



KNX RF+ Heating Valve Drive with display, Secure

RF-HVA1Dxx.01S

Further documents:

Data sheets:

<https://www.mdt-group.com/for-professionals/downloads/datasheets.html>



Assembly and operating instructions:

<https://www.mdt-group.com/for-professionals/downloads/assembly-and-operation-instructions.html>



Solution proposals for MDT products:

<https://www.mdt-group.com/for-professionals/tips-tricks.html>



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2 Overview

2.1 Overview devices

This manual applies to the following devices (article numbers **in bold**).

- **RF-HVA1DAA.01S** KNX RF+ Heating Valve Drive with display and 2x AA battery, Secure.
- **RF-HVA1DLB.01S** KNX RF+ Heating Valve Drive with display and long-life battery, Secure.

2.2 Functions

Self-sufficient due to battery operation

The Heating Valve Drive operates on battery power and is therefore completely autonomous. Additional wiring for KNX-Bus or power supply is not required.

Integrated Temperature Controller

An integrated temperature sensor detects the room temperature and sets the valve position of the heating valve drive according to the setpoint.

Local setpoint setting (Only for RF-HVA1Dxx.01S)

The setpoint for temperature control can be adjusted on the Heating Valve Drive.

Display for status output (Only for RF-HVA1Dxx.01S)

Status messages such as setpoint, battery level and connection status can be displayed via the display.

Detection of "window open" via temperature drop detection

Temperature drop detection can be used to determine whether a window has been opened. A sudden drop in room temperature is detected, indicating that the window has been opened. When the window is open, the setpoint temperature is set to an adjustable value for a period of time.

Detection of "window open" via window contact

A window contact or a "smart window handle" can be used to determine whether a window is open. When the window is open, the setpoint temperature is set to an adjustable value for a period of time.

Output of the battery status

The battery status of the Heating Valve Drive is output cyclically as a percentage value.

Transmitting a warning message in case of low battery voltage

An adjustable threshold value can be used to issue a warning message once or cyclically if the battery voltage falls below a specified level.

Lockable buttons (Only for RF-HVA1Dxx.01S)

The buttons for setpoint adjustment can be locked via the ETS.

Updateable via MDT Firmware App

If necessary, the device can be updated with the ETS via the MDT Firmware App. The download is available free of charge at www.mdt.de/downloads.html and www.knx.org.

2.3 Structure and handling

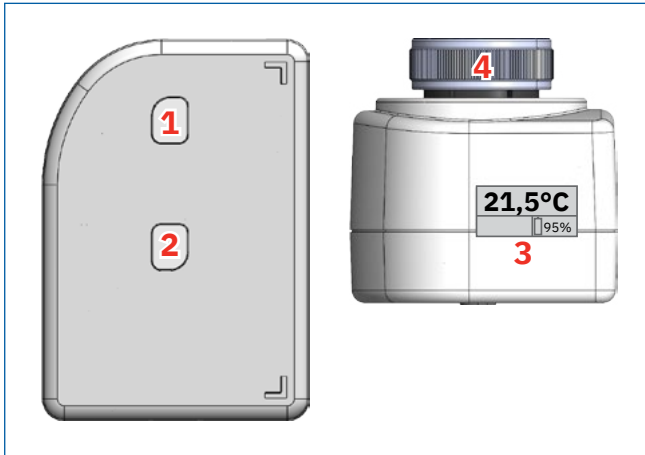


Figure 1: Device with display – structure and operation

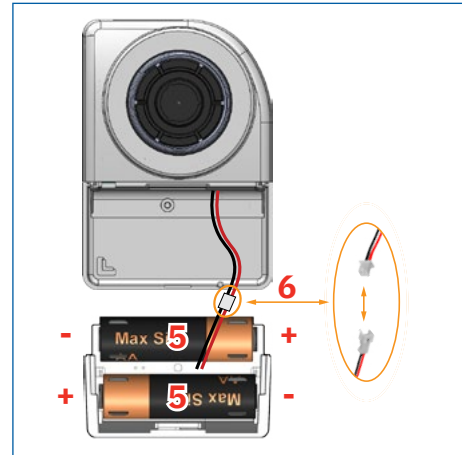


Figure 2: Position and connection of the batteries

- | | |
|--|--------------------------------|
| 1 – Upper function button | 2 – Lower function button |
| 3 – Display | 4 – Cap nut M 30 x 1.5 |
| 5 – Battery 1.5V AA (not a rechargeable battery) | 6 – Connector for battery case |

2.4 Commissioning

Important: An adaptation run must only be carried out after complete assembly. If this notice is not observed, the device may be damaged.

2.4.1 Assembly

1. Remove existing thermostat

- Set the thermostat to the maximum temperature to fully open the valve and make removal easier.
- Loosen the cap nut that connects the thermostat to the valve insert and remove the thermostat.

