INSTRUKCJA OBSŁUGI

Sterownik HRQ-BUT-LCD

USER MANUAL

Controller HRQ-BUT-LCD

Wersja / version: 0723

1. About this document

1.1 How to use this document

This document belongs to the HRQ-BUT-LCD. In this document the HRQ-BUT-LCD is also referred to as 'device'. It is intended for use by end-users and qualified installers. Make sure that you have read and understood this document before you use or install the device.

1.2 Original language

The original text of this manual is written in English. Versions of this document in other languages are translations of the original text.

1.3 Symbols and signal words used

DANGER
Means that death, serious personal injury, or damage to the device will occur if you do not obey the instructions.

CAUTION
Means that minor personal injury, or damage to the device can occur if you do not obey the instructions.

IMPORTANT
Means that damage to the device, or its environment can occur if you do not obey the instructions.

NOTE
Is used to give additional information.

2. Safety

2.1 Directives

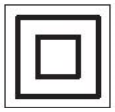
The manufacturer declares that the HRQ-BUT-LCD complies with the requirements and provisions of the directives:

- EMC directive 2014/30/EU,
- Low voltage directive 2014/35/EU,
- RED directive 2014/53/EU,
- RoHs directive 2002/95/EC,
- WEEE directive 2002/96/EC.

2.2 Signs on the unit


Caution


Danger: risk of electric shoock


IEC 61140 protection

CE marking of comformity

Dispose of the device in accord with the European Community Directive 2002/96/EC (WEEE).

2.3 General safety instructions

- Obey local safety, labour and environmental regulations.
- Obey all safety signs on the device.
- Be alert and use common sense when you work with the device.
- Disconnect the power supply when you install or re-install the device.
- Do not expose the device to moisture or water.
- The device is designed for indoor use only.
- Operate the device within its ambient limits.
- Clean the device with a soft damp cloth only. Never use abrasives or chemical cleaners.
- Do not paint the device.

3. Description of the device

3.1 Intended use

The device is a user and installation interface to monitor and set the connected heat recovery unit (HRU-PremAIR series). Any other use of the device is not in accordance with its intended use.

3.2 Working principle

The device sets and monitors an indoor HRU. This unit controls the indoor air quality by varying the ventilator speed. The device uses wireless communication (RF) to communicate with the HRU. Capacitive touch buttons on the device allow for changes in settings of the HRU. The liquid crystal display (LCD) or screen of the device shows the actual working state the unit is in. When a malfunction of, or a problem with the HRU occurs, the sceen shows the fault of the system.

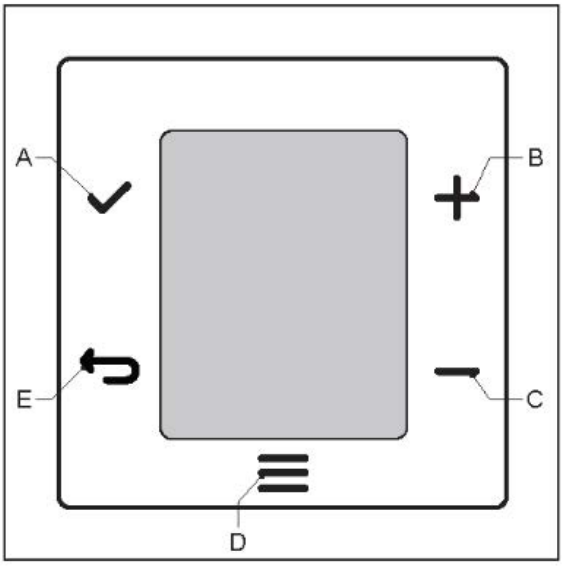
3.3 Overview of the device

The device is equipped with an interface that consists of five capacitive buttons and a screen.

