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Gira RF Multi servo for KNX Order No. 5115 00



Gira RF Multi servo for KNX (Fig. 1:1)

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1. About this documentation

This documentation will accompany you through all phases of the product life cycle of Gira RF Multi servo for KNX. You will learn for example how to assemble, install, commission and configure the device.

All descriptions in this documentation relating to configuration in the ETS refer to the variant "ETS Professional" in the version 6.

Explanations for the concepts of KNX do not form part of this documentation.

1.1. Target group

This documentation is aimed at qualified electricians and KNX processors.
Anyone may configure the Gira RF Multi servo for KNX. We recommend that configuration is done by a system integrator with sound specialist knowledge of KNX and using the ETS.

1.2. Symbols and typographical conventions

Symbol / label	Meaning
	Note or important additional information
	Safety note qualified electrician
	Danger note

2. About Gira RF Multi servo for KNX

2.1. Bestimmungsgemäßer Gebrauch

The Gira RF Multi servo for KNX is used for controlling the radiator valves via KNX. The connection to the KNX installation and the transmission of the KNX telegrams is done using the radio standard KNX RF Multi.

The device is exclusively intended for installation on radiators in the interior.

The device is compatible with radiator valves with a thread M30 x 1.5 mm.

Use the adapters included in the delivery when using it with Danfoss valves.

The Gira RF Multi servo for KNX is a KNX system device and complies with the KNX guidelines.



Note

Gira Giersiepen GmbH & Co. KG assumes no liability for damage caused by improper use or use for purposes other than or contrary to the intended purpose.

Configuration: compatible ETS version

Simple integration into the KNX system (completely programmable via ETS):

- ETS6 from v6.3.1 or higher.
- Product database entry: Download the product database entry from our website from the ETS online catalogue free of charge.

KNX Secure



The Gira RF Multi servo for KNX is KNX Secure.

The device is compatible with KNX Secure. KNX Secure offers protection against manipulation in building automation and can be configured in the ETS project.

- The required KNX Secure certificate or the included FDSK (Factory Default Setup Key) can be found on a sticker in the battery cover and is also delivered with the device.
- For maximum security, we recommend removing the sticker from the device.
- Keep the certificate in a safe place.
- You cannot restore the certificate yourself.
- Please contact our support team if you should lose the certificate despite utmost care.
- Only use KNX Secure for safe communication. The BCU key has no function.

2.2. System

The Gira RF Multi servo for KNX is used for controlling the radiator valves via KNX. The connection to the KNX installation and the transmission of the KNX telegrams is done using the radio standard KNX RF Multi. The servo communicates via radio with other devices of a KNX RF domain and via a RF Multi/TP media coupler with the KNX TP installation.

