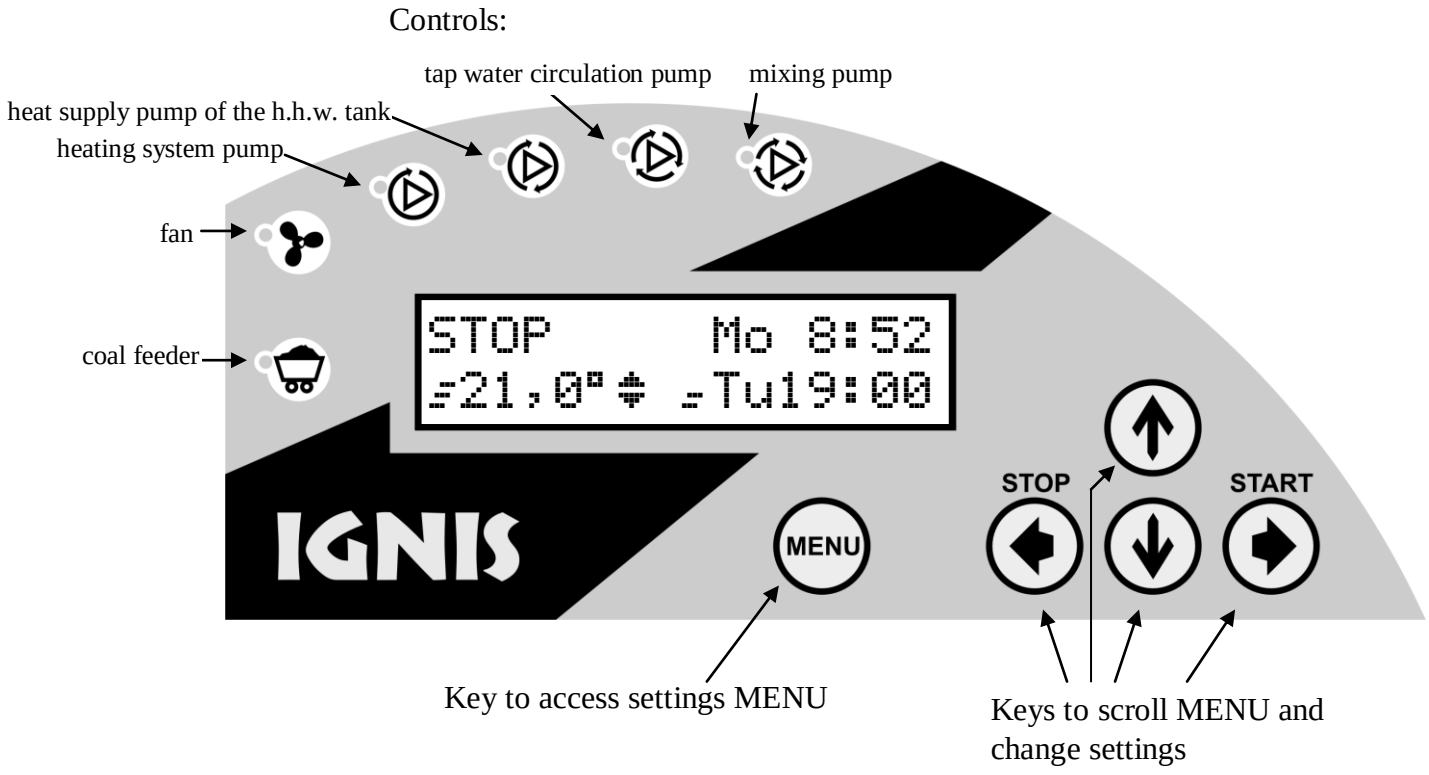
# IGNIS *delta v3.12*
# TMK Września
# USER'S MANUAL

**WARNING !**
**TO ENSURE A LASTING AND RELIABLE OPERATION OF THE CONTROLLER, USERS ARE REQUIRED TO FIT A SEPARATE BOILER MIXING PUMP AND A MIXING VALVE WITH A DRIVE (FOR MORE DETAILS SEE THE DIAGRAM AT THE END OF THE MANUAL).**

