enabling comfortable control of the boiler from the home. Using the room panel as an interface with the controller mounted on the boiler makes the controller distinctly more convenient to use. The GA03HA-01 room panel has a built in sensor to measure the room temperature.

Connection to the GA03HA-01 room panel allows:

- Changing boiler temperature

- Changing hot water temperature

- Previewing the work of the boiler

- Previewing the work of devices (Fan, fuel feeder, central heating pump, hot water pump, and mixer pump)

- Overview of all measured temperatures

- Overview of information about all boiler alarms

3.   Location and installation

The panel is designed to be wall mounted, using the mounting frame. The frame must be screwed to the wall, and then the panel can be snapped into the frame. Please note that the panel must be installed in a position which will allow a temperature reading applicable to the entire area to be heated.

☞ *Installing the panel close to windows, radiators, or in places exposed to strong sunlight or draughts will result in inaccurate readings.*

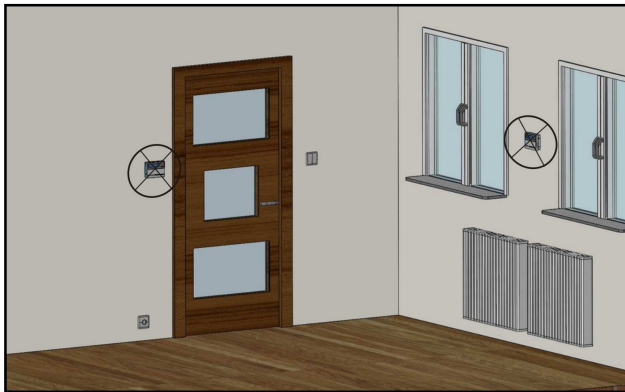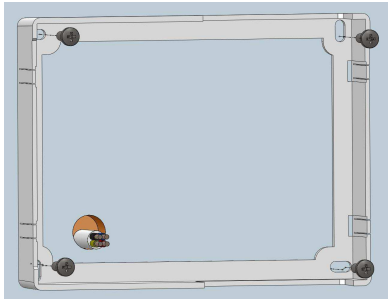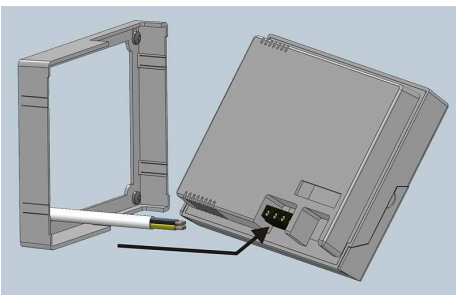**Fig. 1** Examples of correct and incorrect locations for the GA03HA room panel

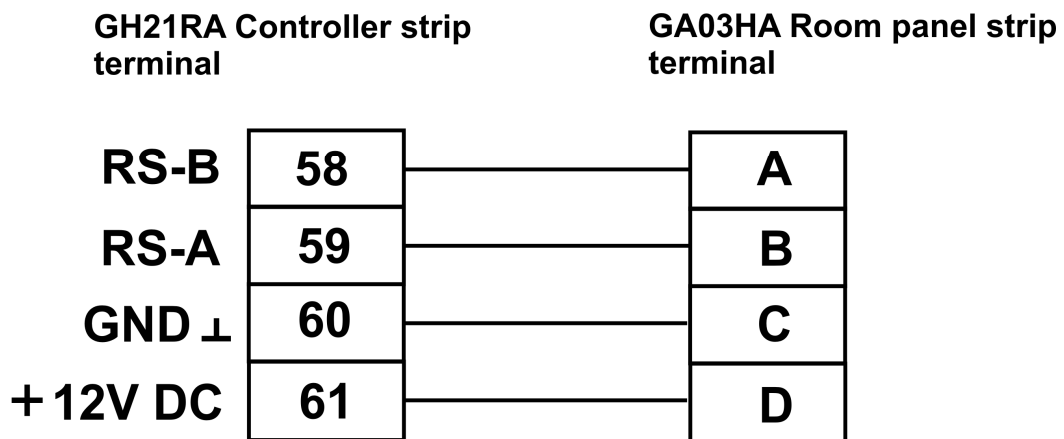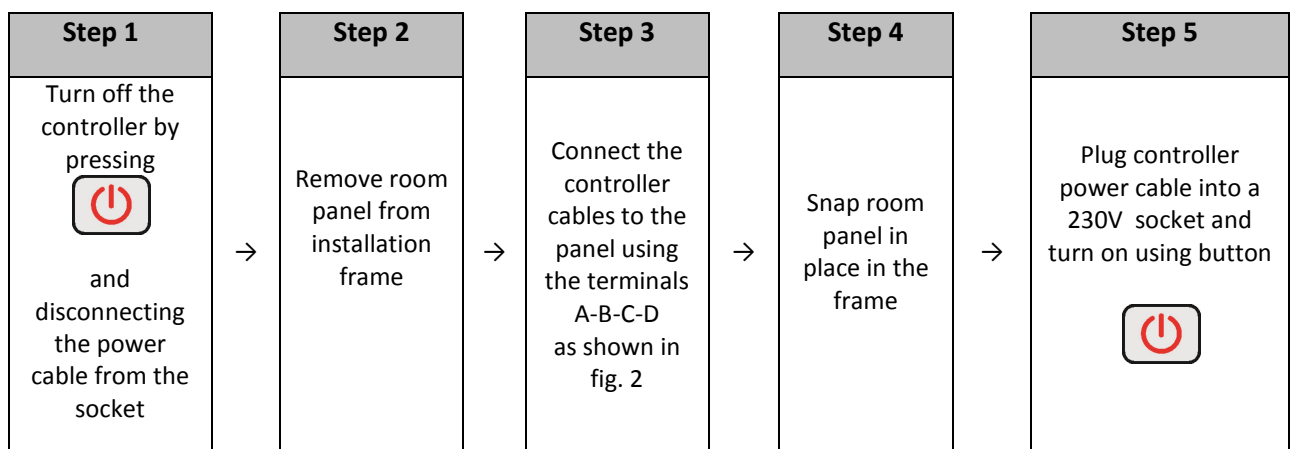**Installing the GA03HA-01 room panel on the wall**

Step 1	Step 2	Step 3
Fit the installation frame to the wall ('Do Góry' on the inside of the frame indicates the top)	Connect the transmission cable to the panel, according to Fig.2	Snap the room panel into place on the installation frame

4.   Connecting the controller to the boiler

The connection between the controller and the room panel is a standard RS485 and requires four lines (two lines for RS-A and RS-B, and two to power the panel - +12v and GND).

