MIKROFILL®
ETHOS BOILERS

INSPIRED | EFFICIENCY

ETHOS 70, 90, 110 & 130
Wall mounted gas fired condensing boilers

USER MANUAL

Issue 05/08

Introduction

The Mikrofill Ethos Boiler you have purchased has been designed and manufactured in Britain and represents the very best in quality and performance,

This User Manual is designed to Guide you through the many user settings available to ensure optimum operating conditions. Please read this manual thoroughly, careful use of the controls will result in lower greenhouse gas emissions and reduced operating cost.

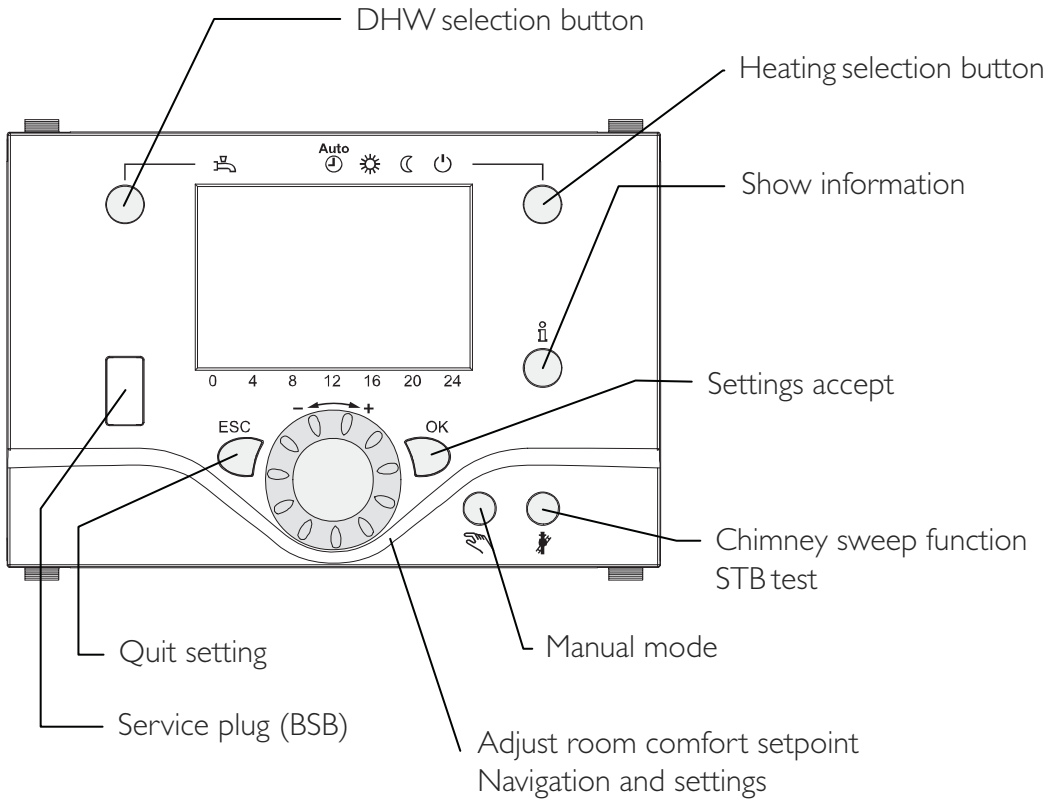
The Ethos range of boilers incorporate a fully integrated microprocessor control system
that offers the following user settings

- Heating Time Control
- Domestic Hot water Time Control (optional HWS sensor required)
- Weather Compensation (optional outside sensor required)
- Holiday period programming
- Night Set Back

The Optimised start facility is pre programmed and requires no user adjustment., all other settings and adjustments will have been factory set.

Any procedures not described in this user manual should only be undertaken by a competent qualified person, if in doubt contact Mikrofill technical dept. on 08452 606020

We recommend a regular maintenance regime that should include at least one annual service. Extended warranties inclusive of annual service are available from Mikrofill Systems Ltd. For further details please contact the HELPLINE on 08452 606020.

