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SAFETY & SECURITY SYSTEMS
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BS-844/2

Programmable recessed thermostat for wood burners with connection ability of two sensors

CE

TECHNICAL CHARACTERISTICS	
OPERATION VOLTAGE	220-240V AC/45-55Hz
CONSUMPTION (only the device)	3VA / 2,5W maximum
OUTPUT POWER FOR THE FAN	200W maximum (0,85A)
OUTPUT POWER FOR THE CIRCULATOR	150W maximum (0,65A)
OUTPUT PROTECTION FOR BLOWER/CIRCULATOR	Replaceable fuse
SMOKE SENSOR MEASUREMENT RANGE	0-450°C
WATER SENSOR MEASUREMENT RANGE	-40°C to 120 °C
BLOWER POWER ADJUSTMENT	0-100%
SENSOR CABLE LENGTH	200 centimeters
SENSOR CONSTRUCTION MATERIAL	for water: nickel-plated brass, for smoke: stainless steel
DEGREES OF COVER PROTECTION	IP20
PRODUCED IN ACCORDANCE WITH	EN 60730-1, EN 60730-2-9, EN 61000-6-1, EN 61000-6-3
OPERATION TEMPERATURE RANGE	-10 to 60 °C
RELATIVE HUMIDITY	0 - 90% RH
EXTERNAL DIMENSIONS	137 x 95 x 45 mm
TYPICAL WEIGHT (main unit / + sensor)	275gr / 425gr
GUARANTEE	2 years
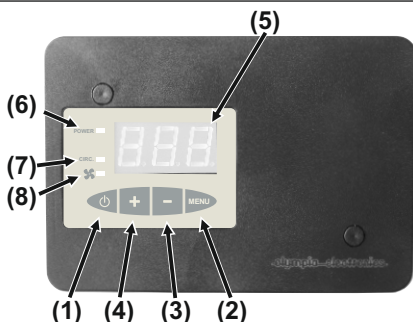
CONTROL AND INDICATOR DESCRIPTION
(1). ON/OFF button
(2). Settings selection button
(3). Decrease selected setting button
(4). Increase selected setting button
(5). LED information display
(6). Mains power indicator
(7). Circulator operation indicator
(8). Fan operation indicator

BASIC SETTINGS
When the unit is powered for the first time all the indicators and the LED display are lit. After that a factory number is shown and the unit goes to a standby state. The display shows - - - .
Here we can adjust the required setting depending on the type of wood burner. To enter the settings adjustment menu we must press continuously the button ⏻ for a few seconds until the display shows the message Pro .
Immediately after pressing one of the keys (+) and (-), the display will scroll all the programming parameters of the device. When the desired parameter is displayed by pressing the MENU button the initial value can be changed to the desired value using the (+) and (-) buttons.
Whichever of the buttons (+) or (-) is pressed constantly, changes the value quickly, not requiring repeating presses.
If the MENU button is pressed again, the value is stored in the device memory and the display shows the name of the parameter that you just set. Below are the programming parameters as would occur if the button (+) is repeatedly after the message Pro is shown:

1. Circulator start temperature setting
The display shows the message CSt (Circulator Start Temperature). Pressing the **MENU** button will show the factory default setting which is 45ºC. This value can be adjusted from 35–60ºC and sets the water temperature above which the circulator starts to operate. If the water temperature is lower then the selected value then the circulator does not operate.

2. Safety level temperature adjustment.
The display shows the message oHL (Over Heat Limit). Pressing the **MENU** button will show the factory default setting which is 85ºC. This value can be set between 86°C and 95ºC and determines the overheating level of the water.
If the water temperature exceeds this level then the message $Hi t$ (High Temperature) is shown, and the buzzer is activated with an intermitted sound.

3. Adjusting the lower temperature level for controlling the speed of the fan.

The display shows the message LFt (Low Fan Temperature), by pressing the **MENU** button the factory default setting will appear which is 55ºC. With this setting we can adjust the temperature of the water from which the fan will gradually starts to decrease its speed. The value can be set from 50ºC to HFt (4) decreased by 1. For example if the HFt temperature is 65ºC, then the temperature LFt can be adjusted from 50-64ºC. The decrease in the fan speed is done gradually until the HFt (4) temperature is achieved and finally the fan will stop.