HRQ-BUT-LCD

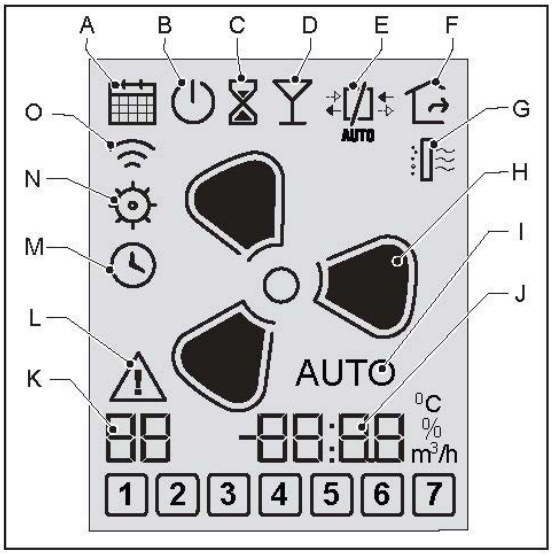
3.3.1 Capacitive buttons

The device can be controlled by five capacitive touch buttons only.



A	OK button	Touch to start or activate the selected mode.
B	UP button	Touch to increase the number or the item on the display.
C	DOWN button	Touch to decrease the number or the item on the display.
D	MENU button	Touch to go through the available menu settings.
E	BACK button	Touch to go back to the default screen.

3.3.2 Icons on the LCD



A CLOCK PROGRAM MENU
B ON / OFF indicator
C TIMER mode
D PARTY mode
E HEAT EXCHANGER menu
F STANDBY mode
G FILTER RESET monu
H Ventilator speeds. One of these four icons can be seen:

Speed **Mode**	*High* **HOME+**	*Intermediate* **HOME**	*Low* **AWAY**	**STANDBY**
Ikona				

I AUTO mode – When AUTO does not show, the ventilator speed is in MANUAL mode
J 4-digit actual value display
K 2-digit actual value display
L Fault indicator - Refer to the HRU manual for an overview of fault indicator codes.
M DATA and TIME menu
N SENSOR VALUES menu / SETTINGS menu
O BINDING menu

3.3.3 Default screen

The default screen shows the current state of the HRU: the actual ventilator speed, the bypass status and the clock program. If there is a fault in the HRU, the fault indicator icon and the fault indicator code show on the screen.

4. Operation and menus

4.1 Make the screen come on

Touch any capacitive button to power-up the device. The screen shows the actual setting of the HRU.

4.2 Operating mode

NOTE:
Depending on the capabilities of your HRU, you may not be able to select all the modes described below. Only the modes that are supported by your HRU are visible on the screen. Residential air handling units HRU-PremAIR sold before February 2021 do not have internal clock, therefore CLOCK PROGRAM is not available.

4.2.1 Select AUTO mode

To start the AUTO mode, touch the UP button ⊞ or the DOWN button ⊟ again and again until the AUTO mode icon AUTO comes on. AUTO mode is available if at least one external sensor ids binded (HRQ-PremAIR-SENS-CO2 or HRQ-PremAIR-SENS-RH).

4.2.2 Select MANUAL mode

When in AUTO mode, use the UP button ⊞ or the DOWN button ⊟, to leave the AUTO mode. Touch the UP or DOWN button again and again to select the correct ventilator speed. Refer to 3.3.2. for the speed settings of the ventilator.

4.2.3 Select AWAY mode

To start the AWAY mode, touch the UP button ⊞ or the DOWN button ⊟ again and again until the AWAY mode icon comes on.

4.2.4 Select PARTY mode

To start the PARTY mode, touch the UP button ⊞ or the DOWN button ⊟ again and again until the PARTY mode icon comes on.

4.2.5 Select TIMER mode

To start the TIMER mode, touch the UP button ⊞ or the DOWN button ⊟ again and again until the TEMPORARY mode icon comes on. The TIMER mode stays on for 60 minutes.

4.3 FILTER RESET menu

IMPORTANT:
This menu is only visible when the filter is dirty. Replace the filter in the HRU before you do a FILTER RESET on the device. In the HRU-PremAIR air handling units the icon signaling dirty filter appears every 90 days (from RESET).

1. Touch the MENU button. The FILTER RESET icon shows.
2. Touch the OK button, to enter the FILTER RESET menu.
3. The device sends a filter reset message to the HRU. The TIMER mode icon shows.
4. The DEFAULT screen shows. If the FILTER RESET was successful, the FILTER RESET icon disappears.

4.4 HEAT EXCHANGER menu

NOTE:
This menu is only visible if your HRU supports bypass functionality.

