

INTIEL

THE ELECTRONICS ON YOUR SIDE

Solid fuel boiler Controller (INT0143_Rev.3)

User's Manual



1. Application

The Device is designed to manage the operation of solid fuel boilers, equipped with a fan and or auger for force feeding of air to the burning chamber.

2. Technical data

Power supply:	230V/50Hz/AC
Pump output:	7A/250V
Fan output:	2A/250V
Auger output:	2A/250V
Input (BT):	contact switch
Input (Room reg.):	contact switch
Sensors:	Pt1000
Range of measurement:	-30 °C up to +300 °C
Indication:	3 positional digital
Measurement unit:	1 °C
Ambient relative humidity:	up to 80%
Protection:	IP20

3. Operation

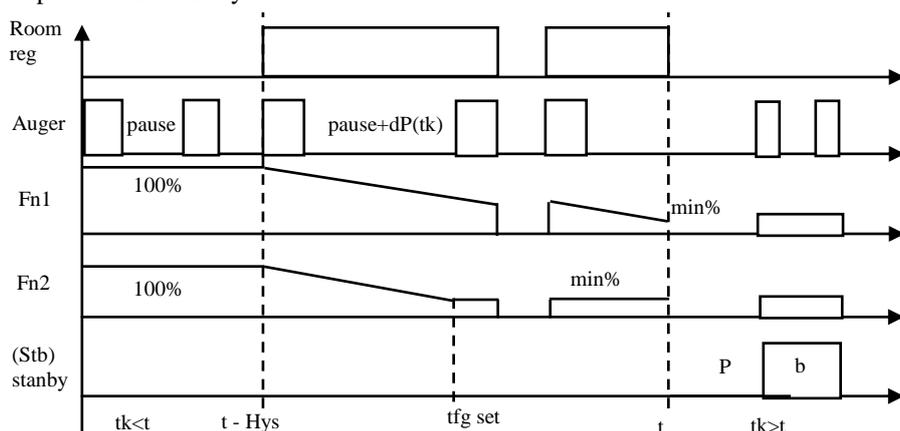
The main principle of operation is based on the regulation of feed air, by means of regulation of fresh air fan speed in relation to outlet boiler water temperature, the state of the room thermostat and the temperature of flue gas fan in case it is installed. There are also output for the management of auger for fuel supply, which is controlled by timer with set times for work and pause. The fans and auger operate in case of closed contact of the room thermostat (need for heating).

In case the water temperature is lower than the assigned one, the fresh air fan operates at max. speed, as reaching the difference between the assignation and the hysteresis the Controller starts decreasing fan speed from max. to min. level in relation to variation of that difference. In case the assigned temperature level is being reached, then both fans stop. Auger works on certain portions of times for work and pause, while reaching the hysteresis begins to increase breaks with dP as a function of boiler water.

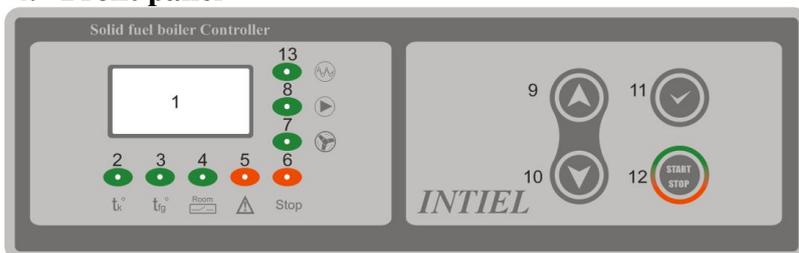
When reaching the set temperature or turn off the room thermostat, stop both the fan and auger. Proceed to standby mode - supplied fuel over a period of time for not to put out the boiler.

When the flue gases temperature is lower than the assigned one, the flu gas fan operates at its maximum speed, as at a temperature of 40 °C lower than the assignation start decreasing of the fan speed from max. to min. one. Once the assigned level of the flue gases temperature is being reached then the flue fan operates at its min. level.

The Controller manages the operation of a circulation pump in order to obtain faster water heating. It is provided by means of adjusting a minimum temperature level at which the circulation pump starts running. Also, the pump works by force in case the room temperature drops below 10°C, in order to provide anti-freezing protection of the system.



4. Front panel



- 1- Indication
- 2- Indication showing measured boiler temperature

- 3- Indication showing measured flu gases temperature
- 4- Indication for switched on room thermostat
- 5- Indication for activated emergency/blocking thermostat
- 6- Indication for a fan stop operation by force
- 7- Indication for fan operation
- 8- Indication for circulation pump operation
- 9- Button for review or change "forward"
- 10- Button for review or change "backward"
- 11- Button enter/escape program mode
- 12- Button for fan start/stop by force
- 13- Indicator of operating the auger;

5. Programming

5.1 Adjusting boiler water temperature. By means of „↑,, and „↓,, buttons the indication is being reviewed, until on the display is being activated " t_k° ", then button „✓" is to be pressed, the symbol "t" appears and its value starts blinking. Again by means of „↑,, and „↓,, buttons it can be made changes within 10 - 90°C. After the changes are being made then button „✓" is to be pressed in order to be saved, as the changes will not be saved in case no one button is being pressed within 15 second.