The panel does not require a separate power source such as a switching power supply. It is powered by a safe 12V, provided via a signal from the boiler controller. The terminal to which the cable should be connected is on the back of the panel. A UTP computer cable can be used. A single cable (RS-A, RS-B) may be used as the signal line, and the rest to the power supply.

Below is a detailed description for connecting the room panel to the controller. Poniżej przedstawiony został dokładny opis podłączenia panelu z regulatorem. A detailed description of connection at the controller end can be found in the controller instruction manual, depending on the version:

Step 1		Step 2		Step 3		Step 4		Step 5
Turn off the controller by pressing ⏻ and disconnecting the power cable from the socket	→	Remove room panel from installation frame	→	Connect the controller cables to the panel using the terminals A-B-C-D as shown in fig. 2	→	Snap room panel in place in the frame	→	Plug controller power cable into a 230V socket and turn on using button ⏻

GH21RA Controller strip terminal

GA03HA Room panel strip terminal

RS-B	58	———	A
RS-A	59	———	B
GND ⊥	60	———	C
+12V DC	61	———	D

Rys. 2 Schematic diagram of connection of GA03HA-01 room panel with boiler controller.

☞   **Correct connection between the room panel and controller is indicated by a green light behind the icon** ▤

If the boiler controller is connected correctly to the GA03HA-01 room panel, this will be detected automatically by the controller and activation does not require any additional steps or settings from the user. Once connected, the boiler controller operates according to the room panel settings. Disconnection or damage to the cable connecting the panel and the controller will result in the light behind the icon ▦ on the room panel, as well as the loss of the icons ▦ on the controller main screen when the power is disconnected for 15 seconds.

5.   „Quick start" Function

When the room panel is connected to the boiler controller, the device is ready for use. In order to use „Quick start" for the GA03HA-01 room panel, follow the steps below:

1.   Connect equipment to the boiler controller ($\Rightarrow$ section 4, page 8)
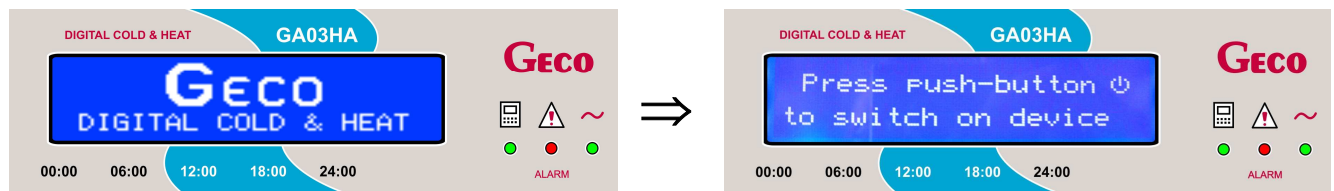
2.   Switch on using the button. The following screen will appear:
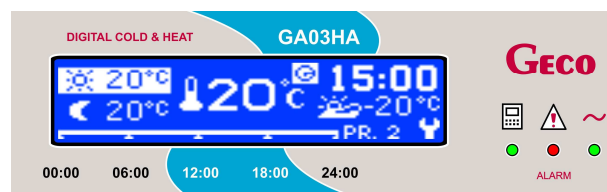
Tabela 1. Room panel factory settings

Description	Range	Factory setting
Daytime temperature (comfort)	7^0C - 30^0C	21^0C
Night time temperature (economy)	7^0C - 30^0C	17^0C
Daily settings	1 - 9	Programme 3
Weekly settings	Monday-Sunday	Programme 2

6.   Operating GA03HA-01

6.1. Controller main screen

After connecting the room panel to the controller using the cable, and pressing the button ⏻, the room panel screen will light up. The following information will be displayed:

Timer mode

Current measured temperature

Time and date

Room temperature
Information about set temp.

Daily setting progress indicator

Daily programme number

Boiler work mode
Automatic
Maintain
Manual
Firing up

Room panel signal

Outside temperature

⇓

This field is activated after connecting the outside temperature sensor to the boiler
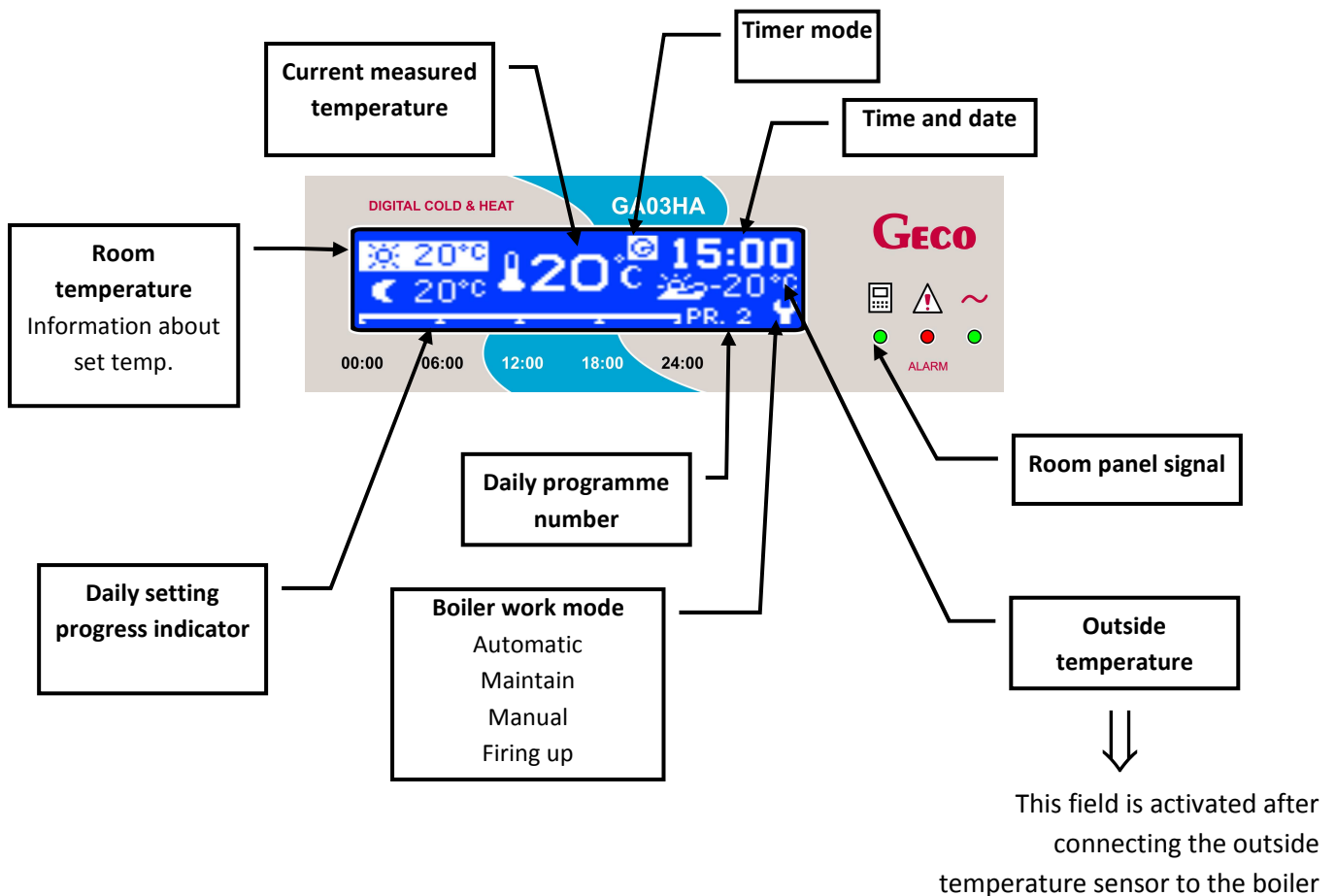
6.2. Fast access keys