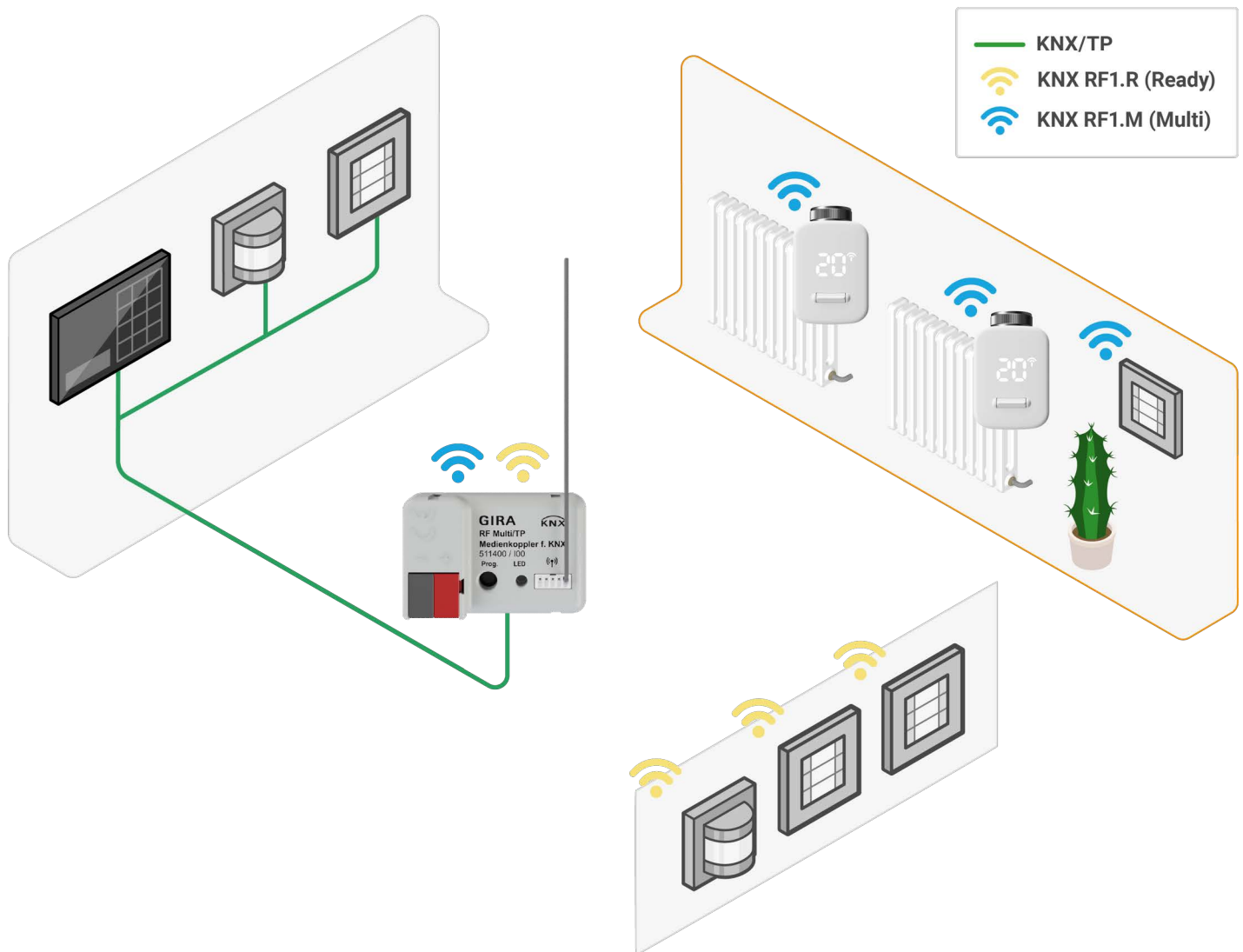


Figure 1: System integration

2.3. Functions

Integration in the KNX system using radio technology

The Gira RF Multi servo for KNX communicates via KNX RF Multi with the KNX system.

Changing the setpoint value

Change the temperature setpoint via KNX command or manual operation.

Preset of setpoint values

ETS offers you the possibility to assign the RF Multi servo setpoint temperatures for the different KNX HVAC operating modes, ► see "HVAC operating modes" on page 34

Display of the setpoint values

The Gira RF Multi servo for KNX is provided with a 7-segment display to show the setpoint temperature.

Configuring the setpoint values

Configuration of the temperature setpoints to either a relative (derived from basic setpoint value) or absolute (independent setpoint temperatures for each operating mode) value, ► see "Setpoints" on page 35.

The actual and setpoint temperatures can be output (also cyclically) to the KNX when a parameterisable deviation is reached.

Grouping the servos

Combine several servos into a group in order to optimally control several radiators in a room.

Define a leader to be used for temperature control and setpoint output to the followers,

► see "Several servos in the room" on page 29

Activating the boost function

Put the Gira RF Multi servo for KNX into boost mode via a KNX command or manual operation.

For this, the heating valve is completely opened for a time that can be parameterised,

► see "Boost function" on page 40

Activating the comfort extension

The nominal temperature is maintained for the time preset in the ETS parameters.

The comfort extension can be activated via KNX command or manual operation,

► see "Presence detection" on page 39

Bringing the heating valve to forced position

For maintenance work or checks, the Gira RF Multi servo for KNX can be set to a previously specified forced position (in increments of 10 from 0 to 100%).

Using the service mode

With the help of a 2-bit object, the command value in the service mode is set to 0 or 100%. Gira RF Multi servo for KNX is moved to the selected value in a prioritised manner to be able, for example, to flush the heating system.

Automated valve flushing

Every seven days, the Gira RF Multi servo for KNX performs an automated valve flushing. The cycle of 7 days starts by inserting the batteries. Fully open the thermostat valve to prevent it from getting stuck or from calcification. Otherwise, the Gira RF Multi servo for KNX does not need any maintenance.