4. Adjusting the higher temperature level for controlling the speed of the fan.

The display shows HFt (High Fan Temperature), by pressing the **MENU** button, the factory default setting will appear which is 72ºC. With this arrangement we can choose the water temperature above which the fan will stop operating, since the rotation speed starts to decrease when it starts to become greater than the value LFt (3) and regulated by the temperature LFt increased by 1 up to 85ºC. The automatic fan speed adjustment is done between the lower LFt temperature and the temperature HFt. *If these two temperatures LFt and HFt are adjusted as to have a difference of only 1°C then the fan operates in ON/OFF mode.*

5. Flame sustentation setting

The display shows the message Fit (FiL Temperature) by pressing the **MENU** button, the factory default setting will appear which is 35ºC. With this setting we adjust the water temperature below which (if there is not a command from the room thermostat) the fan will turn in maintenance state. In this state the screen shows FiL, the buzzer sounds for 3 minutes, the fan speed is lowered to the value SPL increased by 15 units and follows an activation/diactivation cycle depending on the values ton and toF in order to sustain the flame for as long as possible. If the water temperature becomes greater than this value or there is a command from the room thermostat, then the unit enters normal operation. This value can be adjusted from 10 to 50 °C.

6. Adjusting the maximum fan speed.

The screen shows the message SPH (Speed High) by pressing the **MENU** button the factory default setting will appear is 100%. With this setting we select the maximum speed of the fan in order to adjust to the needs of different types of wood burners. The adjustment value can be set from SPL +1 to 100%. During the adjustment process the fan changes speed accordingly.

7. Adjusting the minimum fan speed

The display shows SPL (Speed Low). By pressing the **MENU** button, the factory default setting will appear which is 30%. With this adjustment we determine the minimum speed that the fan can turn.

To determine this speed select 10% and wait until the fan stops. Gradually increase the value until the fan starts to rotate.

This value is different for every type of fan and in conjunction with the SPH define it's operation range. The value can be adjusted from 10% to 50%.

8. Adjusting the activation time of the fan during the flame sustentation mode.

The display shows the message ton (Time on). By pressing the **MENU** button, the factory default setting will appear which is 1 minute. With this setting we can adjust the activation time of the fan when the unit is in flame sustentation mode. If the value ``0´´, is selected the fan will remain permanently deactivated during the flame sustentation mode. The value can be adjusted between 0 and 250 minutes.

9. Adjusting the deactivation time of the fan during the flame sustentation mode.

The display shows the message toF (Time off). By pressing the **MENU** button, the factory default setting will appear which is 10 minutes. With this setting we select the deactivation time of the fan when the unit is in flame sustentation mode. The setting can have values from 1 to 250 minutes.

10. Fumes Sensor Select.

The display shows the message FSS (Fumes Sensor Select). By pressing the **MENU** button, the factory default setting will appear which is oFF. The value can be set between on and oFF, and specifies whether the smoke sensor will be active or not. If has the value oFF the parameters 11, 12, 13 have no meaning and therefore can not be changed by the controller.

11. Fumes Temperature Adjustment.

The display shows the message FEt (Fumes Effect Temperature). Pressing the **MENU** button will show the factory default setting which is 150ºC. This value can be set from 100 °C to 400 °C and defines the temperature that the exhaust should have to achieve the highest possible performance of the wood burner. The fan's speed fluctuates to stabilize the temperature. The process of regulating the exhaust temperature is performed only if the parameter value Fdt or the value HEt is outside of their limiting action.

12. Exhaust temperature adjustment deactivation time.

The display shows the message Fdt (Fumes

effect dead time). Pressing the **MENU** button will show the factory default setting which is 60'. The value can be set from 0-250' and sets the start time of the device, in which the selection FEt will not affect the fan's speed. If the circulator operates this time is not considerable. If time is finished and the circulator is off , the control thru the exhaust sensor is not activated , so the value of the time must be adjusted so that the water temperature on the completion of this time must be greater than the activation of the circulator's temperature. If the time value is set to 0, the time is canceled permanently and the value HEt , (paragraph 13) determines when the exhaust temperature adjustment (paragraph 11) takes effect.

13. Switch-off temperature setting of exhaust temperature influence.
The display shows the message HEt (Heating water Effect temperature). Pressing the **MENU** button will show the factory default setting which is 40ºC. This value can be set from 10°C - 90°C and defines the water temperature above which the exhaust temperature control (paragraph 11) may take effect. This parameter is active only if the value Fdt (paragraph 12) has the value 0.