The GA03HA-01 room panel has the following fast access keys:

🔍 , ✋/A , ☀ , 🌙 , 🕐 , 📅 , HELP)

These keys allow, amongst other things, easy and intuitive previews of current temperature measured by the boiler controller, changes to the controller mode, help information, etc.

Information displayed about the temperatures and operation of devices will depend on the installation configuration.

6.2.1. Preview of controller operations

After pressing the button [🔍] the screen displays information about the current operation of devices connected to the boiler. na ekranie pojawi się informacja o aktualnie pracujących urządzeniach pracujących na kotle. Lit LEDs indicate working devices. Access to preview of controller operations is also possible via the menu (4).

The selected device is indicated by cursors. There are two wide cursors on each side of the device symbol, and a description of the device is displayed at the bottom of the screen.

The devices displayed depends on the configuration of the heating system.

Fuel feeder		Central heating pump
Fan		Hot water pump
Name of selected device		
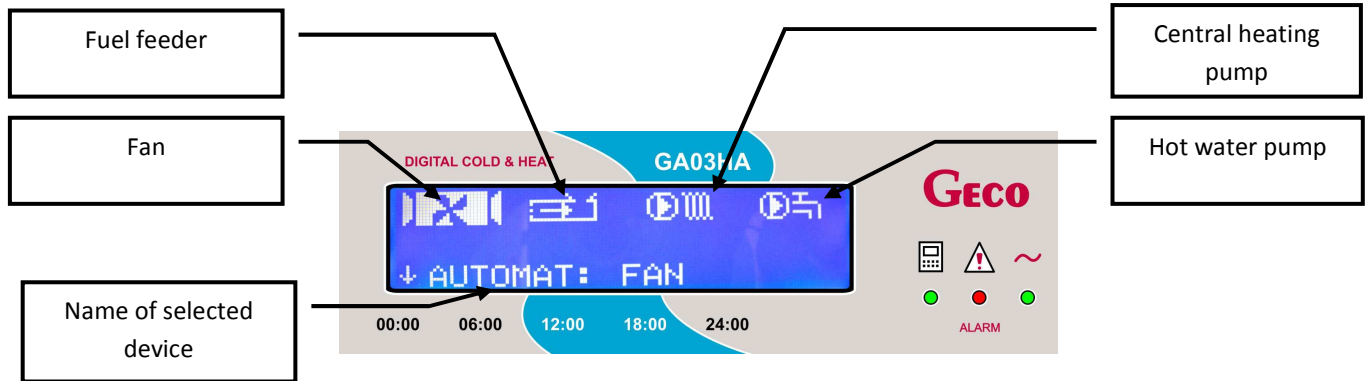
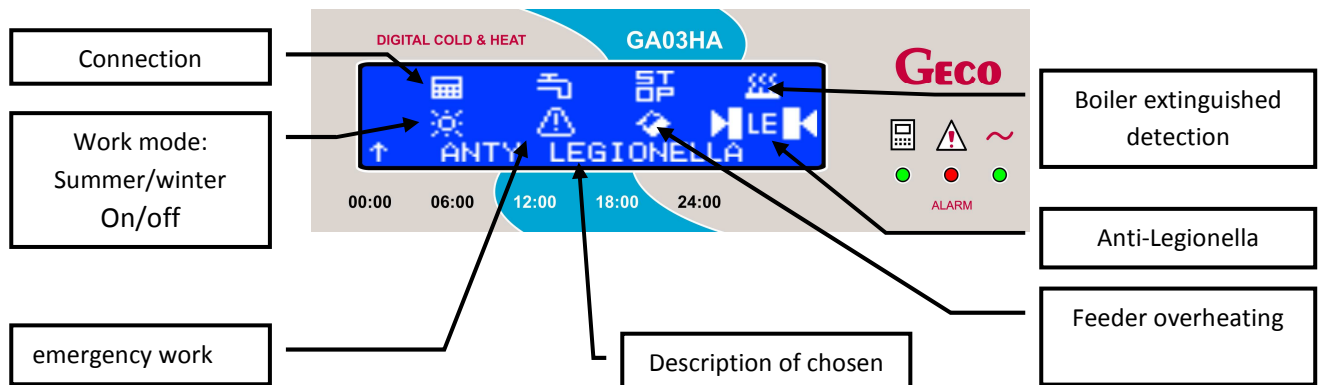Pressing the button [⬇] takes you to the next screen – a preview of the temperatures measured by the boiler.

Cursors indicate the selected temperature (there are two wide cursors on each side of the temperature and icon).