Processing the temperature values

The Gira RF Multi servo for KNX can receive and process an externally measured temperature via KNX. Additionally, the Gira RF Multi servo for KNX is equipped with an internal temperature sensor.

Displaying the battery status

The battery status of all connected servos can be read via the KNX bus.

Diagnostic messages

Errors are directly output at the device or/and via KNX telegram, ► see "Troubleshooting" on page 61

Configuring of up to 16 scenes

Configure up to 16 scenes, for example, to couple the heating requirements to other functions,

► see "Scenes" on page 42

Changeover summer/winter operation

Switch the servo to summer operation in order to adapt the utilisation to the heating mode and to save the batteries. In summer operation, the servo is set to the HVAC mode "Frost protection". It is not possible to change the HVAC mode via manual operation or KNX, ► see "Summer/winter operation" on page 42

Functional enhancements from updates

You can obtain functional enhancements for the Gira RF Multi servo for KNX with a new version of the firmware, ► see "Updating firmware" on page 26

The current firmware, the corresponding product database entry and the corresponding product manual can be downloaded from our website www.gira.de.

Priority control

In the event that several functions are activated at the same time, Gira RF Multi servo for KNX is provided with an integrated priority control (1 = highest priority):

1. Valve flushing
2. Battery power is low
3. Service mode
4. Forced position
5. Block controller
6. Boost function
7. Normal operation (control via KNX))

Blocking the manual operation

Block the Gira RF Multi servo for KNX against unauthorised access.

Integration of door/window contact

Link the Gira RF Multi servo for KNX with a door and/or window contact switch. If an open window is detected, the HVAC mode "Frost protection" is activated, ► see "Frost protection" on page 41

Temperature drop detection

You can parameterise the threshold value for the detection of a temperature drop, ► see "Frost protection" on page 41

3. Important notes

3.1. General safety instructions



Danger from incorrect use

Incorrect use can result in damage to the device, fire or other dangers.

- Follow the instructions in this product manual.
 - This product manual is part of the product and must remain with the customer.
-

3.2. Battery safety instructions



Warning

Improper handling of batteries can result in explosion, fire or chemical burn due to leakage.

- Do not heat or throw batteries into fire.
 - Do not reverse polarity, short-circuit or recharge batteries.
 - Do not deform or disassemble batteries.
 - Remove empty batteries immediately and dispose of in an environmentally friendly manner.
 - Change all batteries at the same time. Only use batteries of the identical type and from the same manufacturer. Do not mix old and new batteries.
 - Only use leak-proof batteries of the type AA 1.5 V (LR6).
 - Remove the batteries if you will not be using the device for a longer period of time.
-

3.3. Storage and transport

Store the device in its original packaging. The original packaging provides optimum protection during transport. Store the device in a temperature range of -25 °C to +70 °C.

3.4. Cleaning and maintenance

The Gira RF Multi servo for KNX is maintenance-free.

Remove the batteries when the device is not in use.

If necessary, clean the device with a dry cloth.



Device damage due to improper opening

- Never open the housing.
 - If you suspect that the device is damaged, contact our Support.
 - We provide a warranty in accordance with statutory requirements.
 - Send the device back to us postage free with a detailed error description only if our support team asks you to.
-

4. Technical data

Power supply and connections

Power supply:	2 × 1,5 V (DC), AA/LR6
---------------	------------------------

Ambient conditions

Installation environment temperature:	0 °C to +50 °C
Storage temperature:	-20 °C to +70 °C
Water temperature heating:	0 °C to +80 °C

Device properties

Device width:	53 mm
Device height:	70 mm
Device depth:	85 mm
Weight:	176 g (incl. batteries)
Connection thread:	M30 × 1.5
Set force:	max. 120 N
Control range:	5 °C to +30 °C
Battery life:	Up to two years

The battery life depends on several factors (e.g. storage times, temperature fluctuations, spatial conditions, flow temperature) and may vary as a result.