2. Connect battery

- Press the battery case release below the battery compartment and simultaneously slide the battery case backwards.
- Insert the batteries into the battery case with the correct polarity and connect the battery unit to the Heating Valve Drive.
- Slide the battery compartment back onto the valve drive along the guide grooves until it clicks into place.

3. Carry out mechanical installation

- Wait until the actuator spindle has fully retracted. Meanwhile, the message "Wait – Device opens for install" appears.
- After completion of the retraction movement, the message "Install – Confirm with keypress" appears.
- Screw the Heating Valve Drive hand-tight (5 – 8 Nm) onto the valve insert. The installation position can be chosen freely.

4. Start adaptation run

- Press any button to start the adaptation run. The message "Wait – Device is adapting" appears on the display.
 - If the adaptation run is successful, the message "Success – Adaptation performed" appears. This message disappears and the start display appears.
 - If the adaptation run fails, the message "Valve not recognised" appears. This message is permanently displayed. Restart the adaptation run by pressing a button.

2.4.2 Commissioning as KNX RF+ device

Note: To start up with ETS, you need to have an RF+ radio line coupler in the KNX topology that's enabled to add devices.

1. Install the Heating Valve Drive according to the installation instructions contained in this document.
2. Before commissioning the KNX RF+ device, programming of the KNX RF+ line coupler is required.
3. Assign a physical address and create the application program in the ETS.
4. Set the device to programming mode:
 - Press both buttons (1 and 2) on the device simultaneously for 2 seconds.
 - The device switches to the menu for device settings, the symbol ">>" is displayed at "Prog-mode".
 - Briefly press the upper button (1) to activate the menu option. The display shows "Prog-Mode".
5. Load the physical address and the application program into the device.

Note: The device may be in 'deep sleep mode'. In this mode, data cannot be received. To ensure reliable telegram transmission, it is recommended that the device be set to programming mode before the application programme is transferred.

2.4.3 KNX Secure

The use of KNX Secure functionality requires ETS version 5.7 or higher.

KNX Secure has two different ways: IP Secure and Data Secure.

KNX IP Secure enables secure transmission in IP networks by encrypting and authenticating transmitted messages. IP Secure assures that KNX tunneling or routing messages at the IP level cannot be read or manipulated. KNX IP Secure forms an additional security layer that protects all KNXnet IP data traffic.

KNX Data Secure ensures that messages/telegrams sent by KNX devices (regardless of the KNX medium) are encrypted and/or authenticated, provided that both participants are KNX Data Secure-enabled. If one of the participants does not support KNX Data Secure, communication will continue to be unencrypted.

Device certificate

Device certificate The device certificate is used to ensure the secure commissioning of a KNX Secure device. The key contained in the certificate must be scanned or entered once by the integrator/installer in the ETS. The device certificate is no longer required for further transmissions, unless the device is reset via a master reset (see [2.5 Reset to factory settings](#)). The certificates of all devices in a project should be removed from the device label after initial commissioning and stored for the specific project.

Secure Mode

If a device is operated with security enabled, it works in "secure mode" and transmits data in encrypted form. Identifiable by the blue shield symbol.

Unsecured mode - Plain Mode

Plain Mode If a device is operated without security enabled, this is referred to as "unsecured mode" (plain mode). The data are transmitted unencrypted.

2.4.4 Project password

Activated KNX Secure requires an ETS project password. Without a project password, secure commissioning is not possible and the devices will be loaded in unsecured mode.

2.4.5 Commissioning with activated KNX Secure

When importing the application program into the KNX project, a message appears indicating the need for a project password. If you cancel at this point, the device will be loaded without KNX Secure functions. The device certificate is then entered. If a webcam is connected, this can be done by scanning the QR code; alternatively, the certificate can be entered via the keyboard.