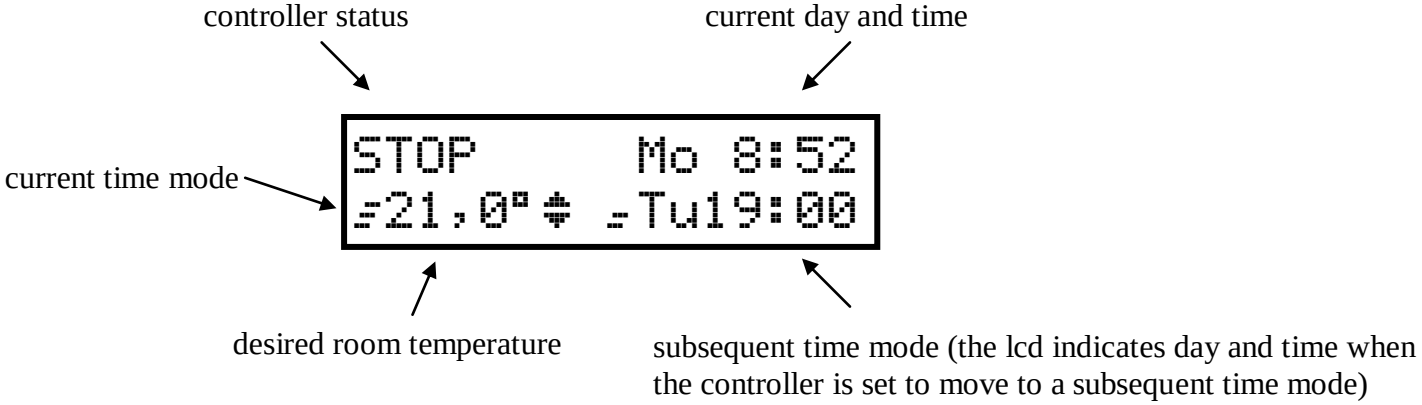
## APPLICATION

This micro boiler controller is designed to control the operation of a perpetual screw coal feeder, fan, three-way valve, a mixing pump, the heating system pump (h.s.), the heat supply pump of the hot household water tank (h.h.w.) and a tap water circulation pump. IGNIS DELTA controls and maintains preset room temperatures using a mixing valve and the room temperature sensor aided by various time modes.

## CONTROL PANEL OVERVIEW




### LIQUID CRYSTAL DISPLAY (LCD) OVERVIEW



## OPERATION

Press ⊛ - **START** to turn the controller on.

The boiler moves from **STOP** to **IGNITION**. The fan works at full throttle and the coal feeder starts to supply fuel in preset periods.

When the preset **SHUT DOWN** temperature of $35^0$C has been exceeded, the controller moves to **HEATING**. In this mode as the temperature rises towards its preset value, the amount of air and fuel supplied decreases and alternatively, as the temperature drops the amount of air and fuel supplied increases accordingly. When "AUTO" mode is on, the heating effectiveness depends on the temperature of water in the boiler return pipe.

If the temperature exceeds the preset value, the controller moves to **HOLD** whereby the fan and the coal feeder begin operating in preset periods to prevent the boiler from shutting down.

When the boiler temperature starts dropping again, the controller moves back to **HEATING**, however should the boiler temperature drop below **SHUT DOWN** temperature, the controller moves to **STOP**, but only if more than 1 hour (time preset by the manufacturer) of **IGNITION** time has lapsed since pressing **START**.

To stop the controller at any time press ⊛ - **STOP**.

In the **STOP** mode, the fan and the coal feeder remain turned off.

In all modes the heating system pump and the hot water pumps are turned on or off based on the temperature of the boiler and hot household water tank.

## CHANGING SETTINGS and viewing current temperatures

Follow flashing arrows ◂ , ▸, ▴, ▾ and ◆ that indicate which keys to use to scroll MENU and change settings.