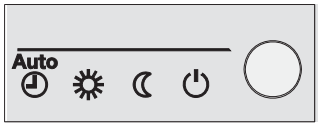


- Heating to Comfort setpoint
- Heating to Reduced setpoint
- Heating to frost protection setpoint
- Process running - please wait
- Change battery
- Burner operating

- **INFO** Info level activated
- **PROG** Programming activated
- **ECO** Heating temporarily switched off ECO function active
- Holiday function active
- Reference to heating circuit
- Maintenance / special operation
- Error messages

Selecting heating module

This setting is used to switch between the different operating modes. The selection made is indicated by a bar which appears below the respective symbol.



Automatic mode AUTO

Automatic mode controls the room temperature according to the time program.

Characteristics of automatic mode:

Heating mode according to the time program
Temperature setpoints according to heating program "Comfort setpoint" ☼ or "Reduced setpoint" ☾
Protective functions active
Automatic summer / winter changeover (ECO functions)

Continuous operation ☼ or ☾

Continuous operation or Continuous operation maintains the room temperature at the selected operating level.

☼ Heating to Comfort setpoint
☾ Heating to Reduced setpoint

Characteristics of continuous operation:

Heating mode with no time program
Protective functions active
Automatic summer / winter changeover (ECO functions)

Protection ⏻

When using protection, the heating system is off. But it remains protected against frost (frost protection temperature) provided there is no power failure.
Characteristics of Protection:

Heating off

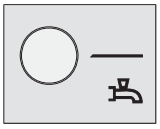
Temperature according to frost protection
Protective functions active
Automatic summer / winter changeover (ECO functions) and automatic 24-hour heating limit active

Selecting DHW heating mode

The button is used to switch DHW heating mode on and off. The selection made is indicated by a bar which appears below the respective symbol.

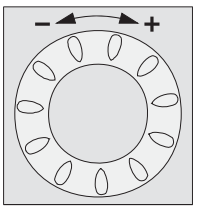
DHW heating

On
The DHW is heated according to the selected switching program.
Off
No DHW heating, the protective function is active.
Triggering is effected by keeping the DHW operating mode button on the operator or room unit depressed for at least 3 seconds.
It can also be started when:
The operating mode is "Off"
Operating mode changeover acts via H1 or centrally (LPB)
All heating circuits use the holiday function



Adjusting the room temperature setpoint

Turn the setting knob to increase or decrease the Comfort setpoint ☼
For the Reduced setpoint ☾
Press OK
Select operating page "Heating circuit" and
Adjust the "Reduced setpoint"



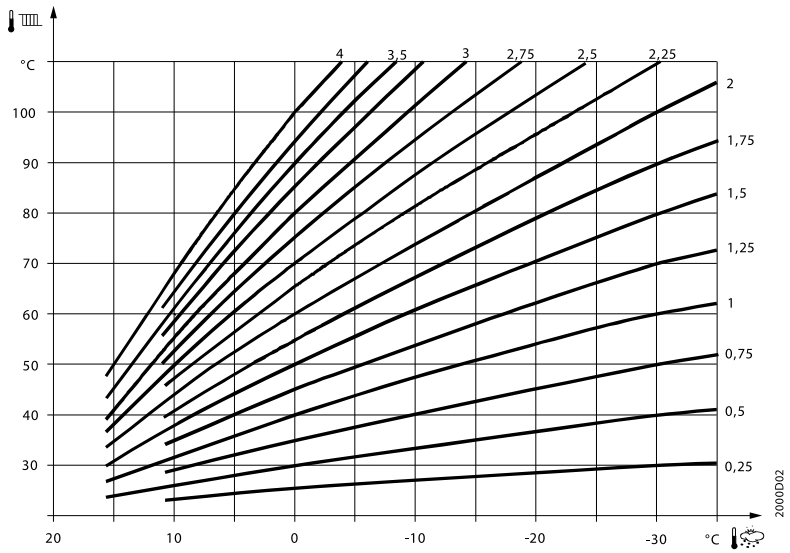
If no external sensors are connected, the boiler flow temperature will be determined by using the heating curve with an external temperature of 0°C. Please see following graph for equivalent temperatures.