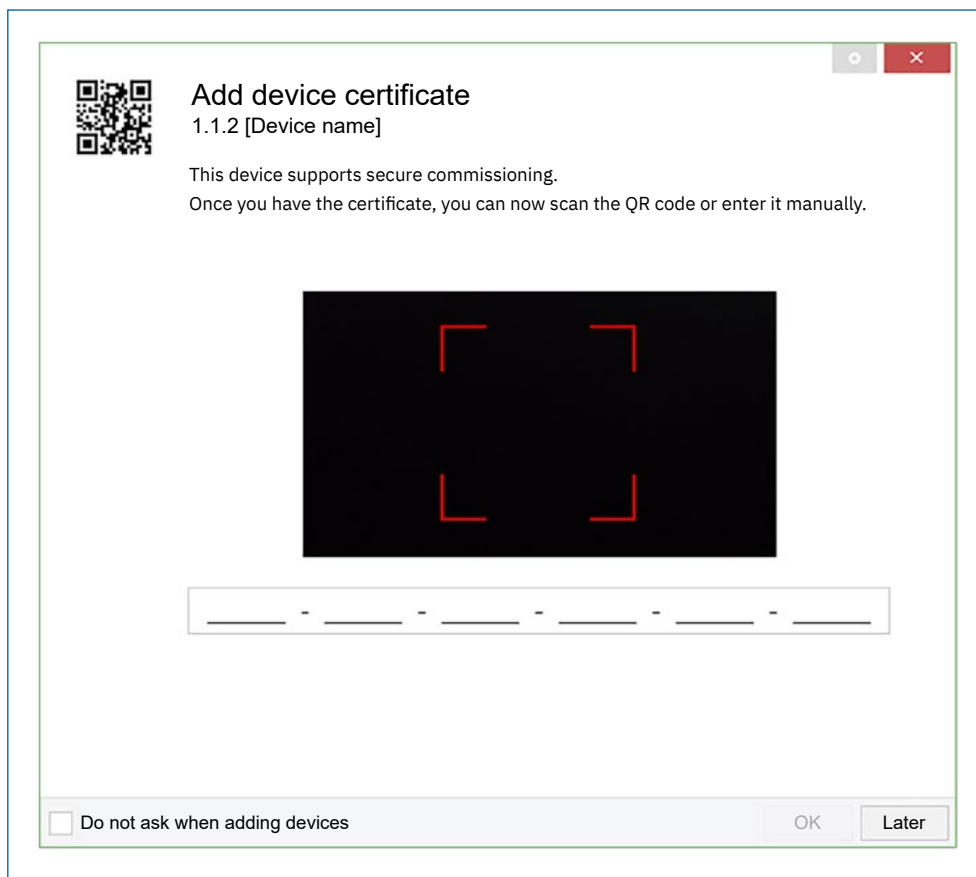


Figure 3: Commissioning with ETS – Security: Add device certificate

2.5 Reset to factory settings

If the device has already been in use or if the initial start-up has failed, it must be reset to factory settings according to the following procedure.

1. Press and hold the programming button for at least 10 seconds. The programming LED is flashing.
2. Release the button and press it again for 5 seconds until the programming LED flashes rapidly. The LED switches off by releasing the button.
3. The device will reset and reboot.

2.6 Operating the device

Switch off device

By pressing the lower button for more than 5 seconds, the device is completely switched off. "Off" appears on the device display.

Temperature increase / decrease

The set temperature setpoint is shown in the top line of the display. By pressing the upper button on the front of the device, the setpoint is increased by 0.5 °C; pressing the lower button decreases the setpoint by 0.5°C.

Note: When used as a KNX RF+ device, this function can be deactivated via the ETS.

"Boost" function

The boost function of the heating system is used to bring a room to a comfortable temperature within a short time. For this purpose, the heating valve is fully opened for 5 minutes during the boost phase to allow maximum heat output. The function can be activated either manually by pressing directly on the device or via the app.

Note: When used as a KNX RF+ device, this function can be deactivated via the ETS.

"Window Open" function

The "Window Open" function is an intelligent automation that detects when a window is opened and responds accordingly to save energy and increase comfort. If the internal temperature sensor detects a noticeable drop in temperature, or if a window contact reports an open window, the control of the Heating Valve Drive closes the heating valve for a fixed adjustable period to avoid unnecessary heat loss.

The window open function can be cancelled by briefly pressing either of the two buttons on the device.

The "Window Open" function can be deactivated via the menu in the Heater Valve Drive.

Note: When used as a KNX RF+ device, this function can be deactivated via the ETS.