14. Buzzer mode setting in maintenance flame sustentation.
The display shows the message bUF (Buzzer FIL). Pressing the **MENU** button will show the factory default setting which is 3. The value can be set from 1 to 4 and specifies the buzzer's operation when the device is in maintenance flame sustentation (when the display shows the message F_1). With value 1 the buzzer sounds continuous but intermittently. With value 2 will sound for 3 minutes and then will be turned off. With value 3 will sound for 3 minutes and then will beep every 10 seconds. Finally, with value 4 buzzer shuts off completely for the situation F_1L.

15. Factory settings restore.
The display shows the message FAC (Factory settings). By pressing and holding the MENU, the device will erase all parameters by replacing their values with the default values. Immediately after executing the process of connecting to the mains, as mentioned in chapter BASIC SETTINGS.

The next press of the button (+) the options cycle is completed and the display shows the first choice CSt starting again the same cycle. To complete the setup procedure and the integration of programming, the ⏻ button must be pressed again. You will hear a beep from the thermostat's buzzer and the display with show - - - , indicating that the device is in standby mode. If , after this, the button ⏻ is pressed again the device enters normal operation mode.

FAN'S MANUAL OPERATION
If, in normal operation, one of the keys (+) or (-) is pressed, the display will show the current value of the fan's speed which the user can set from the value LFt increased by 1. The manual option is stored in the place of the value SPH .
This feature is not executed when the water temperature lies between LFt and HFt (range of automatic speed control). Simultaneously, the speed control of the smoke sensor is canceled and can be restored only if the water temperature drops below the temperature LFt or the device is deactivated and reactivated again.

FROST PROTECTION
If the water temperature drops below 5°C then, regardless of the operating status (active or standby), the device activates the circulator and maintains it, for as long as the temperature remains below 5°C.

OVERHEAT PROTECTION
To reduce the chance of water overheating, the circulator does not stop even after you turn off the device by pressing the ON-OFF button ⏻. It is deactivated only if the water temperature drops below the starting circulator's temperature CSt .

SENSOR MALFUNCTION
If, for some reason, the water temperature sensor is short-circuited, the display shows the message ErL (Error Low) the buzzer is activated and the fan is deactivated. This situation remains until the malfunction of the sensor is restored. The device also has the same behavior when the sensor's cable is interrupted, so the screen will display the message ErH (Error High) when the water sensor is interrupted and $ErH.$ when the smoke sensor is interrupted. If the smoke sensor is disabled, its status will be ignored. If the device turns into standby mode by pressing the ⏻ button, the buzzer will turn off.
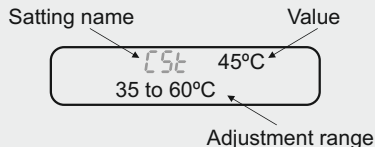
SELECTION OF THE TEMPERATURE INDICATION
In idle state the device displays on the screen, the water temperature. If the MENU button is pressed the display will show the smoke temperature, and the dot on the right will be active (i.e $150.$). If the MENU button is pressed again the display will show the water temperature.
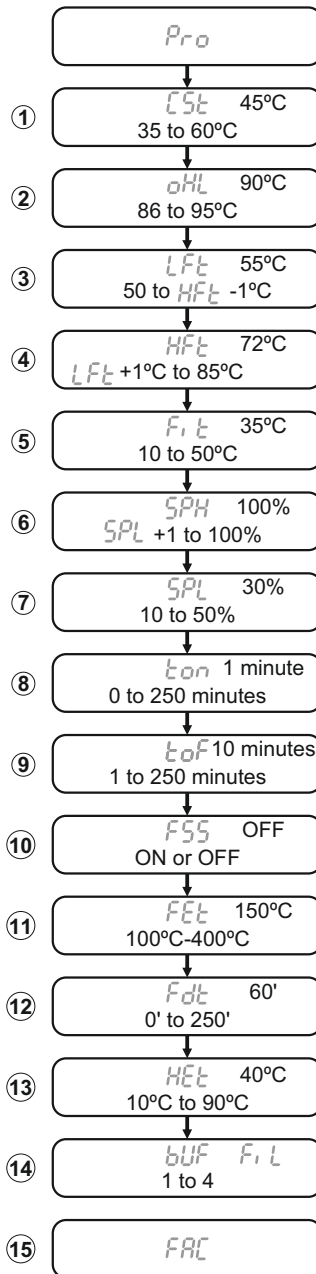
Locking the keyboard

If during normal operation (not in programming mode), the **MENU** button is pressed continuously the display shows the message Loc (Lock) and the keyboard will be locked. This is used to prevent unwanted changes. If any key is pressed the display will show the message Loc and no command will be executed.