After each re-adjustment, wait at least 2 hours, allowing the room temperature to adapt.

Heating curve

The rate of change, with respect to weather compensation, is adjusted by the heating curve setpoint, selection of a higher setpoint will result in a higher rate of temperature gain. Reducing the setpoint will result in a lower rate of temperature gain.

Increase adjustment: Raises the flow temperature, especially when outside temperatures are low.
Decrease adjustment: Lowers the flow temperature, especially when outside temperatures are low.



Displacement of heating curve

Parallel displacement of the heating curve is used to change the flow temperature evenly across the entire outside temperature range or, in other words, if the room temperature is always too high or too low, a readjustment must be made with the help of parallel displacement.

Adaptation of the heating curve

Adaptation of the heating curve is used by the controller to automatically adapt the heating curve to the prevailing conditions. In that case, a readjustment of the heating curve slope and parallel displacement is not required.
It can only be switched on or off.

Boiler Temperature setting

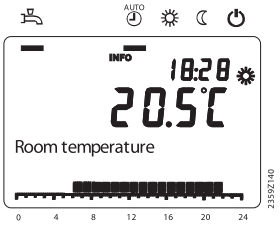
Comfort Setpoint	Boiler Temperature	Comfort Setpoint	Boiler Temperature
15°c	48.0°c	26°c	78.5°c
16°c	51.0°c	27°c	80.0°c
17°c	54.0°c	28°c	81.5°c
18°c	56.0°c	29°c	83.5°c
19°c	59.0°c	30°c	85.0°c
20°c	61.5°c	31°c	85.0°c
21°c	64.0°c	32°c	85.0°c
22°c	66.5°c	33°c	85.0°c
23°c	69.0°c	34°c	85.0°c
24°c	72.5°c	35°c	85.0°c
25°c	75.5°c		

Above table based on a heat slope of 2.0 at 0°c outside air temperature

Displaying information

Various data can be displayed by pressing the info button.

Possible displays



Depending on the type of unit, configuration and operating state, some of the info lines listed below may not appear.

Display:

- Possible error messages
- Possible service messages
- Possible special mode messages

Other displays:

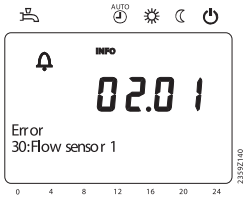
- Room temperature
- State of DHW
- State of boiler
- Boiler temperature
- Outside temperature
- Date and time of day
- DHW temp I
- State of heating circuit I

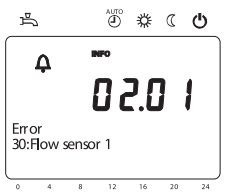
Exception

In exceptional cases, the basic display shows one of the following symbols:

Error messages
If this symbol appears, an error in the plant has occurred. Press the info button and read further information

Maintenance or special operation
If this symbol appears, a maintenance alarm is delivered or the plant has changed to special mode. Press the info button and read further information.





Manual operation

When manual operation is active, the relays are no longer energized and deenergized according to the control state, but are set to a predefined manual operation state depending on their function.

The burner relay energized in manual control can be deenergized by the electronic temperature controller (TR).

Setpoint adjustment in Manual control

After manual control has been activated, a change to the basic display must be made.

There, the maintenance / special mode symbol appears.

Press the info button to switch to info display "Manual mode", where the setpoint can be adjusted.