The temperature displayed depends on the configuration of the heating system. Move the cursors between the temperatures using the keys [⬅] and [➡]. A description of the temperature indicated by the cursors is displayed at the bottom of the screen.

Feeder temperature		Hot water temperature
Boiler temperature		Feeder operation time
Description of temperature		
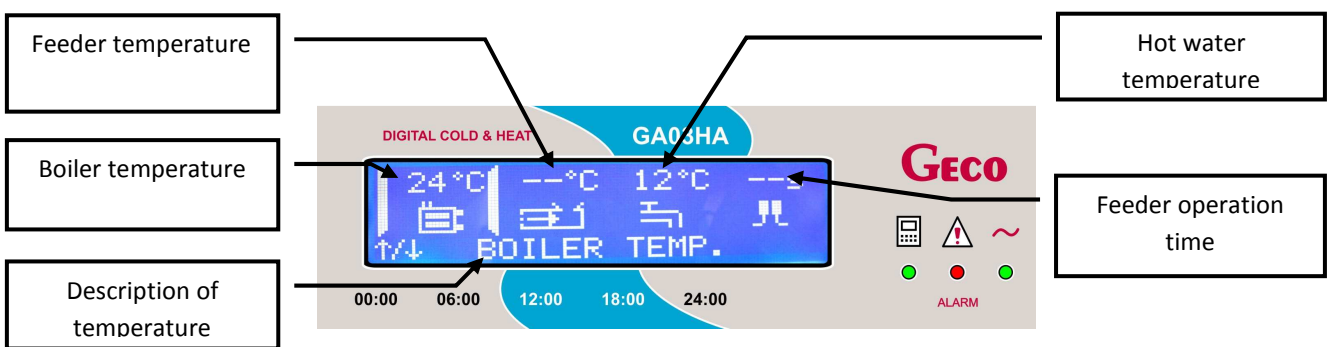
Press the button [⬆] to return to the previous screen, and use the button [⬇] to proceed to the next screen: preview of associated controller functions.

| Hot water priority | | Anti-stop function |

Connection	
Work mode: Summer/winter On/off	Boiler extinguished detection
emergency work	Anti-Legionella
	Feeder overheating
	Description of chosen

Press the button [icon] to return to the previous screen.

Exit to the main screen by pressing the button **ESC** .

6.2.2. Change work mode

Use this button [icon] to change the controller work mode. Access to work mode changes is also possible via the menu (1.3).

If the controller was already in automatic mode, it goes to manual mode. This is indicated by displaying a constant temperature on the main screen. The programme number disappears and the hourly heating cycle is not distinguished (the bar at the bottom of the screen indicates the heating cycle).

If the controller is already in manual mode, it enters automatic mode. This is indicated by displaying two temperatures: "day" and "night". Hourly heating cycles (on the bar at the bottom of the screen) and programme number are indicated.

Daytime mode is set	Night time mode is set
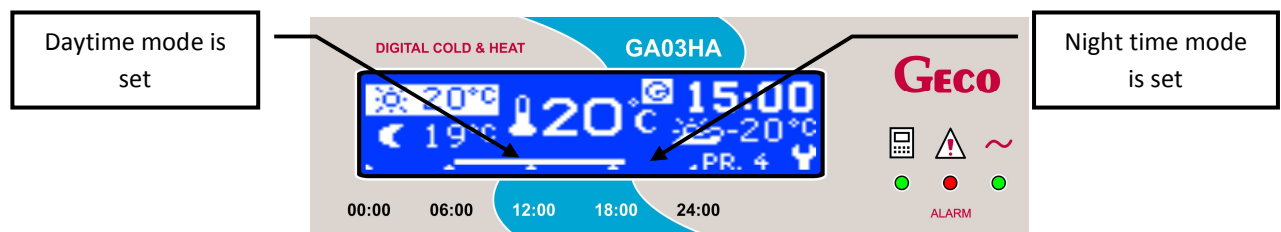
It is possible to edit selected temperatures in both automatic and manual modes, using the buttons [icon] and [icon]. Changes do not need to be confirmed.

In automatic mode, changes to 'daytime' or 'night time' cycle temperatures are signalled by a clock sign on the main screen of the controller. The next time that work cycles are switched, the change ceases to be active and the clock symbol disappears and the controller activates the chosen programme.

6.2.3. Heating mode

Activation of the heating mode is indicated by a light showing the corresponding temperature. Change the heating mode to the opposite of what is displayed on the controller and activate the programme by pressing the buttons ⬜ or ⬜. The change applies until the end of the next work cycle (to the change between 'daytime' and 'night time', or vice versa).

6.2.4. Daily settings

Access to daily settings is possible by using the button ⬜ and via the menu (1.1.2). Nine daily programmes are available. The first two cannot be edited, but the remaining seven can be set by the user according to requirements.
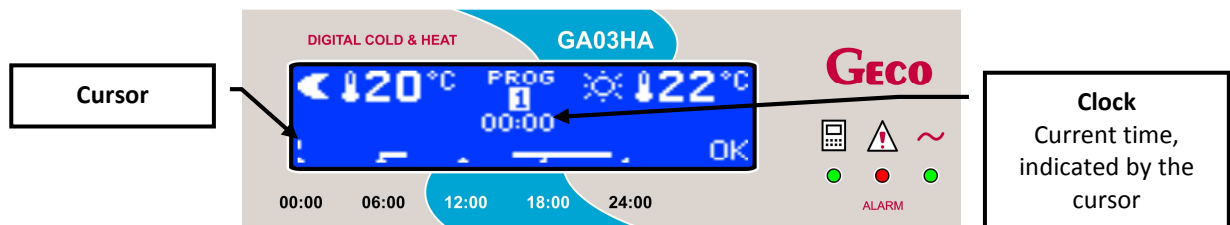
Use the buttons ⬜ or ⬜ to select the item for editing (programme number or „daytime" or „night time" temperature). The item for editing is then highlighted. To change the values of the selected element, press ⬜ or ⬜.

Move the time settings bar using the buttons ⬜ or ⬜. The cursor moves through individual time units of 15 minutes, but the clock determines the exact position of the cursor. Editing takes into account the division between daytime and night time heating modes, and is activated by pressing ⬜ or ⬜. Activation of the daytime heating mode for the selected time is indicated by lit horizontal bar for the corresponding part of the screen, and activation of the night time mode is indicated by an absence of this bar.

