

Operating Manual

Control Unit ESG-Rn

bx-ESG/Rn 2B20550



Control Unit ESG-Rn – 2B20550



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1. APPLICATION AREA

The ESG-Rn Radon Control Unit offers the ultimate solution for ventilation systems with focus on both radon and humidity control. As heartpiece of any ventilation system it can be utilized against fungi, humidity and radon contamination in an energy-efficient way. Equipped with all necessary sensors, the control unit ESG-Rn operates the ventilation system effortless to ensure a sustainable and comfortable air exchange.

Specific functionality can be customized to fit the environment, be it residential, commercial, mixeduse, cellars, schools and public buildings, or storage facilities for sensitive goods, several software packages offer a solution to almost any circumstance, even ventilation systems with heat recovery.

2. WARRANTY & LIABILITY

2Best Trust Hungary KFT grants a two-year warranty for fabrication errors on parts of the product.Maintainance and repair may only be performed by authorized personnel.

Warranty ceases in case of:

- Unauthorized or improper usage, maintainance, or repair
- changes to the product performed improperly or by unautorized personnel

3. LIEFERUMFANG

1x Control Unit bx-ESG/Rn
2x Humidity and temperature sensors
1x Radon sensor
3x Sensor cable 10 m
1x Power connection 230V
8x Expansion anchors 6 mm
8x Screws



4. TECHNICAL DATA

TECHNICAL DATA

Control Unit ESG/Rn		
Power IN	220 - 240 V~	
Power consumption	3 W	
Relays (potential-free contact, power distribution)	max. 1,000 W	
protection class	2	
Antifreeze	ON/OFF (standard ON)	
Antifreeze temperature	0 - 15 °C (standard 5 °C)	
Ventilation time	0 - 60 minutes (standard 10 min.)	
Break time	0 - 60 minutes (standard 10 min.)	
Switch differential	0,5 g/m³	
Work time start	0.00 Uhr - 23.30	
Work time end	0.00 Uhr - 23.30	
Min. humidity	0 - 100 %	
Max. temperature	0 - 40 °C	
Forced ventilation	0 - 120 minutes (3 programmable intervals)	

Temperature / Humidity sensor		
Measuring interval	8 seconds	
Power consumption	3.2 µW (at 8 bit, 1 measurement / s)	
Measurement range humidity	0 - 100 %	
Measurement range temperature	(-40 125) °C	
Sensitivity humidity	2 %	
Sensitivity temperature	0,3 °C	
Dimensions (HxWxD)	(40x64x24) mm	
Drilling distance	18 mm	

Radon sensor		
Power IN	12 V DC 1A	
Measurement range	3,7 - 3700 Bq/m ³	
Measurement method	pulsed ion-chamber	
Initialisation period	30 minutes	
Dimensions (HxWxD)	(160x87x107) mm	



DIMENSIONS



Dimensions (W x H x D): (155 x 160 x 50) mm

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ELEKTRICAL CONNECTIONS



The Control unit can be operated as power distributor, as well as as potential-free contact. Differences are outlined below.



power distribution

This circuitry allows for direct power supply of ventilators or other consumers with 230 V AC current.

The in-built relays opens the power connection according to the control unit's status.

You may supply any number of consumers with a total power consumption of **no more than 1,000 W**.

potential-free contact



This circuitry allows status control over signalling wires, i.e. connected consumer's neutral wires and connected DC consumer's polarized wires.

You may control any number of consumers with a total current flow of **no more than 1 A**.



Power distribution



Potential-free contact





Tension relief

All cables must be secured with this tension relief bridge.



5. OPERATION

INSTALLATION REFERENCE

Use the Test Run menu, to ensure proper operation of the device and any connected sensors, as well as consumers. You may check for current status on the main display.

Review the following proper installation instructions before installing!

Sensors must be placed at least 50 cm above ground, protected by rain, ideally on a northwards oriented wall. Install sensors only in day-long shaded area.

Disregard results in falsified measurements and improper operation!

Do not install interior sensors on wet surfaces or in direct air pathways created by the ventilation system. Do install sensors closely to most affected areas.

When using a sensor for temperature control, install in hottest/coldest area.

After installation, the control unit takes 30 minutes to seliver first values.