Chimney sweep function

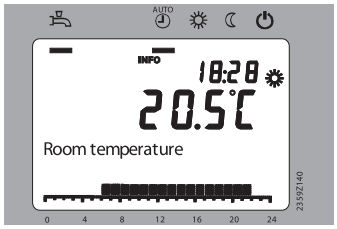
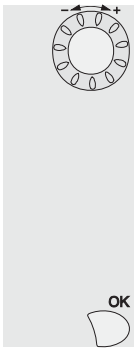
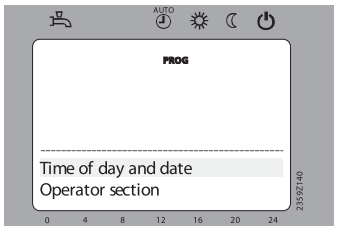
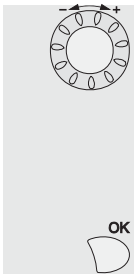
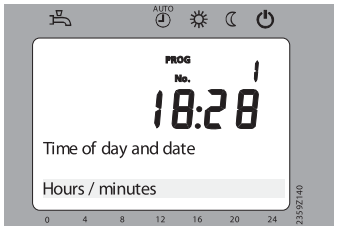
The chimney sweep function is activated by a short press (maximum 3 seconds) on the chimney sweep button.
This function produces the operating state required to make emission measurements (flue gas, maximum load only).

Setting principle

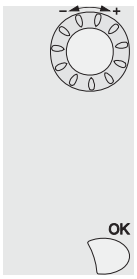
Settings that cannot be made directly with the operating elements are made in the form of programming. For this purpose, the individual settings are structured in the form of operating pages and operating lines, thus forming practical groups of settings. The following example shows how to set the time of day and the date.

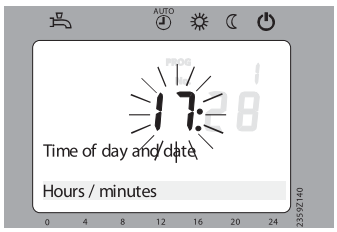
Example: "Setting the time of day"

Press ESC to go one step back at a time, readjusted values are not be adopted.
If no setting is made for 8 minutes, the display returns automatically to the basic display.
Operating lines may be hidden, depending on the type of controller, the configuration made and the user level.

	Operation	Display example	Description
1			**Basic display.** If the basic display is not shown, press the ESC button to return to it. **Press OK.**
2			**The bottom section of the display shows a number of operating pages.** Turn the setting knob until operating page Time of day and date appears. **Press OK to confirm.**
3			**In the bottom section of the display, the first operating line of operating page Time of day and date appears.** Turn the setting knob until operating line Hours / minutes appears. **To confirm, press OK.**

4

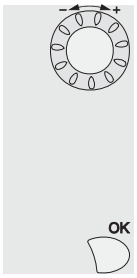


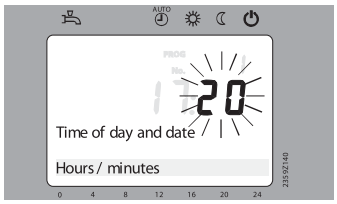


The display shows the hours flashing .
Turn the setting knob until the hours of the time of day are correct.

To confirm, press OK.

5

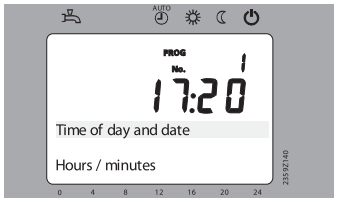




The display shows the minutes flashing.
Turn the setting knob until the minutes of the time of day are correct.

To confirm, press OK.

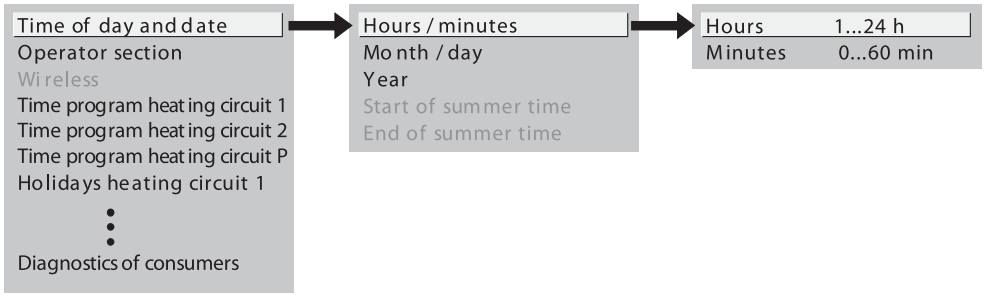
6



The settings are saved and the displays stops flashing.
Now, you can make further settings or you press the operating mode button to return to the basic display.