To unlock the keyboard press continuously the MENU button until the message ULc (Unlock) is shown.

Setting Explanations

Satting name   Value

CSt 45ºC
35 to 60ºC

Adjustment range

Quick programming guide

Pro

① CSt 45ºC
35 to 60ºC

② oHL 90ºC
86 to 95ºC

③ LFt 55ºC
50 to HFt -1ºC

④ HFt 72ºC
LFt +1ºC to 85ºC

⑤ $F.t$ 35ºC
10 to 50ºC

⑥ SPH 100%
SPL +1 to 100%

⑦ SPL 30%
10 to 50%

⑧ ton 1 minute
0 to 250 minutes

⑨ toF 10 minutes
1 to 250 minutes

⑩ FSS OFF
ON or OFF

⑪ FEt 150ºC
100ºC-400ºC

⑫ Fdt 60'
0' to 250'

⑬ HEt 40ºC
10ºC to 90ºC

⑭ bUF $F.L$
1 to 4

⑮ FAC

Installation procedure
(The procedure below must be done when the mains is interrupted)

① To install the unit remove the front cover retaining screws.
② make an opening to accommodate the plastic base and pass the cable into the base using one of the pre-etched cable entry holes. *WARNING!!! Make sure that the temperature at the mounting position does not exceed the operation temperature of the unit.*
③ Carry out the connections as shown in the diagram (page 6). **N** for the neutral, **L** for the phase and on the terminals POWER EARTH connect the earth cables of the mains power supply and the earth cable of the fan. ***WARNING!!! Each and every metallic part of the wood burner must be properly connected to power earth.***
④ Refit the front cover and install the retaining screws. Place the screw hiding covers and the unit is ready to operate.

