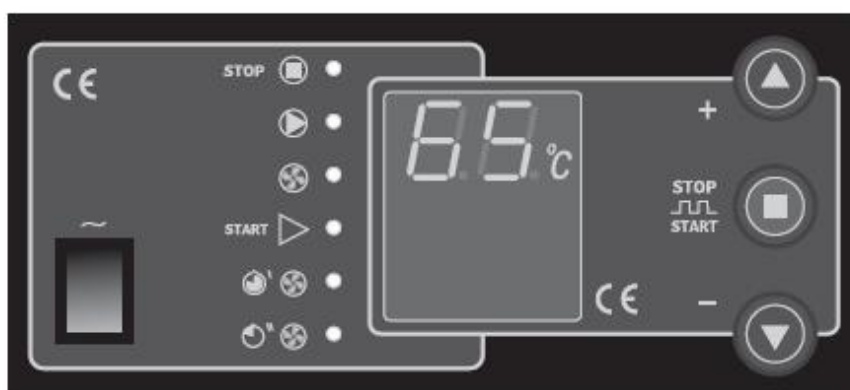


OPERATING INSTRUCTION  
MICROPROCESSOR TEMPERATURE REGULATOR  
FOR WOOD-FIRED BOILERS OF **CRANP-KOVO**

## EKOSTER 2



## APPLICATION

The Microprocessor Temperature Regulator for Central Heating Boiler is designed to control air blow in wood-fired boiler and to actuate the circulating pump in central heating system.

The regulator performs the following functions:

- maintaining the set temperature of boiler by controlling air blow,
- smooth start-up of blower,
- setting the blower power (service mode),
- programmable boiler "blow-through",
- automatic control switch-off after boiler burnout (extinguishes),
- blower disable when feeding the boiler,
- control of central heating circulating pump depending on its set operating temperature,
- "COMFORT SYSTEM",
- protection against freezing or overheating of boiler,
- signalling of temperature sensor damage,
- regulating the brightness of display – increased during readout and change of regulator settings.

After switching on, the regulator passes into "STOP" state signalled by switching on of corresponding lamp. Operation commences after pressing "START" button or automatically when boiler temperature rises above operating threshold – that is, difference between set boiler temperature and factory-set temperature difference "dt". Automatic transition into "STOP" state occurs 30 minutes after boiler temperature drops below operating threshold.

Pushbuttons "+" and "-" serve to change the settings. During normal operation, pressing them causes display and change of set boiler temperature. Pressing and holding pressed causes increase in speed of temperature setting change.

Pressing the "START" button causes:

- with temperature below operating threshold: switching on or switching off control, signalled by "START" or "STOP" indicators respectively,
- with temperature above operating threshold: blower disable signalled by pulsation of "STOP" indicator, enabling feeding of fuel into the boiler. Automatic return to operation after re-pressing the "START" button.

## COMFORT SYSTEM facility

The COMFORT SYSTEM function built into the regulator prevents seizure of the circulating pump by deposition of stone between pump rotor and stator. The regulator automatically actuates the pump after the heating season for about 30 seconds, every 14 days. Operation of the pump in this mode is signalled by pulsation of "PUMP" indicator. The system begins to operate 1 minute after switching on the regulator.

Actuation of the pump in automatic mode causes re-counting of the 14-day period from the beginning.

## Antifreeze and overheating protection system of boiler







The regulator protects the central heating system against freezing by causing actuation of the circulating pump when the temperature drops to 4°C or lower. The pump is constantly on even with temperature sensor breakdown.

### Programming of blow-through

- press "START" and hold for about 3 s until the "OPERATING TIME" indicator switches on,
- set the blow-through time in seconds with pushbuttons "+", "-",
- press "START",
- set the blow-through interval in minutes with pushbuttons "+", "-",
- press "START".

#### NOTE

- *setting the blow-through time to "0" causes blow-through switch off,*
- *above temperature of 95°C, blow-through is switched off to prevent overheating of boiler.*

STOP		STOP
		PUMP OPERATION
		FAN OPERATION
START		FIRING-UP MODE
		BLOW-THROUGH – INTERVAL TIME
		BLOW-THROUGH – OPERATING TIME

### Technical data

1. Measured temperature range	- 9°C to + 99°C
2. Temperature setting range	+ 60°C to +90 °C
3. Temperature at which circulating pump is actuated	+ 65°C
4. Blow-through regulation:	
- operation seconds	0-90
- interval	1-15 minutes
- complete blow-through shutdown	P-0
5. Boiler operation hysteresis (difference in °C between switching on and switching off)	from 2 to 9°C
6. Admissible output loading:	
- air blow	100 W
- pump	100 W
7. Rated supply voltage	230 V AC, 50 Hz
8. Rated load	275 VA
9. Relative humidity of air	≤ 95%
10. Protection rating/category	IP 40

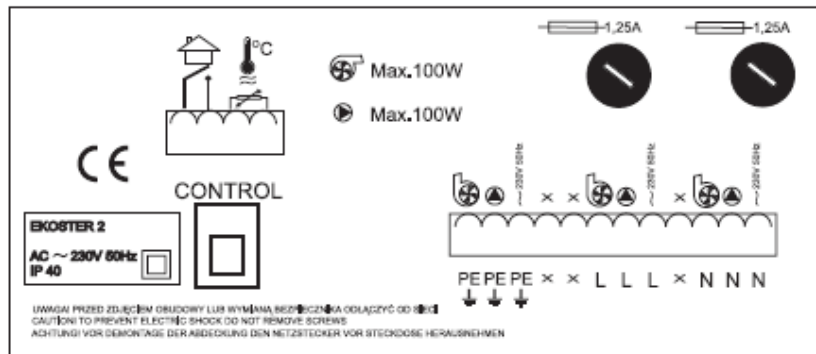
11. Insulation class	I
12. Ambient temperature	0 – 40°C
13. Type of disconnection	full
14. Electrical protection (fuse)	1.25 A

#### NOTE

Appearance of symbol “Er” on the display informs about rise in temperature above 99°C, below -9°C or damaged sensor. To protect the boiler as well as the system until replacement of sensor, the pump will be permanently on.

The regulator is provided with thermal protection permanently switching off fan operation. If the boiler temperature rises to dangerous level, the regulator passes into disable state which is signalled by pulsation of “STOP” diode. After elimination of fault, the error is reset using any button.

### CIRCULATING PUMP, BLOWER FAN, BOILER TEMPERATURE SENSOR AND ROOM THERMOSTAT CONNECTION DIAGRAM



#### Installation instructions

1. The temperature regulator is designed for operation with central heating boilers.
2. Regulator to be connected up by authorized person.
3. Connect up the regulator in accordance with the above diagram.
4. The regulator must be safeguarded against spilling of water and against conditions causing condensation of water vapour (e.g. sudden changes in ambient temperature).
5. The device should be installed and operated in accordance with the principles of procedure with electrical equipment.
6. Fuse burnout does not constitute basis for guarantee repair.
7. It is recommended to check the regulator settings before starting up the central heating boiler.
8. The regulator is protected with 1.25 A fuse.
9. *Connecting up the pump supply cables as well as replacement of fuse should be done with regulator supply switched off (regulator supply plug removed from the supply socket). Connecting up the pump with regulator supply plug in supply socket forms electric shock hazard.*