The heat exchanger increases the temperature of the air inflow. If you do not want the air inflow to be warmed up, you can disable the heat exchanger.
When the bypass is open, the inflow of air does not pass the heat exchanger.

1. Touch the MENU button again and again until the HEAT EXCHANGER menu icon shows.
2. Touch the OK button, to enter the HEAT EXCHANGER menu.
3. Touch the UP button or the DOWN button again and again until the desired HEAT EXCHANGER mode appears:

Icon	*Message displayed*	*BYPASS mode*	*HEAT EXCHANGER mode*
	____	no communication	no communication
	AUTO	BYPASS in auto	HEAT EXCHANGER in auto
	ON	BYPASS open	HEAT EXCHANGER off
	OFF.	BYPASS closed	HEAT EXCHANGER on

4. Touch the OK button, to set the HEAT EXCHANGER mode and return to the default screen. Once the HRU communicates that the new HEAT EXCHANGER mode has been applied, the correct HEAT EXCHANGER mode icon shows on the default screen. This can take up to a minute.
5. Touch the BACK button, to return to the default screen without changing the HEAT EXCHANGER mode.

4.5 SENSOR VALUES menu

1. Touch the MENU button again and again until the SENSOR VALUES menu icon shows.
2. Touch the OK button, to enter the SENSOR VALUES menu.
3. Touch the UP button or the DOWN button, again and again to go through the sensor values. The 2-digit display shows the sensor.

Sensor value number	*Sensor value name*	*Uwagi*
1	SW version of HRU	
2	Air quality (%)	Option for an integrated VOC sensor*
3	CO_2 level (ppm)	Option for an integrated CO^2 sensor*
4	Indoor humidity (%)	Option for an integrated RH sensor*
5	Outdoor humidity (%)	Option for an integrated RH sensor*
6	Exhaust temperature (°C)	
7	Supply temperature (°C)	
8	Indoor temperature (°C)	
9	Outdoor temperature (°C)	
10	Bypass position (%)	
11	Exhaust fan speed (%)	Actual readouts
12	Inlet fan speed (%)	Actual readouts
13	Remaining TIMER mode time (min)	
14	Pre-heater (%)	If the heater with 0 ... 10V control is installed
15	Post-heater (%)	If the heater with 0 ... 10V control is installed
16	Inlet flow (m^3/h)	Readout possible for version with CF
17	Exhaust flow (m^3/h)	Readout possible for version with CF

*These sensors are currently not supported by the control system in the air handling unit.

If the sensor value is not supported by your HRU, the 4-digit display shows --. If the sensor value cannot be measured because of a malfunction, the 4-digit dsplay shows -- and the fault icon ⚠ appears.

4. Touch the BACK button ↩ to return to the default screen.

4.6 CLOCK PROGRAM menu

NOTE:
This menu is only visible if your HRU supports CLOCK PROGRAM functionality.

1. Touch the MENU button ☰ again and again until the CLOCK PROGRAM menu icon ▦ shows.
2. Touch the OK button ☑, to enter the CLOCK PROGRAM menu.
3. Touch the MENU button ☰ again and again to go through the available CLOCK PROGRAM functions:

Icon	*Function*
	enable and disable a CLOCK PROGRAM
	CLOCK PROGRAM settings
	variables CLOCK PROGRAM

4. Touch the OK button ☑ to select the desired function.

4.6.1 Enable and disable a CLOCK PROGRAM

1. Use the CLOCK PROGRAM menu to go to the CLOCK PROGRAM enable and disable function refer to 4.6.
2. Touch the UP button ⊞ or the DOWN button ⊟ to select a state. The display shows OFF or ON to indicate the state.
3. Touch the OK button ☑ to set the CLOCK PROGRAM to the desired state and return to the default screen. Touch the BACK button ⮌ to return to the CLOCK PROGRAM menu with-out changing the CLOCK PROGRAM state.

4.6.2 Change the CLOCK PROGRAM settings

1. Use the CLOCK PROGRAM menu to go to the CLOCK PROGRAM settings, refer to 4.6.
2. Touch the UP button ⊞ or the DOWN button ⊟ to select a clock program type. The display shows the days of the week for the clock program.