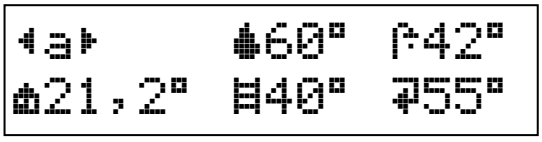
Use ⊛ and ⊛ to input desired values and scroll **MENU.**
Use ⊛ and ⊛ only to scroll **MENU.**
Use MENU to return to previous screen or the **MAIN SCREEN**. Once new values have been input they need to be confirmed within 1 minute (the user will be asked for decision). Otherwise no changes are saved and the controller returns to the **MAIN SCREEN**.

Desired **ROOM TEMPERATURE** can be set temporarily on the **main screen** and this value remains valid until the controller moves to a subsequent time mode.

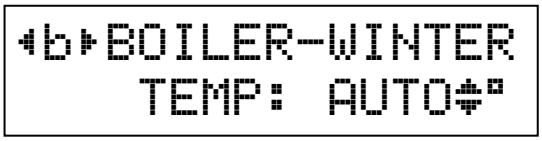
Other settings can also be changed after pressing **MENU.**

The LCD shows now:

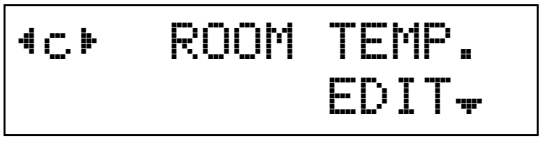
**a)** overview of current temperatures:
- ▲ - boiler temperature
- ⊓ - hot household water tank temperature
- ⌂ - room temperature
- ▤ - radiator temperature
- ⊐ - water temperature in the boiler return pipe



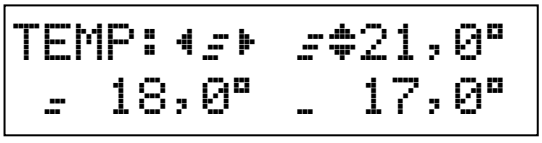

**b)** boiler temperature setting
When setting this value below $30^0$C ("AUTO"), the controller automatically sets the boiler temperature to prevent furnace gas condensation



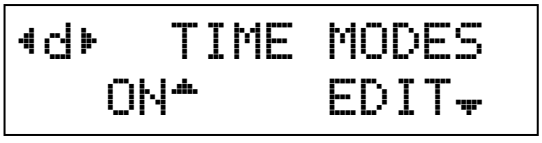

**c)** access desired room temperature for different time modes



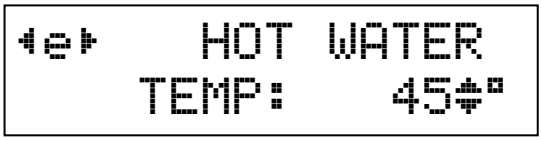

- ☀ - daytime
- ☾ - nighttime
- _ - economy




**d) TIME MODES**
To find out more about setting hourly and daily time modes refer to "TIME MODES" subsection.
time modes ON/OFF



**e)** setting the temperature of the hot household water tank

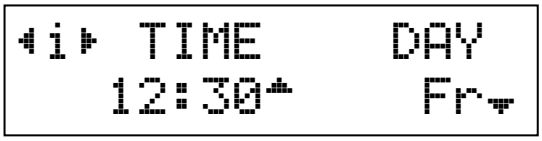



**f)** minimum daytime temperature of radiators maintained by a three-way valve
(provided that the room temperature exceeds the preset temperature)

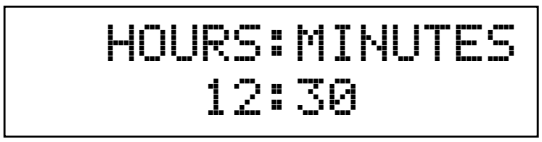

**g)** minimum nighttime temperature of radiators maintained by a three-way valve
(provided that the room temperature exceeds the preset temperature)