2.6.1 Menu structure RF-HVA1DAA.01S

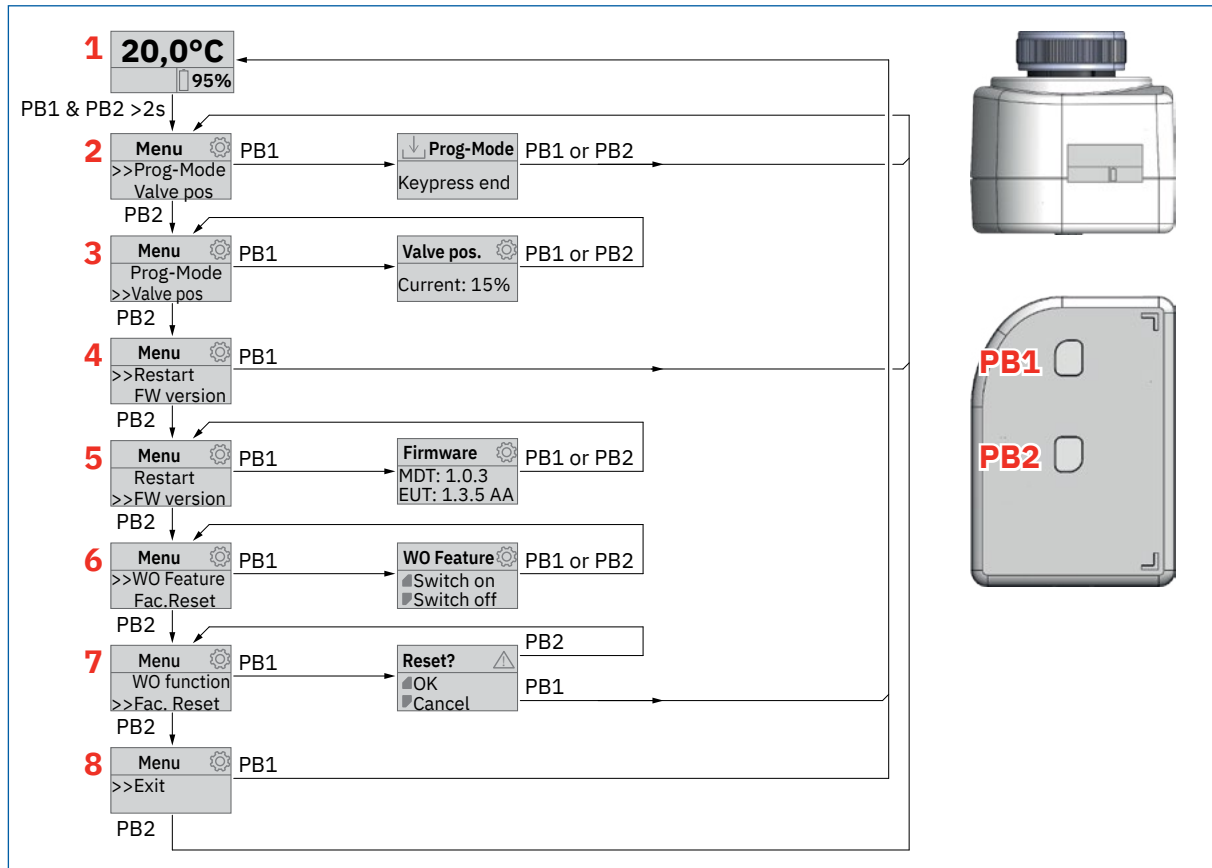


Figure 4: Menu structure on the Heating Valve Drive RF-HVA1DAA.01S

Main display (1)

This display corresponds to the standard display of the radiator thermostat.

Programming mode (2)

This function puts the device into programming mode. In this mode, parameters and device settings can be received and programmed from the Engineering Tool Software (ETS). The programming mode ends automatically after a defined period. After the programming mode ends, the device switches to the main display.

Valve position (3)

The current valve position is displayed here. A value of 0% corresponds to a fully closed valve, while 100% corresponds to a fully open valve.

Restart (4)

The adaptation run is performed again. In this process, the valve is first fully opened and then completely closed to determine the end positions. After the adaptation run is completed, it is displayed whether the process was successful or faulty. On successful completion, the device switches to the main display.

Firmware version (5)

The firmware version is displayed here.

Example:

- **Firmware version of the device:** MDT 1.11.21
- **Bootloader version of the device:** EUT 1.3.5 AA

Note: The firmware version should be read before contacting MDT Support.

WO Feature (6)

This setting activates the "Window open" function. Detailed information on operation and parameterisation can be found in chapter [2.6 Operating the device](#).

- **Upper button:** Activate
- **Lower button:** Deactivate

Fac.Reset (7)

This function is used to start a factory reset of the device. This will delete all parameter settings and configurations, and the device is reset to its factory settings.

- **Upper button:** Activate
- **Lower button:** Cancel

Note: Before resetting, all important settings should be noted down, as it is not possible to restore the data after a factory reset.

Exit (8)

Exits the menu function and returns to the main display.