Confirm changes by pressing the button ⬜.

Return to the previous level without activating changes by pressing the button ⬜. If daily settings was entered via the main screen using the fast access key, the panel will return directly to the main screen.

6.2.5. Weekly settings

Access to weekly settings is possible by pressing the button [So 7] and also via the menu (1.1.1). Here you can set programmes for specific days of the week. The user can choose a different programme for each day of the week.
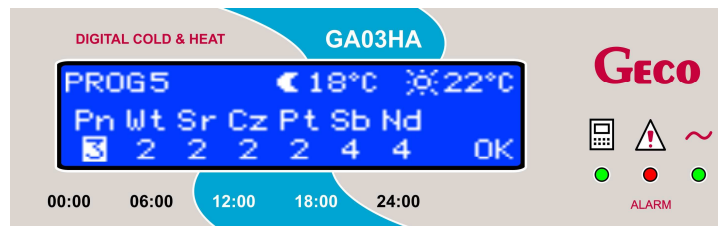
Move between successive days of the week while storing current settings by pressing the button [MENU OK],

and activate programme changes by using the buttons [+] or [−].

Displayed heating temperatures (day and night) for the programme are indicated by the cursor. Heating temperatures change according to changes in the programme. The transition between days of the week is looped.

Return to the previous level without activating changes by pressing [ESC]. If daily settings was entered via the main screen using the fast access key, the panel will return directly to the main screen.

6.2.6. HELP

Enter the help menu from the main screen by pressing the button [HELP]. This displays data for the technician, and a description of all icons displayed on the controller screen.

Scroll through the help menu using the keys [↑] or [↓].

Access to a selected item on the menu, indicated by a light, is available by pressing the button [MENU OK].

Service data contains information about the controller model, and technician contact details:

The help menu contains a list of text descriptions of all icons:

Pressing the button HELP ***while an alarm is active displays service data. The screen will display information including room panel model, programme number, and telephone contact information for the manufacturer or technician.***

6.3. GA03HA-01room panel menu

Below is a schematic diagram of the room panel menu

MENU

Panel setting
2

User setting
1

PA
PA
PANELU

Work history
3

Work preview
4

Time setting
1.1

Language selection
2.1

Alarms and warnings
3.1

Weekly setting
1.1.1

Time and date
2.2

Boiler operation time
3.2

Daily setting
1.1.2

Time operating in safe mode
3.3

Stabilization factor
1.1.3.

Number of times maximum
temperature has been exceeded
3.4

Edit temperature
1.2

Power failure
3.5

Work mode
1.3

Automatic mode
1.3.1

Manual mode
1.3.2

Temperature stabilization
1.4

CH Pump blocade
1.4.1

Standard stabilization
1.4.2

Factory settings
1.5

Enter the room the possible

$\boxed{\uparrow}$ or

panel menu by pressing the button $\boxed{\text{MENU OK}}$. The screen will display items to choose from. Scroll through the MENU using the buttons $\boxed{\downarrow}$. The submenu selected is highlighted.

Enter the selected submenu by pressing the button [MENU OK], or return to the previous level by pressing [ESC].

6.4. User settings

In the user settings you can set the time settings, edit the selected temperature according to heating configuration, change work mode, change temperature regulation and restore factory settings.

Scroll through the user menu using the buttons [↑] or [↓].

6.4.1. Time settings

The user can choose weekly or daily time settings, only after selecting automatic mode on the panel. Scroll between weekly and daily using the keys [↑] or [↓]. The current option is highlighted, and can be accessed by pressing the button [MENU OK]. Return to a higher level menu using the button [ESC].

⟹ *A detailed description of daily and weekly settings is available in points 6.2.4 and 6.2.5, in the fast access keys description*

Stabilization factor adjustment.

Stabilization factor parameter are using to stabilize room temperature in heating space by regulate set temperature in the boiler. The range of stabilization factor is from 1 to 6.
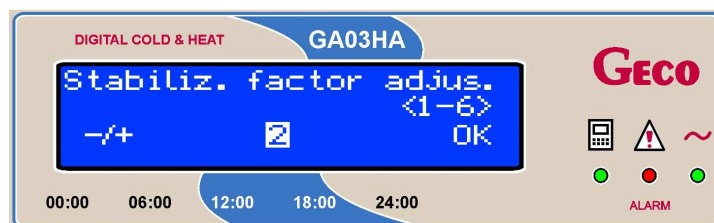
6.4.2. Edit temperature

By entering this submenu, it is possible to choose the temperature value which can be set. Access to temperatures depends on the controller heating system configuration. If the controller is set, for example, to the configuration **Boiler+Heating+Hot Water**, there will be access to two temperatures:

The value of the boiler temperature, highlighted on the screen, can be set by the user within the range of temperatures shown in brackets on the right hand side of the screen.
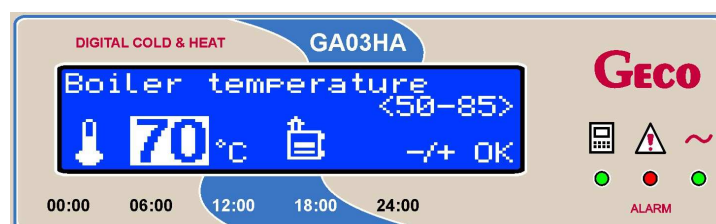
The same applies to changes of hot water temperature:
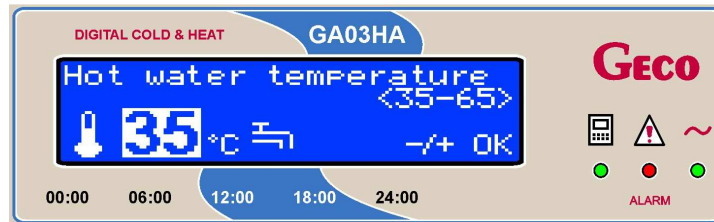
Change temperature values by using the buttons [🌡+] or [🌡−]. Accept the new temperature value by pressing the key [MENU OK], or return to a higher level menu without saving, by pressing the button [ESC].

6.4.3. Work mode

Here, the user can choose automatic or manual work modes. The symbol „**V**" indicates the chosen work mode.