CLOCK PROGRAM type	*Description*
1	set one clock program that is applied every day of the week
1 6	set one clock program for weekdays and one clock program for the weekend
1 2 3 4 5 6 7	set a different clock program for every day of the week

3. Touch the OK button ☑ to confirm the clock program type.
4. Touch the UP button ⊞ or the DOWN button ⊟ to select the desired switch points.
5. Touch the OK button ☑ to confirm the number of switch points. The CLOCK PROGRAM settings are stored.
6. Touch the BACK button ⮌ to return to the CLOCK PROGRAM menu without changing the CLOCK PROGRAM settings.

4.6.3 Edit the CLOCK PROGRAM switch points

1. Use the CLOCK PROGRAM menu to go to the CLOCK PROGRAM switch points, refer to 4.6.
2. Touch the UP button or the DOWN button again and again to go through the available switch points. The selected switch point blinks.
3. Touch the OK button to select a switch point for editing.
4. Touch and hold the UP button or the DOWN button to set the switch point time. Touch the OK button to confirm the time.
5. Touch the UP button or the DOWN button to set the switch point mode. Touch the OK button to confirm the new switch point settings. Touch the BACK button to return to the CLOCK PROGRAM screen without changing the switch point settings.

4.7 DATE AND TIME menu

1. Touch the MENU button again and again until the DATE AND TIME menu icon shows.
2. Touch the OK button to enter the DATE AND TIME menu.
3. Touch the UP button or the DOWN button to set the year. Touch the OK button to go to the next screen.
4. Touch the UP button or the DOWN button to set the month. Touch the OK button to go to the next screen.
5. Touch the UP button or the DOWN button to set the day of the month. Touch the OK button to go to the next screen.
6. Touch the UP button or the DOWN button to set the time.
7. Touch the OK button to store the DATE AND TIME settings. Touch the BACK button to return to the default screen without changing the DATA and TIME.

5. Installation

5.1 Prepare for installation

DANGER:
Make sure that the electric power supply is switched off before you install the device.
Do not install the device in a metal casing.
Make sure that the mains voltage is 230 VAC, 50 Hz.

5.2 Installation procedure

Install the device according to the local requirements. The installation must be done by a professional.

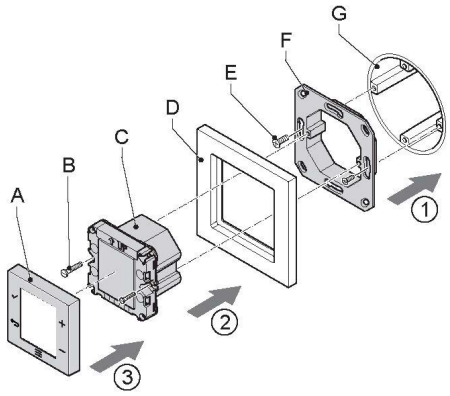
5.2.1 Connect the wiring

MOTE:
Make sure that you use AWG12-24, 0.2-2.5 mm² wires to connect the power supply.

1. Connect N to the neutral or blue wire of the mains supply.
2. Connect L to the live or brown wire of the mains supply.

5.2.2 Install the device

IMPORTANT:
To install the device use hardened and galvanized 2.2 × 12 PT10 or M2.2 × 12 cross recess plan plas-fix45° screws.



1. Attach the wall frame (F) to mounting box (G). Use the correct screws (E).
2. Pull the power supply wires through the design frame (D).
3. Plug the wires in the correct connection of the device. Refer to 5.2.1.
4. Attach the device (C) with the correct screws (B) to the wall frame (F). Make sure that the design frame (D) is located correctly between the device and the frame (F).
5. Place and push the cover (A) over the device (C).

5.3 Damage to the device

If the enclosure of the device shows signs of damage, or if parts are missing, the device must be disconnected from its power source.

5.4 Commissioning

CAUTION:
Make sure that the power supply is connected correctly. Refer to 5.2.1.

NOTE:
Refer to the HRU manual to set the HRU to binding mode.

1. Enable the power supply to the device.
   a. All icons on the display show for three seconds.
   b. After three seconds the software version of the device will show in the right hand bottom corner of the display.
   c. The device automatically starts the RF binding for communications with the HRU. Refer to 6.1.
2. If the binding is successful and a connection with the HRU is established, the screen shows BND. The device goes to the default menu. The device is ready for use.
3. If the binding is not successful, the screen shows the fault icon ⚠ and the message NO BND shows. Touch the OK button ☑ to start a new binding attempt.