5.2 Flu gas temperature assignation. By means of „↑,, and „↓,, buttons the indication is being reviewed, until on the display is being activated " t_{fg}° ", then button „✓" is to be pressed, as the value starts blinking. Again by means of „↑,, and „↓,, buttons it can be made changes within 40 - 250°C. After the changes are being made then button „✓" is to be pressed in order to be saved, as the changes will not be saved in case no one button is being pressed within 15 second.

5.3 Adjusting minimum speed of the fans. By means of „↑,, and „↓,, buttons the indication is being reviewed, until on the display is being shown the following symbols: „Fn1"(fresh air) or „Fn2"(flue gases), then button „✓" is to be pressed, the symbol "n" appears and its value starts blinking. Again by means of „↑,, and „↓,, buttons it can be made changes within 10 – 70% with a step of 2%. After the changes are being made then button „✓" is to be pressed in order to be saved, as the changes will not be saved in case no one button is being pressed within 15 second.

5.4 Adjusting the temperature for starting the circulation pump. By means of „↑,, and „↓,, buttons the indication is being reviewed, until on the display is being shown symbol „Pon" as button „✓" is to be pressed, then appears symbol "t", as its value starts blinking . Again by means of „↑,, and „↓,, buttons it can be made changes within 30 - 60°C. After the changes are being made then button „✓" is to be pressed in order to be saved, as the changes will not be saved in case no one button is being pressed within 15 second.

5.5 Adjusting the hysteresis. By means of „↑,, and „↓,, buttons the indication is being reviewed, until on the display is being shown symbol „Hys" as button „✓" is to be pressed, then appears symbol "H", as its value starts blinking . Again by means of „↑,, and „↓,, buttons it can be made changes within 5 - 40°C. After the changes are being made then button „✓" is to be pressed in order to be saved, as the changes will not be saved in case no one button is being pressed within 15 second.

5.6 Adjusting of operating the auger By means of „↑,, and „↓,, buttons the indication is being reviewed, until on the display is being shown symbol „n" /n – time of work of the auger; as button „✓" is to be pressed, then appears symbol "n", as its value starts blinking . Again by means of „↑,, and „↓,, buttons it can be made changes within 1 - 99. After the changes are being made then button „✓" is to be pressed in order to be saved, as the changes will not be saved in case no one button is being pressed within 15 second.

Likewise adjusts the value of the pause / break is indicated by a symbol "u"

6. Emergency situations

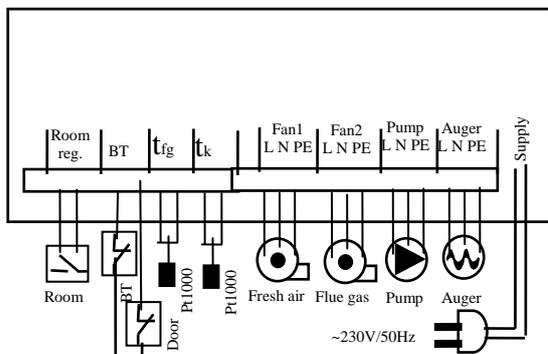
6.1 Activated emergency (blocking) thermostat or a contact for open door – the fans stop operation and indication 5 and 6 is being activated (look the front panel). Check out the state and remove the cause.

6.2 Lack of fuel – if the water boiler temperature during operation cannot exceeds 30°C within one hour time, the fan and circulation pumps stop, indication 6 is being activated. The boiler is to be loaded and afterwards button "Star/Stop" is to be pressed to start the fan.

6.3 Interrupted temperature sensor for a boiler water/flu gases. The indication shows "Hi", as the sensor is to be replaced.

6.4 Short circuit in the temperature sensor for a boiler water/flu gases. The indication shows "Lo", as the sensor is to be replaced.

7. Electrical connections



In case a blocking thermostat (BT) or a room thermostat is not being used, an electrical bridge is to be placed between the relevant terminals.

8. Equipment

The pack contains:

Controller - 1 piece

User manual - 1 piece.

Power cord - 1 piece

Temperature sensor Pt-1000 for the boiler temperature - 1 piece

Regarding the sensor to flue gas must be Pt-1000 /0 up to 400 C/ and is additionally ordered.

9. Warranty

The warranty period is 24 months following the purchase date of the unit or its installation by a qualified staff, but not exceeding 28 months after the production date. The warranty is extended to the malfunctions that occur during the warranty period and are result of the production reasons or defective used parts.

The warranty does not relate to malfunctions corresponding to not-qualified installation, activities directed to the product body interference, not regular storage or transport.

The repairs during the warranty period can be done after correct filling of the manufacturer warranty card

Warranty Card

Manufacturer: INTIEL

Solid fuel boiler Controller (INT0143_Rev.3)

Product type

Production number

Production date

Dealer's confirmation

Purchase date

Invoice number

Dealer's name, address and stamp

Seller's name and signature

Installation date

Date

Company (address, stamp)

Installer's name and signature