2.6.2 Menu structure RF-HVA1DLB.01S

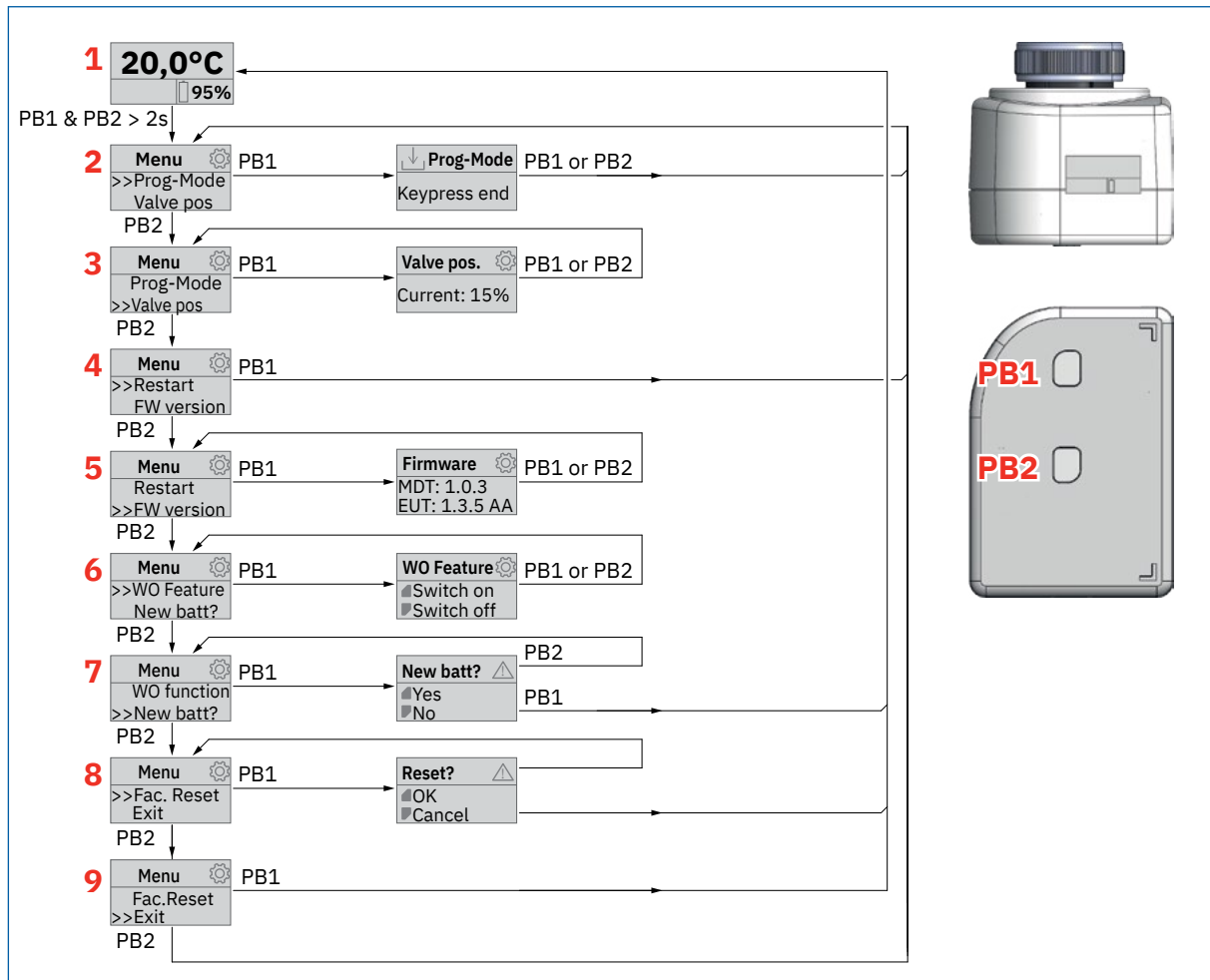


Figure 5: Menu structure on the Heating Valve Drive RF-HVA1DLB.01S

Main display (1)

This display corresponds to the standard display of the radiator thermostat.

Programming mode (2)

This function puts the device into programming mode. In this mode, parameters and device settings can be received and programmed from the Engineering Tool Software (ETS). The programming mode ends automatically after a defined period. After the programming mode ends, the device switches to the main display.

Valve position (3)

The current valve position is displayed here. A value of 0% corresponds to a fully closed valve, while 100% corresponds to a fully open valve.

Restart (4)

The adaptation run is performed again. In this process, the valve is first fully opened and then completely closed to determine the end positions. After the adaptation run is completed, it is displayed whether the process was successful or faulty. On successful completion, the device switches to the main display.

Firmware version (5)

The firmware version is shown here.

Example:

- **Firmware version of the device:** MDT 1.11.21
- **Bootloader version of the device:** EUT 1.3.5 AA

Note: The firmware version should be read before contacting MDT Support.

WO Feature (6)

This setting activates the "Window open" function. Detailed information on operation and parameterisation can be found in chapter [2.6 Operating the device](#).

- **Upper button:** Activate
- **Lower button:** Deactivate

New battery (7) After replacing the battery, the device software must be notified of this. After confirming with "Yes", the battery voltage will be calibrated.

Factory reset (8)

This function is used to start a factory reset of the device. This will delete all parameter settings and configurations, and the device is reset to its factory settings.

- **Upper button:** Activate
- **Lower button:** Cancel

Note: Before resetting, all important settings should be noted down, as it is not possible to restore the data after a factory reset.

Exit (9)

Exits the menu function and returns to the main display.

3 Communication objects

3.1 Standard settings of the communication objects

Standard settings								
No.	Name	Object function	Length	C	R	W	T	U
1	In operation	Output	1 Bit	■	■		■	
2	Temperature controller	Send current setpoint	2 Byte	■	■		■	
2	Temperature controller	Preset setpoint	2 Byte	■	■		■	
3	Temperature controller	Preset setpoint	2 Byte	■		■	■	■
3	Temperature controller	Receive current setpoint	2 Byte	■		■	■	■
4	Temperature controller	Receive control value	1 Byte	■		■	■	■
5	Temperature controller	Send valve position	1 Byte	■	■		■	
6	Temperature	Send measured value	2 Byte	■	■		■	
7	Temperature	Read measured value	2 Byte	■		■	■	■
10	Window contact	Input	1 Bit	■		■	■	■
11	Battery	Status	1 Byte	■	■		■	
12	Battery	Warning	1 Bit	■	■		■	

Table 1: Communication objects – Standard settings

The table above shows the preset standard settings. The priority of the individual communications objects and the flags can be adjusted by the user as required. The flags assign the communication objects their respective tasks in programming, where C stands for communication, R for read, W for write, T for transmit and U for update.