6. Configuration

The device can only be configured in the Installer menu.
To start the Installer menu touch the MENU button for 10 seconds or more. The menus that can be set become available. There are two: the BINDING menu and the SETTINGS menu.

6.1 Set the BINDING

You can use the BINDING menu to set a new binding.

1. Touch the MENU button again and again to go through the menus.
2. Touch the OK button when the binding icon shows. The icon starts to blink.
3. Touch the OK button again. The device connects with the HRU automatically.
   a. If the new binding is correct, the display shows BND.
   b. If the binding is not correct, the display shows NO BND. The old binding is maintained.
4. Touch the BACK button to return to the installer menu.
5. Touch the BACK button again to exit the installer menu.

6.2 SETTINGS menu and change settings

NOTE:
Refer to the HRU manual for the available settings.

6.2.1 Enter the SETTINGS menu

1. Touch the MENU button again and again to go through the menus.
2. Touch the OK button when the service menu icon shows.
3. The 2-digits value display on the left show an index-number that blinks. The corresponding value and unit of this setting is given by the 4-digit value display on the right.
4. Touch the UP button or the DOWN button to go through the index-number.

NOTE:
When a value is not available the 4-digit value display shows four dashes.

6.2.2 Change a setting

1. To change the setting enter the SETTINGS menu. Refer to 6.2.1.
2. Select the correct index-number.
3. Touch the OK button. The 4-digit value display starts blinking.
4. Touch the UP button or the DOWN button to change the value of the setting.
5. Touch the OK button to keep the correct setting. The 2-digit value display blinks.
6. Repeat the steps 2 to 5 to change any other settings.
7. Touch the BACK button to exit the settings menu.

6.2.3 Keep a setting

1. Touch the BACK button to keep a setting that was not changed.

6.2.4 Settings list

NOTE:
The settings of the supply and exhaust fans are not identical, it results from the design of the air handling unit. If you change the settings of the fans, use the difference (offset) between the SUPPLY and EXTARCT fans.
Reference factory values can be found in the manual for the air handling unit.

No	*Description*	*Range Standard/CF**	*Default value*
1	Standby speed supply	0-40% / (m^3/h) *	Depending on the units
2	Standby speed exhaust	0-40% / (m^3/h) *	Depending on the units
3	Low speed supply	0-80% / (m^3/h) *	Depending on the units
4	Low speed exhaust	0-80% / (m^3/h) *	Depending on the units
5	Medium speed supply	0-100% / (m^3/h) *	Depending on the units
6	Medium speed exhaust	10-100% / (m^3/h) *	Depending on the units
7	High speed supply	0-100% / (m^3/h) *	Depending on the units
8	High speed exhaust	10-100% / (m^3/h) *	Depending on the units
9	Boost speed supply	0-100% / (m^3/h) *	Depending on the units
10	Boost speed exhaust	10-100% / (m^3/h) *	Depending on the units
11	Frost protection pre-heater setpoint	from -20°C to +50°C	-3°C
12	Pre-heater function selection	0 – no pre-heater present 1 – ON/OFF Control 2 – Modulating control	1
13	Pre-heater test	0 – normal pre-heater operation 1 – heater on for 10 seconds	0
14	Bypass manual control	0 – Normal valve operation 1 – Open valve 2 – Close valve	0
15	Daylight saving	1 – None 4 – Europa	4
16	Time-zone offset	from -840 to +840 min in 30 min increments	0
17	Time edit mode	0 – User 1 – Auto 2 – Bridge	1
18	Time shedule type	1 – 24 h (every day the same) 2 – 5-2(Mon-Fri, Sat-Sun) 3 – 7 day	2
19	Geothermal heat exchanger outdoor temperature below	from 0°C to +10°C	5
20	Geothermal heat exchanger outdoor temperature above	from +15°C to +40°C	25
21	Geothermal heat exchanger valve output	0 – OFF GHE 1 – ON GHE	0