**h)** maximum temperature of radiators maintained by a three-way valve
(provided that the room temperature drops below the preset temperature)


**i)** key ⊕ - set time
key ⊖ - select day

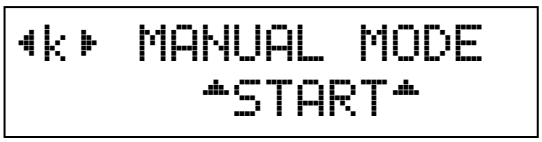



key ⊕ - change hours and minutes




**j)** select a season
WINTER – control both heating system and hot water pumps
SUMMER – control the hot water pump only

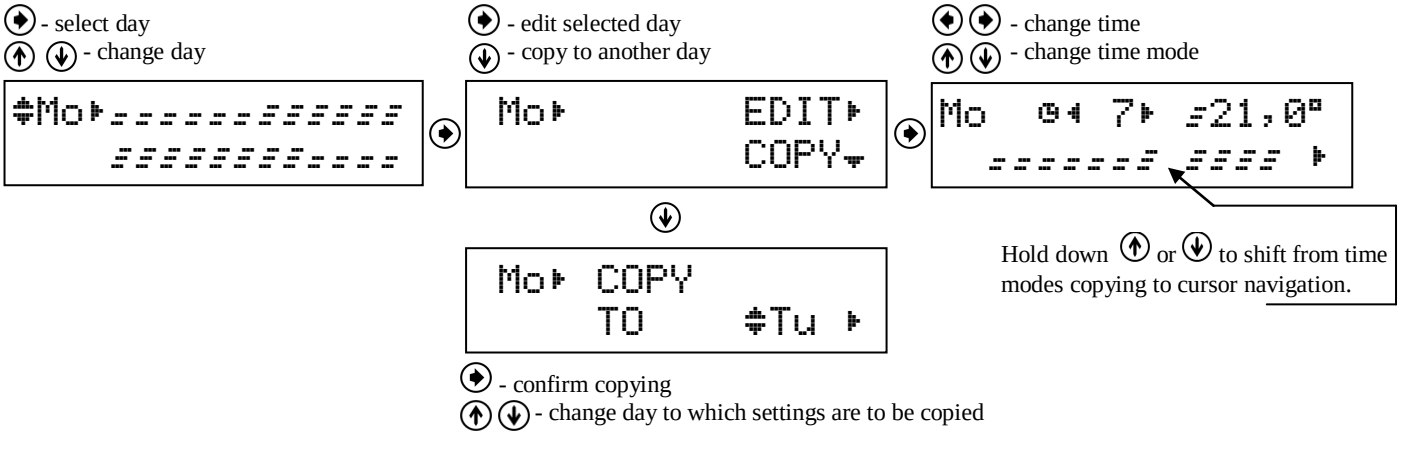

**k) MANUAL MODE** ON
(for operation details refer to „THE MANUAL MODE" subsection)




Press **MENU** when editing any parameter to return to the **MAIN SCREEN**.

## TIME MODES

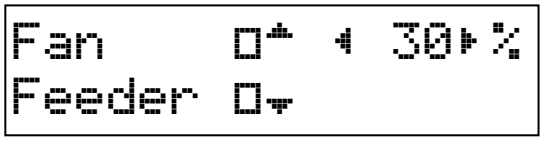
The controller is designed to maintain room temperature in three different modes:
▬ - daytime, ▬ - nighttime, ▁ - economy.
For daytime and nighttime modes the temperature controlled by a valve can be set by the user while in the economy mode the minimum temperature of the radiators is reduced to the preset value of economy temperature.
Additionally, the tap water circulation pump operates only in the daytime mode, while in other modes in emergencies only.