If you want to change the work mode, use the keys [⬆] or [⬇] and the selected work mode will be highlighted. The selected mode will appear on the screen after pressing the button [MENU OK]. If the previous mode was automatic and you would like to select manual mode, the screen displays the questions:

Accept using the button [MENU OK]. This will change the mode to manual, and the symbol „**V**" is displayed next to work mode. If you do not want to accept the change, use the button [ESC] to return to the previous setting and return to the previous menu.

The same procedure applies to changing from manual mode to automatic mode
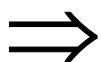
⟹   ***A description of changes to work mode is available in point 6.2.2 in the description of „fast access keys".***

6.4.4. Temperature stablization

In order to ensure the effective regulation of room temperature, the GA03HA room panel offers the following regulation settings:

The chosen regulation setting is indicated with the symbol „**V**".

Stabilize temperature by CH pump blocade

The temperature is regulate by panel which blocke CH pump when temperature is too low in the boiler or temperature inside the room is too high.

Standard stabilize temperature by stabilization factor.

Room panel adjust set temperature on the controller which depend of stabilization parameter (1-6) and actual temperature in room.

If you would like to change the temperature regulation, select one using the keys [↑] or [↓] and the selected type of regulation will be highlighted. Press the button [MENU OK] to display the chosen regulation on the screen. If the previous regulation was standard and you would like to select adaptive regulation, the screen displays the question:
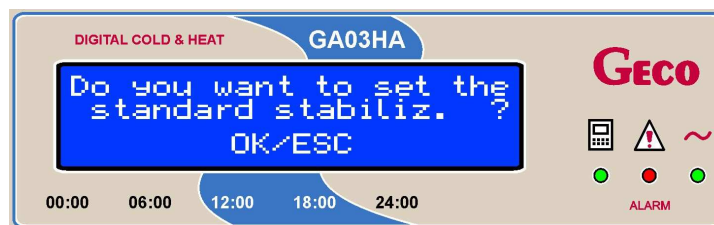
Accept the change using the button [MENU OK]. This will change the regulated to adaptive, and the symbol „**V**" is displayed next to adaptive regulation. If you do not want to accept the change, use the button [ESC] to return to the previous setting and return to the previous menu.

The same procedure applies to changing from adaptive regulation to standard regulation.

blokady pompy CO.

6.4.5. Factory settings

To return to factory settings when in user settings, choose the position „factory settings" using the buttons [↑] or [↓], and press [MENU OK]. The screen will display the question:
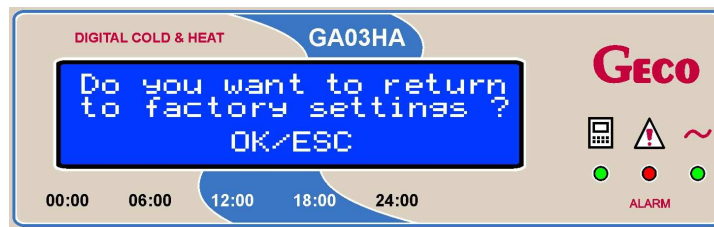
Accept changes by pressing [MENU OK] to return to factory settings. To exit without saving, press [ESC] to return to previous settings, and press the button again to return to the previous menu.

Returning to factory settings does not change the language. The panel returns to factory settings in the same language version that was set in the previous function.

6.5. Settings panel

In the settings panel, the user can set the language according to preference, and edit the time and date. Select your chosen option using [↑] or [↓]. The selected option is highlighted, and can be accessed by pressing the button [MENU OK].

6.5.1. Choose language

In order to set the room panel language, the user panel must be set in the position „language selection", and then accessed using the key [MENU OK] . The screen will display a number of available langauges:

Switch between languages using the keys [↑] or [↓]. To make a change, scroll to the required language, then press the button [MENU OK] and the choice will be displayed on the screen. If the previous language setting was Polish and you would like to choose English, the screen will display the question:
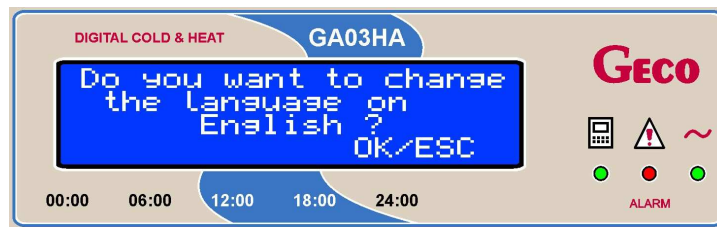
Accept the change to the room panel language by pressing [MENU OK]. To exit without saving changes, press [ESC] to return to the previous setting, and press again to return to the previous menu.

6.5.2. Time and date

To set the time and date, choose the position „Time and date", and confirm by pressing the button [MENU OK]. The screen now displays the fields for editing:

The current value for editing will be highlighted, and the value can be changed using the keys [+] or [−]. To switch between fields for editing (hour, minute, day, month, year) and to accept changes, press the button [MENU OK]. Exit without saving using the button [ESC] to return to previous settings, then press again to return to the previous menu.

6.6. Operation record

The parameters for the current operation of the controller are stored here.
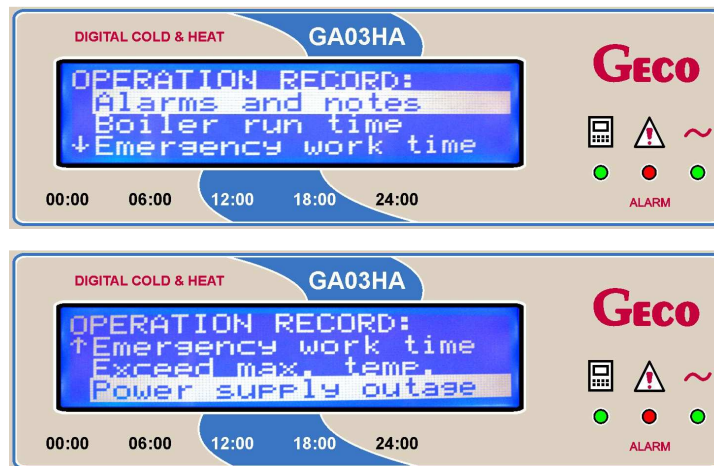
Scroll between positions on the menu using the keys [↑] or [↓], and select a highlighted option by pressing the button [MENU OK].