INSTALLATION

- 1. Draw drilling holes
- 2. Drill, set expansion anchors
- 3. Screw in top holes, leave 3 mm protrusion
- 4. Hang in control unit
- 5. Open control unit by unscrewing lower screws. Remove lid
- 6. Screw in bottom holes, fixating the device
- 7. Wire according to circuit diagram (4.)
- 8. Connect sensor lines
- 9. Open sensors by removing sliding lid
- 10. Fixate sensors with screws and suspension anchors
- 11. Fixate tension relief
- 12. Close sensor sliding lids, plug in sensor lines, close control unit lid
- 13. Set Base settings by pressing red cog key
- 14. Leave menu by pressing red cog key again. The device will now start to operate.



Setting a PIN-code can protect the device's settings from unwanted access and manipulation. In the Settings menu, choose "Set PIN". Enter a 4-digit PIN-code. After activation, some options may not be changed. You can unlock the device in the same menu again.

In case of loosing the PIN, the device may be unlocked with a master PIN, available at your distributor.

OPERATION REFERENCE

The ESG-Rn will measure radon contamination, humidity and temperature data regularly. It will turn on the system, if the contamination can be lowered, while not exceeding or falling below the set temperature and humidity thresholds. This way we ensure targeted, energy-efficient ventilation while preventing high humidity damages, like mold and fungus growth.

KEYBOARD KEYS & DISPLAY

The Keyboard consists of:

- Directional pad
- OK-Key
- Settings key (red)

The 4-line LC-display shows all important data. Using the arrow keys, you can move through the different pages of the operation display. A flashing cursor indicates a variable value. You may change that value using the up and down keys. You don not need to save changes. To access the settings menu, press the red settings key.



NAVIGATION

VARIABLE VALUES

These values may be changed:

- Date & Time
- PIN-code
- Ventilation time
- Break time
- Work time
- Forced ventilation

- Humidity thresholds
- Temperature thresholds
- Anti freeze usage
- Anti freeze temperature
- Switch differential



OPERATION DISPLAY

This menu consists of several informative pages, giving insight over the current operational status of the ventilation system. Using the arrow keys, you can navigate through the different pages, as well as change values to your desire.

Information pages

Page	Shown values
Measurements 1	Temperature
	Relative humidity
	Radon contamination
	Ventilation status
Absolute humidity	Interior humidity
	ExteriorhHumidity
	Ventilation status
Temperature	Interior temperature
	Exterior temperature
	Ventilation status
Relative Humidity	Interior humidity
	Exterior humidity
	Ventilation status
Date	Date
	Time

Variable Value Pages

Page	Variable Values
Radon	Radon threshold
Anti freeze	ON / OFF
	Anti freeze temperature
Humidity	Lower relative humidity threshold
	Switch differential
Temperature	Lower exterior temperature threshold
	Upper interior temperature threshold
Ventilation & break time	Ventilation time
	Break time
Work time	Work time start
	Work time end
Forced ventilation	Time of forced ventilation. Up to three intervals may be
	configured.

SETTINGS MENU

By pressing the red settings key, you may access the settings menu, which offers systemic options. Navigate as usual using the arrow keys. By pressing the OK key, you can change a chosen option, if not described differently. By pressing the OK key again, you can save the changes.



Page	Variable Values
Test run	By pressing OK, you toggle the test run.
Date / Time	Date
	Time
Factory Settings	Reset the device to factory settings. Confirm with right arrow key,
	cancel with left-arrow key.
Relays ON / OFF	Toggle the Relays with OK.
Language	Choose a Language.
Display-Off-time	Set time before the display shuts off.
Set PIN	Set Pin-code
Log-Data	Display for Memory allocation. Hold the up arrow for 3 seconds to delete all logged data.

6. SAFETY INSTRUCTIONS

- 1. Disconnect all electrical parts from power grid completely before any installation, maintainance or repair work! Wait for all fans and lights to shut off!
- 2. All installed parts must be visually inspected before electrical installation!
- 3. Controllers or ventilation units may not be operated in fire explosion hazardous environments!
- 4. Ventilation systems must be ensured to not cause gas recirculation or reverse currents. Disregard endangers life!

7. CONTACT



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