**THE MANUAL MODE**

This mode allows to switch the fan and the coal feeder on or off at any time and is used to ignite the boiler when the feeder is empty. When the coal storage unit is full turn the feeder drive on and keep it on for the retort to accumulate some coal. Now turn the feeder drive off, switch the fan on, set the desired fan capacity (fan capacity is shown percentage-wise on the screen) and ignite the coal in the retort.
To leave the **MANUAL MODE** press **MENU**.

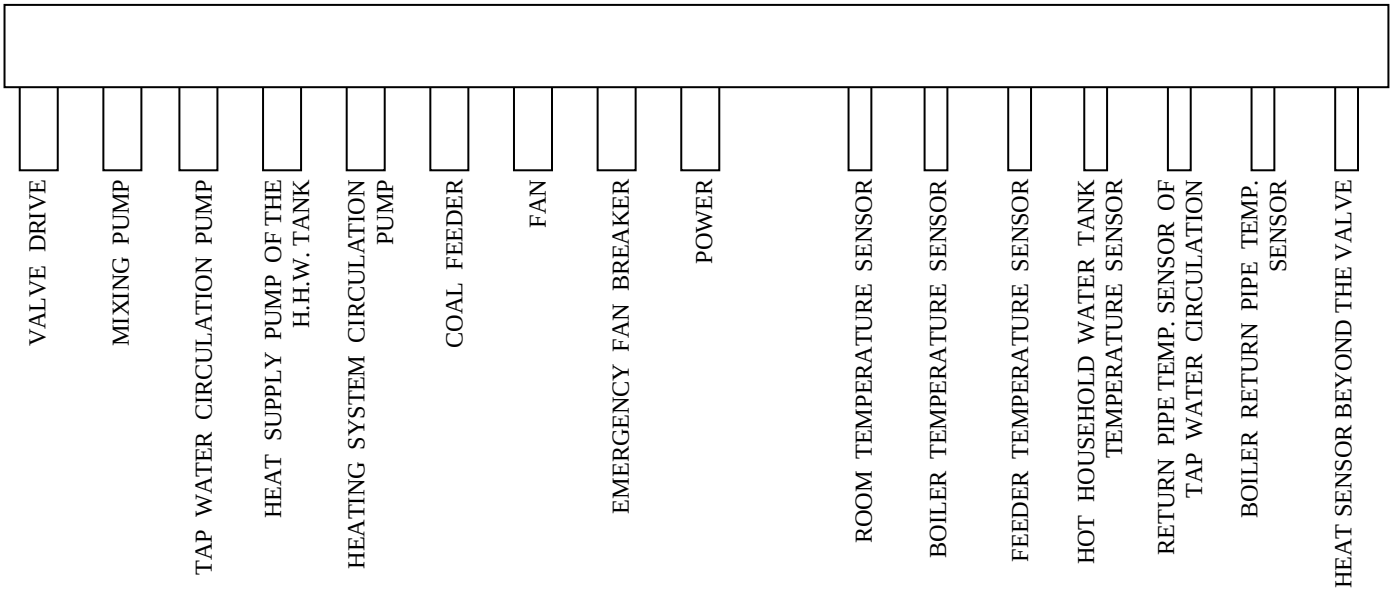
The **MANUAL MODE** screen overview:




- fan ON (✓) /fan OFF (□) ⊕

- feeder ON (✓) /feeder OFF (□) ⊖

## LEAD OVERVIEW




**THREE-WAY VALVE:** BROWN - closing, BLACK - opening, GREY - N (neutral)

## WARRANTY

TMK warrants that the IGNIS boiler controller will be fit for the purpose for which such goods are ordinarily intended. TMK also warrants all equipment of its manufacture to be free from defects in materials or workmanship for a period of THREE YEARS from the date of purchase, but not more than FOUR YEARS from the date of manufacture.

## CONDITIONS OF WARRANTY

TMK sp.j. warrants the controller, providing that the information contained in this manual and the general rules of operation of electronic devices are observed at all times. TMK sp.j. warrants the workmanship and reliable operation of the IGNIS boiler controller. Should the boiler controller develop a fault or malfunction due to poor workmanship, TMK sp.j. shall repair or replace the faulty boiler controller with a functioning one within 14 days of receiving the said faulty controller (either in person or via mail). The warranty does not cover any breakdown, malfunction or damage caused by negligence, including, but not limited to, exposure to excessive humidity, faulty fitting, or failure o adhere to the universally accepted rules of operation of electronic devices.