22	Frost sensor	0 – antifreeze protection function disabled 1 – - 2 – Intake sensor (T4) 3 – - 4 – Ejector sensor (T3)	2
23	PIR Detection Minimum Speed Supply Percentage	0-100%	Depending on the units
24	PIR Detection Minimum Speed Exhaust Percentage	0-100%	Depending on the units
25	PIR Detection Minimum Duration	0-255 min	15
26	Season Detection Heating Threshold	0-30 °C	18
27	Season Detection Cooling Threshold Offset	0-10°C	2
28	Post heater/cooler select output	0 – Output inactive 1 – - 2 – - 3 – Relay output X28	Depending on the requirement
29	Post heater/cooler mode	0 – No secondary heater/cooler 1 – Secondary heater 2 – Secondary cooler 3 – Secondary heater/cooler	Depending on the requirement
30	Post heater/cooler mode input	0 – No signal definition 1. NZ=heating NO – cooling 2. NO – heating NZ – cooling	Depending on the requirement
31	Generic switch exhaust fan demand type	0 – No signal definition 1 – - 2 – - 3 – - 4 – Fireplace/ hood	Depending on the requirement
32	Room temperature heating setpoint	-20-50 °C	Depending on the requirement
33	Room temperature offset cooling setpoint	0-10°C	Depending on the requirement

*only for the units with constant air flow functionality

7. Technical data

7.1 Certifications

LVD and EMC directive
Rohs and WEEE compliant

7.2 Dimensions

Dimensions (H × W × D): 55 mm × 55 mm × 35 mm.

7.3 Ambient conditions

Operating temperatures: 0 – +40°C
Relative humidity: 5 – 95%, non-condensing
Shipping and transportation conditions: -20 – +60°C

7.4 Electrical specifications

Power supply: 230 VAC, 50 Hz
Power consumption: less than 1 Watt (in standby mode).

8. Fault Codes & Diagnostics

Fault code (DEC)	*Fault code (HEX)*	*Description*	*Cause*	*Result*
0	00	No error (power on)	-	-
2	02	Emergency temperature stop	Supply temperature too low or supply sensor error	Pre-heater off, post-heater/cooler off, fans off, bypass closed
19	13	Communication error with Multizoning Component	No communication with Multizoning Component for more than 1 hour	Multizoning Control Function de-activated
13	0D	Both fans error	Both fans (exhaust and supply) have an error (see exhaust and supply fan errors for details)	Pre-heater off
3	03	Supply fan error	PWM fan: No tacho signal in case on, or tacho signal in case off Modbus fan: error indicated by fan	Pre-heater off
8	08	Exhaust fan	PWM fan: No tacho signal in case on, or tacho signal in case off Modbus fan: error indicated by fan	None
14	0E	General Modbus error	Communication to both fans fail	Pre-heater off
15	0F	Exhaust Modbus error/Constant pressure error	Communication to exhaust fan fails/Constant pressure cannot be reached (pwm remained at 100% for more than 1 minute indicating the required constant pressure cannot be achieved)	No action
16	10	Supply Modbus error	Communication to supply fan fails	Pre-heater off

20	14	I2C Bus error	Low level I2C bus communication error for at least 60 seconds. Fault is shown in actual data within 120 seconds.	No actions
4	04	Exhaust sensor error	Sensor fault	Bypass closed, no passive heating/cooling possible
5	05	Inlet sensor error	Sensor fault	Bypass closed, pre-heater off, no passive heating/cooling possible
6	06	Supply sensor error	Sensor fault	Emergency stop
7	07	Outlet sensor error	Sensor fault	Pre-heater off
17	11	NTC Flow Measurement T1 error	Measurement failed	Fan1 is switched off when fan is flow controlled
18	12	NTC Flow Measurement T2 error	Measurement failed	Fan2 is switched off when fan is flow controlled
10	0A	RH sensor error	Values out of range or communication error	None
9	09	Dirty filter	Filter timer expired, or max. amount of ventilation volume exceeded or filter not present	No actions
21	15	System unable to do heating or cooling	If system has a heating demand but no actual heating takes place this error is set. Similarly, if the system has cooling demand but no actual cooling takes place, this error is set.	No actions
254	FE	Binding mode	Binding mode is active, this is no fault	Normal operation