6.6.1. Alarms and warnings

In this menu, the user can preview the seven most recent alarms and warnings. If more than seven have been recorded, the latest information overwrites earlier data. Information is displayed in order from the most recent (first position) to the oldest (last position). Alarms are shown by AL XX, where XX is the alarm number. Warnings are indicated by UW XX, where XX is the warning number.
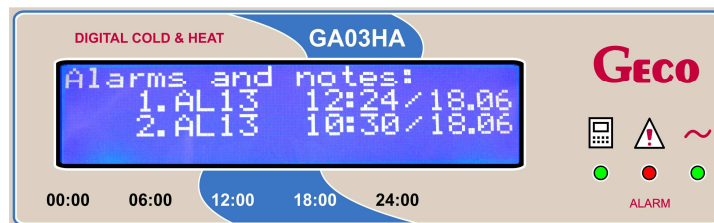
Scroll between successive alarms using the keys [↑] or [↓]. Return to the previous menu using the button [ESC].

6.6.2. Boiler working time

The user can access an overview of boiler working time in 'HEATING' and 'SUSTAIN' modes, registered by the controller. Boiler working time in both modes is displayed in hours.

Exit to the previous menu using the button **ESC**.

6.6.3. Time operating in safe mode

In this place it is possible to see the number of hours in which the controller worked in safe mode.
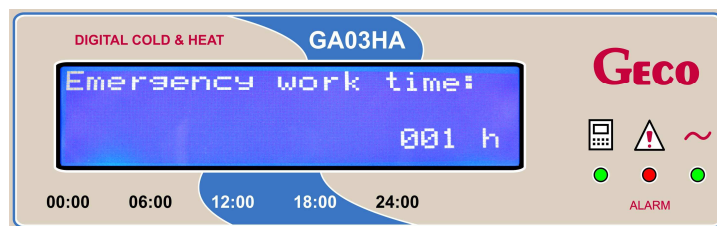
To exit to the previous menu, press **ESC**.

6.6.4. Number of times maximum temperature has been exceeded

Information about the number of time that the boiler has exceeded the maximum temperature during controller operation is stored here.
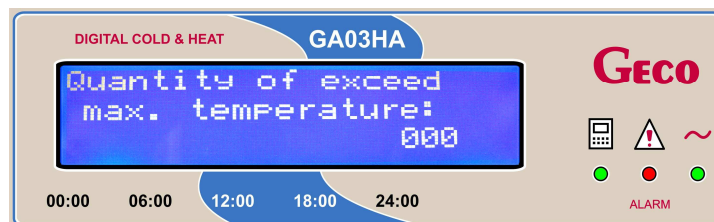
To exit to the previous menu, press **ESC**.

6.6.5. Power failure

This menu shows an overview of the number of power failures which have occured during controller operation.

Return to the previous menu by pressing the key ESC .

6.7. Operation preview

⟹   ***A detailed description of controller equipment preview, the temperatures indicated by these devices and active controller operations are in point 6.2.1 in the section „fast access key".***

7.   Types of alarms and warnings

In the case of any kind of boiler controller warning or alarm, this information will be displayed on both the controller and the room panel. The range of alarms and warnings displayed depends on the type of controller operating with the boiler, because the type of controller has a significant effect on the types of alarms and warnings displayed on the screens of the controller and connected room panel. The same alarm or

warning will be displayed on the controller and the room panel, but may differ in the number of characters displayed in the description, but the information provided will be the same.

When any kind of warning or alarm appears on the room panel screen, it is indicated by an audible signal and red LED, which will flash until the alarm or warning is attended to.

Exiting an alarm is only possible by turning off the controller using the button [⏻].
A warning will not stop the controller from operating, but an alarm will.
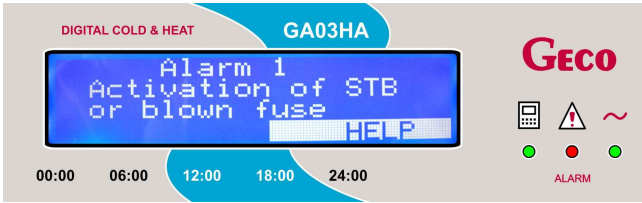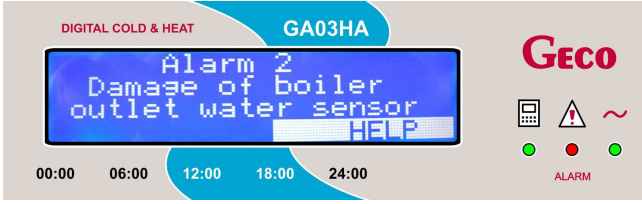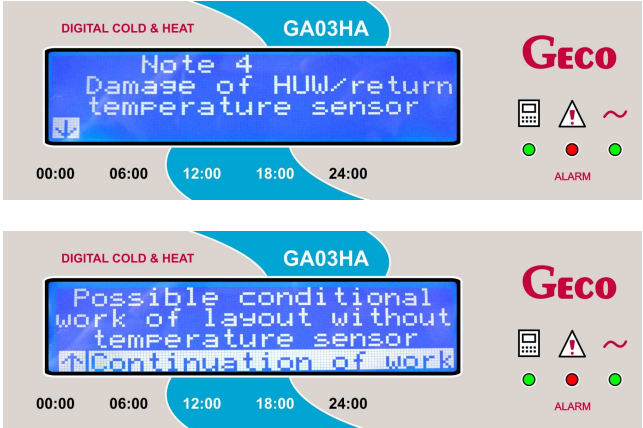
From the warning screen, return to the previous screen by pressing the button [ESC].
In the case of an alarm resulting from damage to a sensor which may have a direct impact on the safe operation of the boiler, the user can choose to change the system configuration and continue operation without this sensor. This decision must be confirmed by pressing the button [MENU OK].
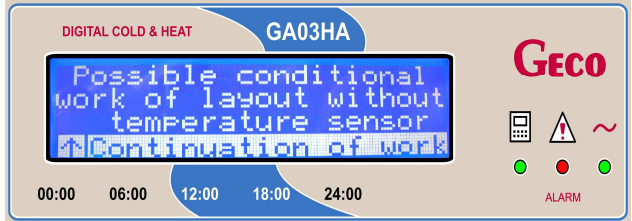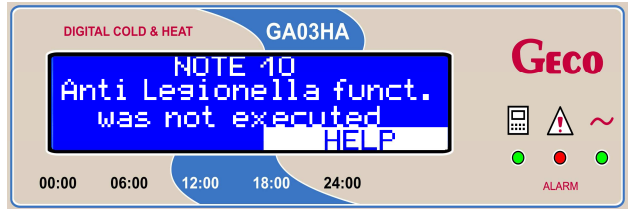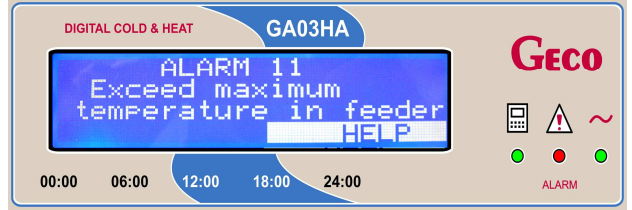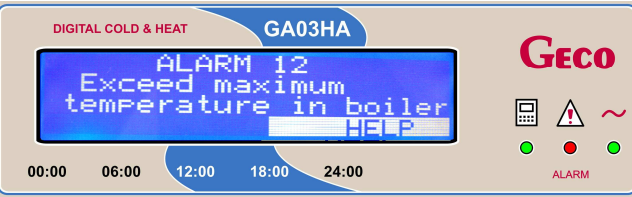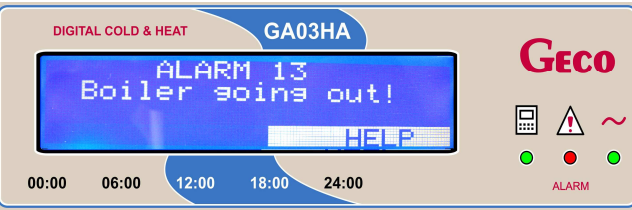
On pressing [HELP], the help menu is displayed and the audible alarm is temporarily turned off.