KNX

Communication:	KNX RF Multi
Radio frequencies:	868.3 MHz; 868.950 MHz; 869.525 MHz; 869.850 MHz
Transmission power:	max. 25 mW
Installation method:	S-Mode

Approvals and protection type

Approvals / certifications:	CE, KNX
Protection type:	IP20 (compliant with EN 60529)
Protection class:	III (compliant with IEC 61140)
Degree of contamination:	2 (according to IEC 60664-1)

5. Device design

- 1. Union nut
- 2. Display
- 3. Status LED
- 4. Rocker switch

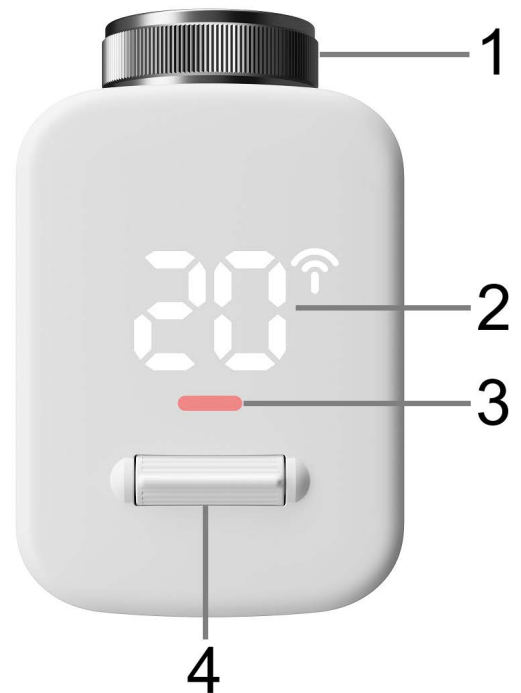


Figure 2: Device Design

5.1. Battery compartment

- 1. Programming button



Figure 3: Battery compartment

5.2. Operating elements

5.2.1. Rocker switch

The rocker switch is located on the upper side of the device and has three operating intervals:

- Short single press
- Long single press (> three seconds)
- Press and hold

The rocker switch can be pressed upward and downward.

5.2.2. Programming button

The programming button is located in the battery compartment and has two operating intervals:

- Short single press
- Press and hold (while another action is carried out)

5.3. Display

The Gira RF Multi servo for KNX is equipped with a 7-segment display and a display for radio interferences. In the ETS, the switch-on behaviour and the switch-off delay of the display can be parameterised.

The following is required for the display of messages:

- The manual operation is activated in the ETS.
- In the „Display“ tab of the ETS, the parameter „Display active“ → „Only for manual operation“ has been selected.
- The display has been activated by an operating procedure, e.g. by pressing the rocker switch briefly up or down.

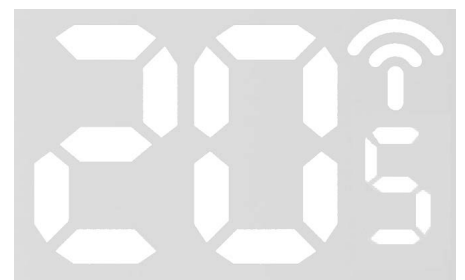


Figure 4: Display

5.3.1. Installation display

Symbol	Abbreviation	Name	Function
	Pr	Preparation	The plunger (transmission pin) is moved to installation position.
	In	Installation	The plunger is in installation position. The device is ready for being installed.
	Ad	Adaptation	An adaptation run is carried out.

Table 1: Shown display during installation

5.3.2. Temperature and radio display

Symbol	Name	Meaning
	Temperature	Temperature in °C Example: 20,5 °C
	Radio interference	State of the radio connection. The symbol lights up if the radio connection is disturbed.

Table 2: Temperatur- und Funkanzeige

5.3.3. Display during operation

The following display texts are shown as soon as a value has been received from the corresponding group object.

Symbol	Abbreviation	Name	Meaning
	bo	Boost function	Boost function active
	Fo	Forced	Forced position active
	OP	Open	Service mode active/ Command value 100%
	CL	Closed	Service mode active/ Command value 0% or Room temperature controller locked by group object 46.
	P1	Presence 1	Comfort extension has been activated.
	P0	Presence 0	Comfort extension has been deactivated.
	St	Setpoint operation	The operating mode Setpoint operation is parameterised.

Table 3: Status messages

5.3.4. Diagnostics/error messages

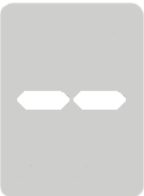
Symbol	Abbreviation	Name	Meaning
	E1	Error 1	An error with the number 1 is active. Errors in the number range from 1 to 9 are possible, ► see “Troubleshooting” on page 61
	EA	Error 10	Error 10 with the code EA is active, ► see “Troubleshooting” on page 61
	--	--	Manual operation locked
	Lo	Low	Low battery voltage warning The battery voltage has reached a critical value. The batteries must be replaced.
	r5	Reset 5	Countdown during reset to factory settings. The device counts down from r5 to r0 as long as the programming button is pressed.
	UP	Update	A firmware update is carried out.