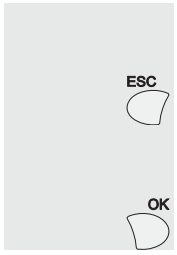
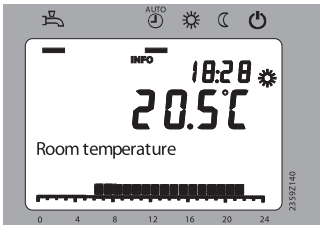
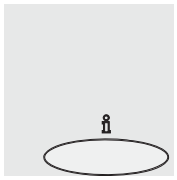
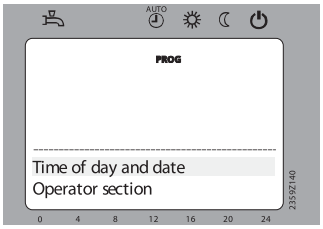
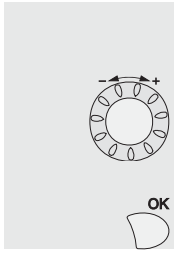
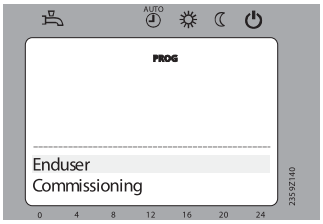
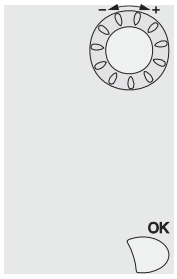
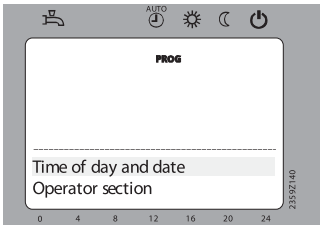
7

Now, you see the basic display again.



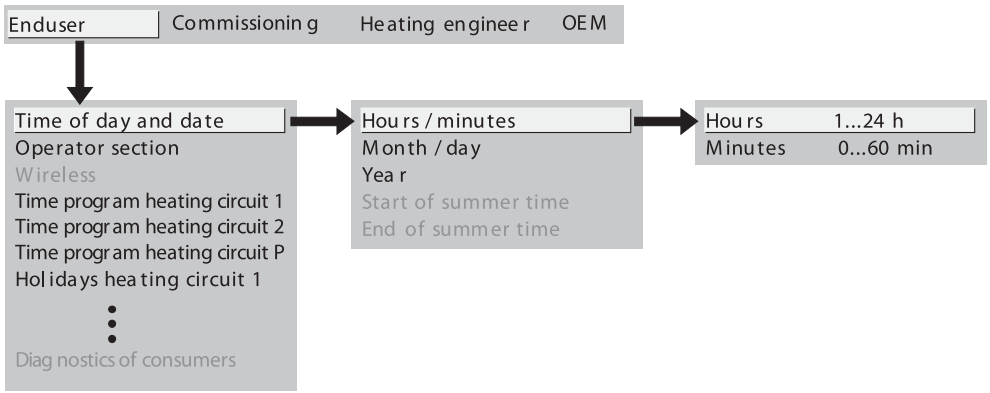
User levels

The user levels only allow authorized user groups to change settings. To reach the required user level, proceed as follows:

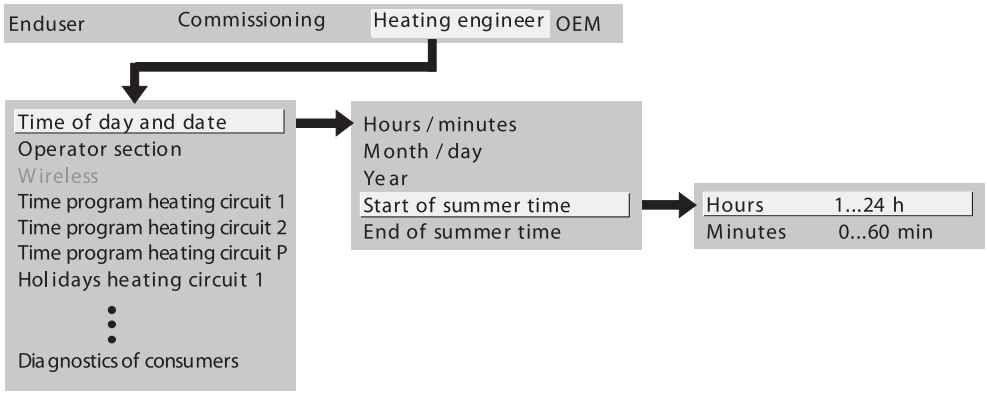
	Operation	Display example	Description
1			**Basic display.** If the basic display is not shown, press the ESC button to return to it. **Press OK.**
2			You are on the user level Enduser. **Press the info button for 3 seconds.**
3			You are now given a choice of user levels. **Turn the setting knob until the required user level is reached.** **Press OK.**
			You are now on the required user level.

Setting structure “Enduser”

The example given here shows that certain user levels do not allow certain settings to be made. The example shows them highlighted. On the unit, they are hidden.



Setting structure ”Heating engineer“



List of displays

Error code

Error Code	Description of maintenance
10	Outside temperature sensor error
20	Boiler temperature 1 sensor error
28	Flue gas temperature sensor error
40	Return temperature 1 sensor error
50	DHW temperature 1 sensor error
81	Short-circuit LPB
105	Maintenance message
109	Boiler temperature supervision
110	Lockout by SLT
113	Safety shutdown flue gas
117	Upper pressure limit (crossed)
118	Critical lower pressure limit (crossed)
121	Flow temperature 1 (HC1) supervision
126	DHW charging supervision
127	Legionella temperature not reached
128	Loss of flame in operation
129	Wrong air supply
131	Burner fault
133	Safety time exceeded
146	Configuration error common message
178	Temperature limiter heating circuit 1
217	Sensor error common message
218	Pressure supervision common message
320	DHW charging temperature sensor error

Maintenance code

Error Code	Description of maintenance
1	Burner hours run exceeded
2	Burner starts exceeded
3	Maintenance interval exceeded
5	Water pressure heating circuit too low (dropped below lower pressure limit 1)
18	Water pressure 2 heating circuit too low (dropped bel ow lower pressure limit 2)
10	Replace battery of outside sensor
21	Maximum flue gas temperature exceeded
22	Water pressure 3 too low (dropped below lower pressure limit 3)

Special operation code

Error Code	Description of maintenance
301	Manual operation
302	SLT test
303	Chimney sweep function
309	Simulation outside temperature
310	Alternative energy operation
314	Economy mode

Switching-on the appliance

1 Open the gas valve.
2 Switch on the boiler using the on/off switch on the control panel.
3 Set the type of operation to "automatic operation AUTO " using the "heating selection" button.

Switching-off the appliance

The appliance can be switched off in three ways:

A The boiler remains available for hot water operation. Using the "heating selection" button,set the type of operation to .
B The boiler is out of operation and only comes into operation due to the automatic frost protection system. Using the "heating selection" button, set the type of operation to .
C Switch off the boiler completely.
    1 Switch off the boiler using the on/off switch.
    2 Close the gas valve.

Warnings

The appliance should be installed by a competent installer.
These operating instructions should be closely followed.
If the cause of the fault cannot be determined, contact the Service department. Never carry out repairs on your own.

Notes

Boiler Model:

Serial Number:

Installer:

Registration Number:

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