4 ETS Parameters

4.1 Device selection

The following parameter is used to select the model within the “RF+ heating valve drive” family:

Device	RF-HVA1DAA.01S ▼
--------	------------------

Figure 6: General settings – Device selection

The application is adjusted by selecting the heating valve drive used.

4.2 General settings

The following table shows the available settings:

ETS text	Dynamic range [Default value]	Comment
Send "In operation" cyclically	<ul style="list-style-type: none"> ■ not active ■ active 	Activation of an object.
Cycle time	00:05 ... 24:00 hh:mm [01:00 hh:mm]	Setting the transmission interval. Only if "Send 'In operation' cyclically" → "active".
Ready to receive data after "In operation"	<ul style="list-style-type: none"> ■ not active ■ active 	Delays the deactivation of the receiver after the "In operation" transmission.
Duration	00:01 ... 04:00 mm:ss [00:03 mm:ss]	Duration of the delay. Only when "Ready to receive after ..." → "active".
Display language	<ul style="list-style-type: none"> ■ German ■ English 	Sets the display language.
Lock buttons on device	<ul style="list-style-type: none"> ■ not active ■ active 	Locks the manual control functions on the device.
Ready to receive data after keypress	<ul style="list-style-type: none"> ■ not active ■ active 	Delays the switching to the standby mode after a button has been pressed.
Duration	00:01 ... 04:00 mm:ss [00:03 mm:ss]	Duration of the delay. Only when "Ready to receive after ..." → "active".

ETS text	Dynamic range [Default value]	Comment
Ready to receive data after restart	<ul style="list-style-type: none"> ■ not active ■ active 	Delays the deactivation of receive mode after a restart.
Duration	01:00 ... 15:00 mm:ss [05:00 mm:ss]	Duration of the delay. Only when "Ready to receive after ..." → "active".

Table 2: General settings

Send "In operation" cyclically

The "Operating" object is used to show on the bus that the device is alive. If activated, an "ON" telegram is sent cyclically.

Note: Short intervals → shorter battery life.

Display language

Here you can select the language in which the menu navigation and error messages are displayed on the e-paper display.

Ready to receive data after "In operation" / keypress / restart

This parameter delays the deactivation of reception readiness after sending the respective message. This means that the device remains ready to receive for a defined period of time so it can process any subsequent telegrams or feedback immediately.

Lock buttons on device

This setting is used to specify whether the setpoint can be changed on the device. If the parameter is deactivated, a small lock is displayed, and it is not possible to adjust the setpoint on the device.

The following table shows the associated communication objects:

No.	Name/Object function	Length	Usage
1	In operation – Output	1 Bit	Transmitting a cyclic "In operation" message. Only if "Send 'In operation' cyclically" → "active".

Table 3: Communication objects – General settings

4.3 Room temperature controller

The following table shows the available settings:

ETS text	Dynamic range [Default value]	Comment
Room temperature controller	<ul style="list-style-type: none"> ■ internal ■ external 	Selects the Temperature Controller.
If "Room temperature controller" → "internal"		
Request interval setpoint	00:05 ... 24:00 hh:mm [00:15 hh:mm]	Setting for the interval at which this is requested.
Temperature sensor	<ul style="list-style-type: none"> ■ internal ■ external 	Selection of the temperature sensor for the internal temperature controller.
Calibration value	-5.0 – 5.0 K [0 K]	Adjustment for internal sensor. Only if "Temperature sensor" → "internal".
Request interval	00:05 ... 24:00 hh:mm [00:05 hh:mm]	Setting for the interval at which the external temperature sensor is polled. Only if "Temperature sensor" → "external".
If "Temperature Controller" → "External"		
Request interval	00:05 ... 24:00 hh:mm [00:15 hh:mm]	Setting the query interval for the external control value.
Send valve position	<ul style="list-style-type: none"> ■ not active ■ active 	Selection of whether the valve position is sent.
If "Send valve position" → "active"		
Send on change	<ul style="list-style-type: none"> ■ not active ■ active 	Selection of whether the value is resent when changed.
On change of ...	1 ... 50% [5%]	Setting at which change the value is sent. Only if "Send on change" → "active".
Send cyclically	<ul style="list-style-type: none"> ■ not active ■ active 	Select if the value is to be sent cyclically.
Cycle time	00:05 ... 24:00 hh:mm [00:15 hh:mm]	Setting the transmission interval. Only if "Send cyclically" → "active".