Table 4: Display text error display

6. Installation

6.1. Scope of supply

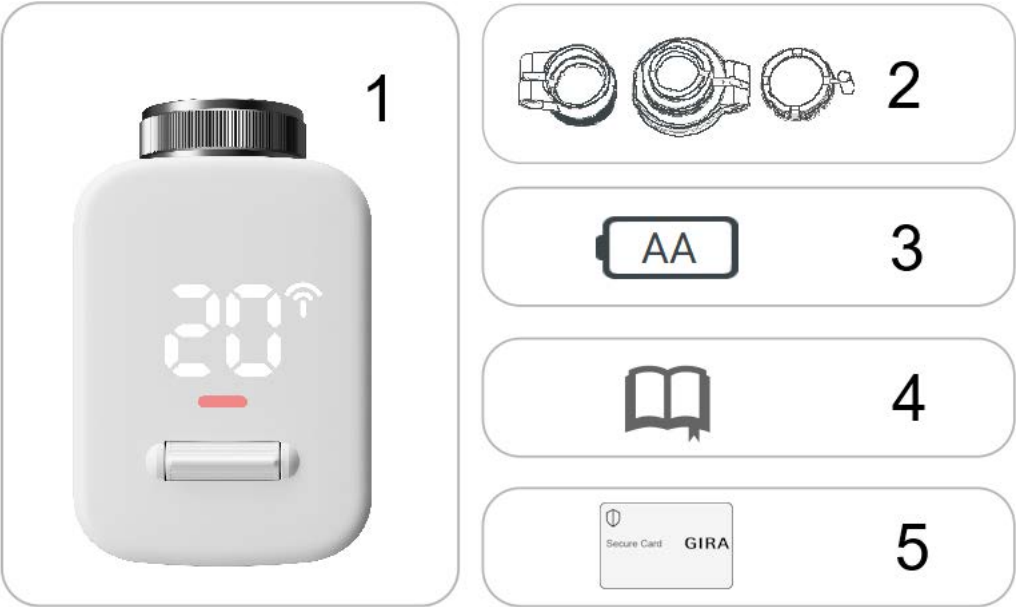


Figure 5: Scope of supply

No. Objects supplied		Explanation
1	Device	Gira RF Multi servo for KNX
2	Adapter set	Danfoss RA, RAV and RAVL plastic adapters and screw with nut.
3	Batteries	2× batteries (AA)
4	Operating instructions	This product documentation also provides you with the information from the operating instructions, but with additional details, application examples and configuration instructions.
5	Secure Card	Secure RF Card with data for KNX Secure. The same data are attached to the side of the device.

6.2. Selecting the heating adapter

The Gira RF Multi servo for KNX is equipped with a connection thread M30 x 1.5 mm.

Heating valves with this thread size are compatible without an adapter.

Suitable adapters for Danfoss RA/RAV/RAVL and a screw with nut and a pin (only for RAV) are included. These can be mounted between the heating valve and the servo.

6.3. Installing the device

Before starting the installation process, check that the requirements for the planned installation environment have been met.



Device functional fault due to incorrect installation environment

- Pay attention to the temperature of the installation environment: min. 0 °C to max. +50 °C.
 - For installing the device and for removing the battery cover a clearance of approx. 150 mm has to be taken into account.
 - Do not use a radiator cover made of metal.
 - The Gira RF Multi servo for KNX is designed for the use inside buildings.
 - The Gira RF Multi servo for KNX may only be used in a dry and dust-free place without direct sunlight.
 - If the thread of the heating valve is damaged, consult a heating specialist.
 - To reach the optimum radio range and to avoid possible interferences, we recommend to read the KNX RF Multi Guide.
-



Obey the battery safety instructions, ► page 10.

Inserting the batteries

1. Remove the battery cover at the top edge with your finger.
2. Insert new batteries of the same type. Make sure that the polarity is correct.
3. Close the battery cover by pressing it slightly down.

Installing the device

Note: The order must be strictly adhered to.