SOLD (day/month/year): .....

MANUFACTURED BY:
Firma TMK sp.j.
62-300 Września
Szosa Witkowska 105
tel./fax +48 61-437-97-60
**www.tmk.com.pl**

…….....
salesman's signature and official seal

…….....
MANUFACTURED (day/month/year)

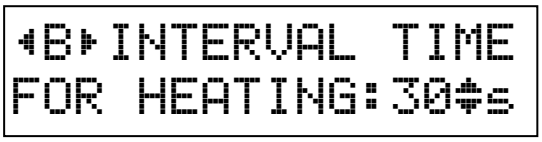
# IGNIS *delta v3.12*
# TMK Września

## OPERATING SETTINGS

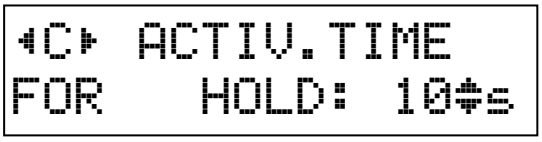
Most operating settings can be found in **OPERATING MENU**. To access **OPERATING MENU** stay on the **MAIN SCREEN**, then press and hold down **MENU** for about 2 seconds.

**A)** feeder activation time for **HEATING** – the boiler temperature below the initially set value

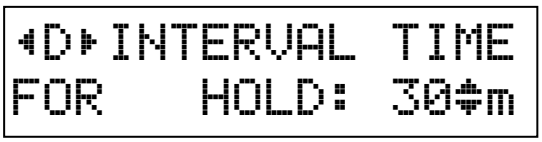

**B)** feeder intervals for **HEATING**



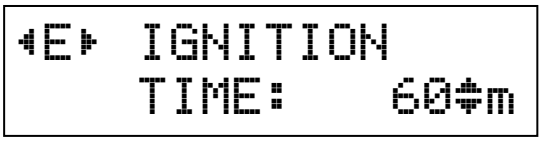

**C)** fan and feeder activation time for **HOLD** – the boiler temperature above the initially set value
The fan can be activated for longer periods (see **fan activation multiplier** defined by parameter "O").



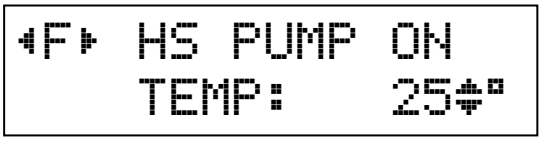

**D)** feeder and fan intervals for **HOLD**



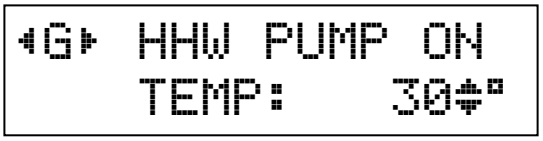

**E)** time that lapses after turning the controller on without it shutting down the boiler in spite of the boiler temperature dropping below **SHUT DOWN** temperature (parameter "N")




**F)** temperature to activate the heating system pump
The heating system pump is activated when the three-way valve sensor indicates that the heating system pump activation temperature has been exceeded.
The pump is also activated if the three-way valve is opened with a servo-motor.