ETS text	Dynamic range [Default value]	Comment
Send temperature measurement value	<ul style="list-style-type: none"> ■ not active ■ active 	Selection of whether the measured temperature value is sent.
If "Send temperature measurement value" → "active"		
Send on change	<ul style="list-style-type: none"> ■ not active ■ active 	Selection of whether the value is resent when changed.
On change of ...	0.5 – 5 K [0.5 K]	Setting at which change the value is sent. Only if "Send on change" → "active".
Send cyclically	<ul style="list-style-type: none"> ■ not active ■ active 	Select if the value is to be sent cyclically.
Cycle time	00:05 ... 24:00 hh:mm [00:05 hh:mm]	Setting the transmission interval. Only if "Send cyclically" → "active".
Detection of "window open" by (only if "Room temperature controller" → "internal")		
Temperature	<ul style="list-style-type: none"> ■ not active ■ active 	Setting for whether an open window is detected by a temperature drop.
Temperature	<ul style="list-style-type: none"> ■ 0.5 K / minute ■ 1.0 K / minute ■ 1.5 K / minute ... ■ 5.0 K / minute 	Threshold at which an open window is detected.
Fallback to normal operation after ...	1 ... 30 min [10 min]	Setting for when the temperature decrease is cancelled.
Window contact	<ul style="list-style-type: none"> ■ not active ■ active 	Setting for whether an open window is detected by a window contact.
Value for open	<ul style="list-style-type: none"> ■ Value = 0 ■ Value = 1 	Value at which an open window is detected.
Request interval	00:05 ... 24:00 hh:mm [00:15 hh:mm]	Interval at which the window contact is requested.
Fallback to normal operation after ...	1 ... 1440 min [30 min]	Setting for when the temperature decrease is cancelled.
Lower when "window open"	8 ... 25 °C	Temperature setpoint while 'Window open'. Only if "Temperature" or "Window contact" → "active".

ETS text	Dynamic range [Default value]	Comment
"Boost" function	<ul style="list-style-type: none"> ■ not active ■ active 	Select if the boost function is enabled on the device.

Table 4: Settings – Room temperature controller

Room temperature controller

This setting determines whether the Heating Valve Drive controls the room temperature via the internal or an external Temperature Controller.

When using the internal room temperature controller, regulation occurs directly in the valve actuator.

Temperature sensor (only if "Room temperature controller" → "internal")

This parameter determines whether the internal room temperature controller measures the temperature using the internal sensor built into the appliance or using an external temperature sensor.

If no values are received when operating with an external temperature sensor, a crossed-out antenna symbol is displayed in the bottom left corner of the display until a valid value is received again. In this case, the device automatically continues to operate using the measurements from the internal sensor. The external temperature sensor continues to be queried cyclically. As soon as valid values are received from the external sensor again, the device automatically uses these.

Calibration value

If the internal temperature sensor is selected, a correction value can be set to increase or decrease the actual measured value. This setting is particularly useful if the valve drive has been installed in an unfavourable location, for example in a draughty area. When this function is activated, the temperature sensor sends the corrected value.

Request interval

If an external temperature sensor is selected, it must be requested cyclically. This parameter is used to set the interval for the request.

- **Operation with external Room temperature controller**
The polling interval is used to receive the control variable and the setpoint temperature.
- **Operation with internal Temperature Controller**
The polling interval is used to receive the setpoint temperature.

If there is no response to a request from the thermostat, a crossed-out antenna symbol will appear in the bottom left corner of the display until a valid value is received again. In this case, the thermostat will continue to operate using the values available internally.

Note: Short intervals → shorter battery life.

Send valve position

The sending of the valve position can be triggered by two different events:

- **Send on change**
After activation, whenever the valve position changes by the percentage value specified in the subordinate parameter "On change of ...", a telegram with the current valve position (in %) is sent.
- **Send cyclically**
After activation, the valve position is transmitted at the polling interval set in the subordinate parameter "Cycle time". The valve position is requested and transmitted at regular intervals.

Send temperature measurement value

The sending of the valve position can be triggered by two different events.

- **Send on change**

After activation, a telegram with the current temperature is sent as soon as the measured temperature value has changed by the value defined in the subordinate parameter "On change of ...".

- **Send cyclically:**

After activation, the measured temperature is transmitted at the polling interval specified in the subordinate parameter "Cycle time". The temperature is requested and sent at regular intervals.

Note: Short intervals → shorter battery life.

Detection of "window open" by ... (only if "Room temperature controller" → "internal")

The temperature reduction when the window is open can be triggered in two ways.

Temperature drop detection can be used to determine whether a window has been opened. A sudden drop in room temperature is detected, indicating that the window has been opened. The "Temperature" parameter is used to set the temperature drop per minute at which the window function is activated.

An open window can be detected not only via the internal temperature sensor, but also by using a window contact or an intelligent window handle. These external sensors report the open state directly to the system, making the detection of an open window more reliable and independent of temperature changes.

Lower when "window open" (only if "Room temperature controller" → "internal")

The temperature setpoint to be used when an open window is detected is defined here. This reduced setpoint is used to minimise heating operation during the ventilation phase and thus avoid energy losses.

Note: The "window open" function is automatically ended after the individually adjustable time value "Return to normal operation after ..." for detection via the window sensor or temperature drop has elapsed. Additionally, the function can be ended manually at any time by briefly pressing one of the two buttons on the device.