Dimensions in mm

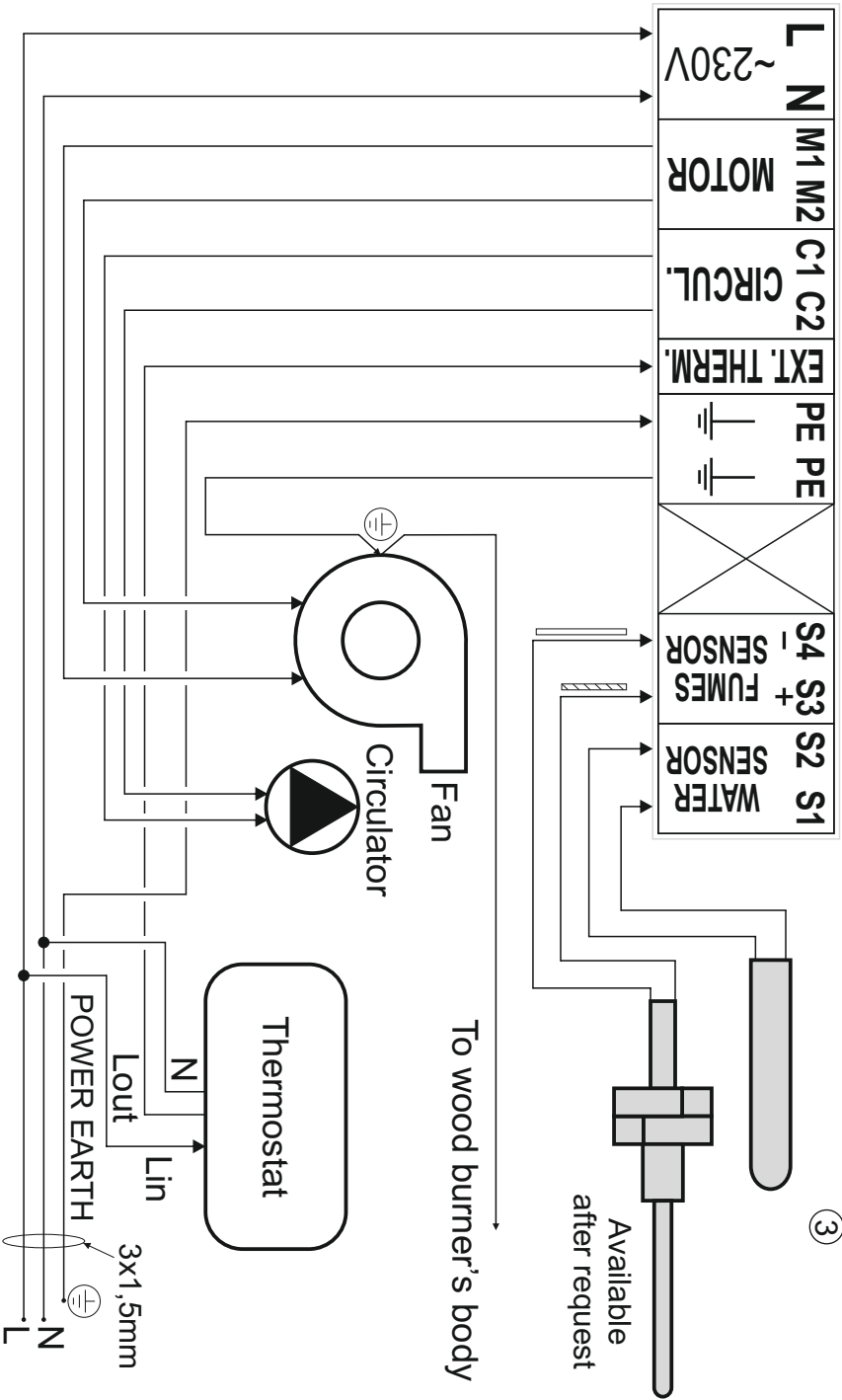Opening required for installing the base in mm.
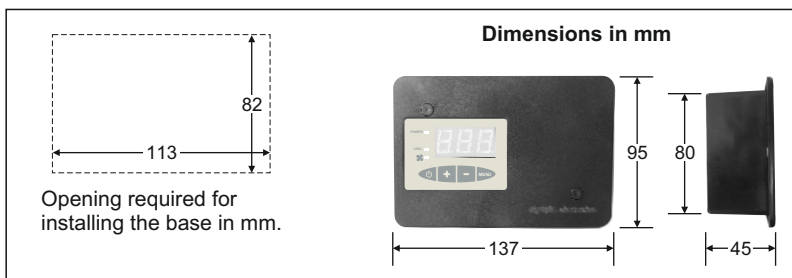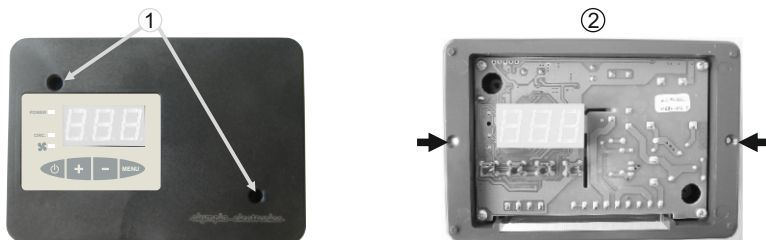
Fuse replacement

If the fan is not operating, then probably the fuse on the back has blown and requires replacement. For replacement you should rotate counterclockwise for about 45º with a flat blade screwdriver the fuse case and then remove the safety, as shown in the picture. Insert the new (supplied) fuse of the same type, and reinsert the fuse case by turning clockwise until it locks.
The procedure must be done after the mains interruption.

Thank you for purchasing this product of Olympia Electronics. A European manufacturer.

L N M1 M2 C1 C2 EXT. THERM. PE PE S4 S3 S2 S1
~230V MOTOR CIRCUL. FUMES SENSOR WATER SENSOR

Fan

Circulator

To wood burner's body

Thermostat

N Lout Lin

POWER EARTH

3x1,5mm

L N

Available after request

③

WARRANTY

Olympia Electronics guarantees the quality, condition and operation of the goods. The period of warranty is specified in the official catalogue of Olympia Electronics and also in the technical leaflet, which accompanies each product. This warranty ceases to exist if the buyer does not follow the technical instructions included in official documents given by Olympia Electronics or if the buyer modifies the goods provided or has any repairs or re-setting done by a third party, unless Olympia Electronics has fully agreed to them in writing. Products that have been damaged can be returned to the premises of our company for repair or replacement, as long as the warranty period is valid. Olympia Electronics reserves the right to repair or to replace the returned goods and to or not charge the buyer depending on the reason of defection. Olympia Electronics reserves the right to charge or not the buyer the transportation cost.

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