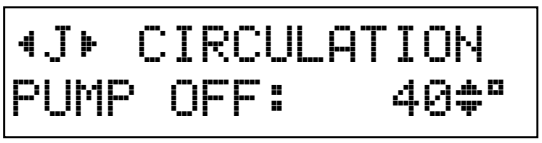

**G)** activation temperature of the heat supply pump of the hot household water tank




**H)** water temperature drop in the hot household water tank (below the parameter "e HOT WATER") required to resume water tank heating


**I)** prioritize activation of the heat supply pump of the hot household water tank over the protection of the boiler return pipe


**J)** temperature at which the tap water circulation pump is turned off (the temperature in the return pipe of tap water circulation)




**K)** the temperature drop in the return pipe of tap water circulation required to activate its circulation pump


**L)** desired maximum fan capacity

**M)** desired minimum fan capacity

```
◂M▸ FAN CAPACITY
    MIN:    30▴▾%
```

**N)** the temperature below which the controller begins shutting down the boiler after **IGNITION TIME** (parameter "E") has lapsed

```
◂N▸ SHUT DOWN
    TEMP:   35▴▾°
```

**O)** multiplier of the fan activation time
A parameter in the **HOLD** mode that defines how many times more the fan is to be activated than the coal feeder.
It is a time required to fan up the fire after an interval.

```
◂O▸ FAN ACT.TIME
MULTIPLIER:  2▴▾
```

**P)** an interval between individual pitches of the three-way valve
The individual pitch is set at 1 second.

```
◂P▸       VALVE
INTERVAL:   15▴▾s
```

**R)** delay of the automatic valve temperature adjustment in response to room temperature changes
A very low preset value causes the temperature beyond the valve to fluctuate too much. A very high preset value causes major discrepancies between the actual room temperature and its preset value.

```
◂R▸  ROOM TEMP.
REACIONTIME:10▴▾m
```

**S)** time set to discharge coal from the feeder after the temperature has exceeded feeder overheat alarm
(Prevents fire in the boiler from retreating into the coal storage unit)

```
◂S▸ FEEDER ALARM
 TIME:       5▴▾m
```

**T)** feeder overheat alarm
After this temperature has been exceeded the feeder is activated to force fire from the coal feeder into the boiler.
(Prevents fire in the boiler from retreating into the coal storage unit)

```
◂T▸ FEEDER ALARM
 TEMP:     100▴▾°
```

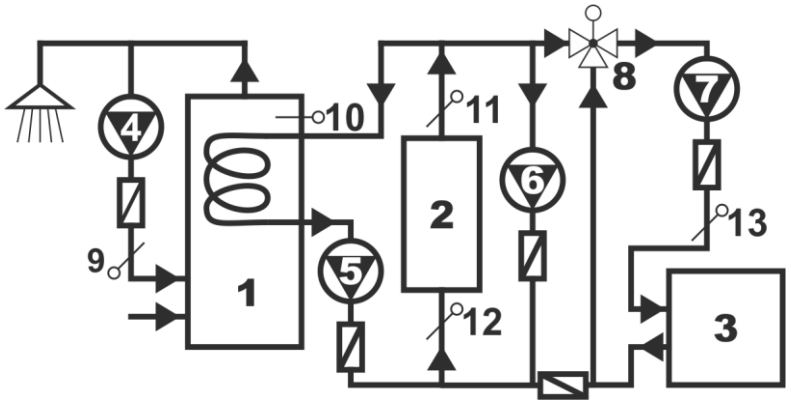
**U)** boiler overheat alarm in the SUMMER mode
After this temperature has been exceeded the heating system pump is activated and the three-way valve opens fully to allow the boiler to cool off.
(Prevents the water in the boiler from boiling)

```
◂U▸HS PUMP ACT.
SUMMER MODE:80▴▾°
```

**W)** return to default settings
The controller enables to return to default settings.
Press ↑ and confirm.

```
◂W▸ DEFAULT SET.
     ▴RETURN▴
```

**INSTALLATION DIAGRAM**




- NON-RETURN VALVE

1. Hot household water tank
2. Boiler
3. Radiator
4. Tap water circulation pump
5. Heat supply pump of the hot household water tank
6. Mixing pump
7. Heating system circulation pump
8. Three-way valve and a servo-motor
9. Return pipe heat sensor of tap water circulation
10. Hot household water tank heat sensor
11. Boiler sensor and emergency fan breaker
12. Boiler return pipe heat sensor
13. Heat sensor beyond the valve