Number	Description	Screen
ALARM 1	Temperature limiter activated or fuse tripped (the button HELP – goes to technician data, controller operation is blocked)	
ALARM 2	Damage to temperature sensor for water flowing from boiler (the button HELP – goes to technician data, controller operation is blocked)	
ALARM 3	Damage to feeder temperature sensor When the alarm is active, using the HELP button displays technician data, and the up and down arrows allow switching between the two main screens. During the alarm the controller is locked, but 'work without sensor' can be selected from the controller menu.	

WARNING 4	**Damage to sensor for hot water temperature / water returning to boiler** When the warning is active, using the HELP button displays technician data, and the up and down arrows allow switching between the two main screens. During the warning, the controller switches automatically to work without the hot water/returning water function.	
ALARM 4	**Damage to sensor for hot water temperature / water returning to boiler** Using the HELP button shows technician date, and the controller is blocked.	
WARNING 7	**Damage to fuel temperature sensor** Use the HELP button when this warning is activated, and the up and down arrows will allow switching between the two main screens. During this warning, the controller switches automatically to operate without fuel temperature sensor. Exit is possible using the ESC button.	

ALARM 9	Fuel feeder not rotating/reed relay broken (During this alarm, technician data is displayed, and the up and down arrows allow switching between the two main screens During this alarm the controller is blocked, but it is possible to move to 'operate without kontaktronu by chosing „continue operating" from the user menu)	DIGITAL COLD & HEAT GA03HA ALARM 9 No feeder rotation/ Damage of reed relay! 00:00 06:00 12:00 18:00 24:00 ALARM DIGITAL COLD & HEAT GA03HA Possible conditional work of layout without temperature sensor Continuation of work 00:00 06:00 12:00 18:00 24:00 ALARM
WARNING 10	Anti-Legionella function not performed (The HELP button displays technician data, and the Anti-Legionella function is switched off)	DIGITAL COLD & HEAT GA03HA NOTE 10 Anti Legionella funct. was not executed HELP 00:00 06:00 12:00 18:00 24:00 ALARM
ALARM 11	Maximum feeder temperature exceeded The controller is disabled during this alarm, and an alarm message is displayed. (Using the HELP button displays technician data).	DIGITAL COLD & HEAT GA03HA ALARM 11 Exceed maximum temperature in feeder HELP 00:00 06:00 12:00 18:00 24:00 ALARM
ALARM 12	Overheating boiler The controller is disabled during this alarm, and an alarm message is displayed. When the temperature in the boiler drops to 4 below the alarm activation level, the controller continues to operate.	DIGITAL COLD & HEAT GA03HA ALARM 12 Exceed maximum temperature in boiler HELP 00:00 06:00 12:00 18:00 24:00 ALARM
ALARM 13	Boiler extinguished The controller is disabled during this alarm, and an alarm message is displayed. (Using the HELP button displays technician data).	DIGITAL COLD & HEAT GA03HA ALARM 13 Boiler going out! HELP 00:00 06:00 12:00 18:00 24:00 ALARM

ALARM 14	Fuel extinguished (subject to boiler regulation) The controller is disabled during this alarm, and an alarm message is displayed.	DIGITAL COLD & HEAT GA03HA ALARM 14 Faild inflame! HELP 00:00 06:00 12:00 18:00 24:00 ALARM
WARNING 17	Increased temperature in feeder The HELP button displays technician data.	DIGITAL COLD & HEAT GA03HA NOTE 17 Elevated temperature in feeder HELP 00:00 06:00 12:00 18:00 24:00 ALARM

8.   Information on the disposal and collection of worn out electrical and electronic equipment.
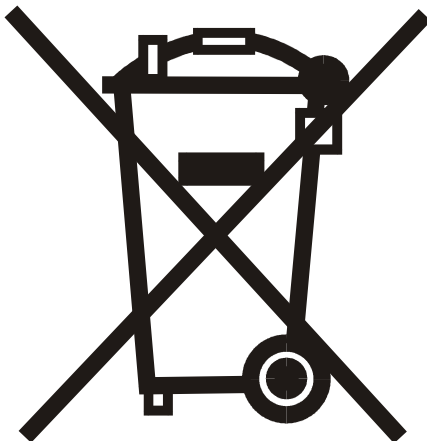
Caution!

This symbol placed on the product or its packaging indicates the need for selective collection of worn out electrical and electronic equipment. It means that this product should not be disposed of with other household wastes. Proper disposal of old and worn out electrical and electronic equipment will help to avoid potentially adverse effects for environment and human health.
It is the user's responsibility to collect worn out equipment separately, and to return it to an authorised disposal company.

9.   NOTES

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