"Boost" function

The boost function offers a way to increase the temperature in individual rooms for a short period of time. By activating the function via the upper button on the thermostat, the radiator thermostat is set to maximum heating power for 5 minutes to quickly warm up the room – regardless of the current heating schedule or the Temperature Controller.

The following table shows the associated communication objects:

No.	Name/Object function	Length	Usage
Wenn „Raumtemperaturregler“ → „internal“			
2	Temperature Controller – Send current setpoint	2 Byte	Outputs the currently setpoint value.
3	Temperature Controller – Preset setpoint	2 Byte	Receives the target temperature value from an external Temperature Controller.
Wenn „Raumtemperaturregler“ → „external“			
2	Temperature Controller – preset setpoint	2 Byte	Sends the value set on the heating valve drive
3	Temperature Controller – Receive current setpoint	2 Byte	Receives the current setpoint
4	Temperature Controller – Receive control value	1 Byte	Receives a control value for the valve position.
5	Temperature Controller– Send valve position	1 Byte	Sends the valve position.
6	Temperature – Send measured value	2 Byte	Sends the currently measured temperature.
7	Temperature – Receive measured value	2 Byte	Receipt of an externally measured temperature.
10	Window contact – Input	1 Bit	Receipt an external window contact.

Table 5: Communication objects – Room temperature controller

4.4 Battery

The following table shows the available settings:

ETS text	Dynamic range [Default value]	Comment
Send battery level cyclically	<ul style="list-style-type: none"> ■ not active ■ active 	Activation of an object.
Low battery voltage warning	<ul style="list-style-type: none"> ■ not active ■ active 	Activation of an object.
Threshold	1 ... 100 % [20 %]	Sets the threshold for the warning message. Only when “Low battery voltage warning” → “active”.
Send cyclically	<ul style="list-style-type: none"> ■ not active ■ active 	Activates the cyclic transmission of the warning message. Only when “Low battery voltage warning” → “active”.
Cycle time: Battery level Cycle time: Low battery voltage Cycle time: Battery level / low battery voltage	00:05 ... 60:00 hh:mm [12:00 hh:mm]	Setting the transmission interval. Only if “... send cyclically” → “active”.

Table 6: Settings – Battery

Send battery level cyclically

When this parameter is activated, an additional object appears which transmits the battery level in %. A value of 100% corresponds to a full battery, a value of 1% to a battery voltage at which the electronics of the Heating Valve Drive no longer function reliably.

Low battery voltage warning

When this parameter is activated, an additional object is displayed that transmits a warning message once as soon as the set threshold is undercut. The value ‘0’ indicates a good or acceptable battery level, while ‘1’ indicates a critical battery level.

Threshold

Configurable threshold, below which the "Battery – Warning" object transmits a message. A threshold value of 100% indicates a fully charged battery, while a value of 1% indicates a battery voltage at which the electronics of the heating valve drive can no longer function reliably.

The following table shows the associated communication objects:

No.	Name/Object function	Length	Usage
11	Battery – Status	1 Byte	Sending the battery status.
12	Battery – Warning	1 Bit	Sending of a warning message.

Table 7: Communication objects – Battery

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6 Appendix

6.1 Statutory requirements

The devices described above must not be used in conjunction with devices which directly or indirectly serve human, health, or life-safety purposes. Furthermore, the described devices must not be used if their use could pose a danger to people, animals or property.

Do not leave the packaging material lying around carelessly. Plastic films/bags etc. can become dangerous toys for children.

6.2 Disposal



Electrical and electronic devices must not be disposed of with household waste. Consumers are legally obliged to hand in old devices at an authorised collection point.

Please help to protect the environment and health by disposing of old devices properly. You can obtain information about return options from your local authority or specialist retailers.

6.3 Note on battery disposal



Batteries must not be disposed of with household waste. Consumers are legally responsible for returning used batteries.

Used batteries may contain harmful substances that can damage the environment and health. At the same time, they contain valuable raw materials (e.g. iron, zinc, manganese, nickel) that can be recycled.

You can return used batteries free of charge to retailers or at municipal collection points after use.

Meaning of the symbol:

The crossed-out waste bin indicates that batteries should not be disposed of with household waste.

6.4 Note on lithium battery



Caution — Contains lithium metal batteries.

These can cause fire if damaged or handled incorrectly. The batteries must not be disassembled, short-circuited, crushed or thrown into fire. They must be protected from mechanical damage and extreme temperatures. If damaged or leaking, the manufacturer or emergency services must be contacted immediately.

6.5 Assembly

Danger to life due to electric current!



All work on the device may only be carried out by qualified electricians. The country-specific regulations as well as the valid KNX guidelines must be observed.

The devices are approved for operation in the European Union and bear the CE mark. Use in the USA and Canada is not permitted!

6.6 History

V 1.0 First version of the manual

DB V 1.0 12/2025