1. After having inserted the batteries, the display shows „Pr“.
2. The plunger of the Gira RF Multi servo for KNX moves to installation position.
3. Once the plunger has reached the installation position, the display shows „In“.
4. The Gira RF Multi servo for KNX is now ready for installation:
 - a. Place the Gira RF Multi servo for KNX in upright position on the heating valve or on the screwed-on adapter.
 - b. Tighten the union nut by hand.
 - c. Press the rocker switch up or down for a long time (> 3 sec.) to start the adaptation run.
5. During the adaptation run, the display shows „Ad“.
6. After the end of the adaptation run, the Gira RF Multi servo for KNX is ready for commissioning.

6.4. Replacing the battery



Obey the battery safety instructions, ► page 10.

After a battery replacement, the configuration of the Gira RF Multi servo for KNX remains unchanged. However, a new adaptation run must be carried out.

1. Remove the battery cover at the top edge with your finger.
2. Remove the old batteries.
3. Insert new batteries of the same type. Make sure that the polarity is correct.
4. Close the battery cover by pressing it slightly down.
5. Wait until „In“ is shown on the display.
6. Press the rocker switch up or down for a long time (> 3 sec.) to start the adaptation run.

6.5. Configuring the device without installation

Depending on the infrastructure, it may be necessary to configure the Gira RF Multi servo for KNX before the installation. Carry out the following steps to prepare the configuration.

Device error due to commissioning without prior installation

If the adaptation run is carried out without having screwed the Gira RF Multi servo for KNX onto the heating valve, the display shows the error code E1. Carry out the steps specified under “Adaptation run without prior installation” on page 62.

Obey the battery safety instructions, ► page 10.

Inserting the batteries

1. Remove the battery cover at the top edge with your finger.
2. Insert the batteries. Make sure that the polarity is correct.

Preparing the device for commissioning

Note: The order must be strictly adhered to.

1. After having inserted the batteries, the display first shows „Pr“ and then „In“.
2. Press the programming button briefly. The status LED lights up red.
3. Close the battery cover by pressing it slightly down.
4. The device is ready for configuration.

Note

Start immediately to configure and program the device. If the device remains in the installation mode for a longer period of time, this can lead to a fast discharge of the batteries.

7. Manual operation

The Gira RF Multi servo for KNX offers the following manual operation options.

Requirement: The manual operation is not blocked.

7.1. Displaying the setpoint temperature/activating the display

- Press the rocker switch briefly up or down to activate the display.
- Either the setpoint temperature or the active function is displayed.

7.2. Changing the nominal temperature

Requirement: The display must be activated by pressing the rocker switch briefly once.

- Press the rocker switch briefly up to increase the nominal temperature.
- Press the rocker switch briefly down to reduce the nominal temperature.

7.3. Activating/deactivating the boost function

Requirement: The display must be activated by pressing the rocker switch briefly once.

- Press the rocker switch up for a long time to enable or disable the boost function.
- The Gira RF Multi servo for KNX opens the heating valve for the time defined in the ETS and switches to the previous mode when disabled.

7.4. Enabling/disabling the comfort extension

Requirement: In the ETS parameters, „Presence key“ must have been selected in the presence detection and the display must be activated by pressing the rocker switch briefly once.

- Press the rocker switch down for a long time to enable or disable the comfort extension.
- The Gira RF Multi servo for KNX remains in the comfort mode for the time defined in the ETS and the setpoint temperature is maintained.

7.5. Enabling/disabling the programming mode

1. Remove the battery cover at the top edge with your finger.
2. Press the programming button briefly.

The lit red status LED shows you that the programming mode is active.

7.6. Carrying out a factory reset

Information on carrying out a factory reset, ► see “Resetting to factory settings” on page 64.

8. Commissioning and configuration

The device can be configured before or after the installation in the ETS (Engineering Tool Software). If you want to configure the device before installation, follow the instructions under

► “Configuring the device without installation” on page 21.

The ETS is available with a different range of functions from the KNX Association (www.knx.org).

All descriptions in this documentation on configuration in the ETS refer to the ETS Professional version 6.



Note

Help on the ETS is available in the integrated ETS Online Help. Press the [F1] button.

Requirement

The PC used for the ETS setup must be connected to the KNX installation via a suitable interface. The Gira RF Multi servo for KNX must be connected to the KNX installation via KNX RF Multi, for example via the Gira RF Multi/TP media coupler for KNX.

In the project details of the ETS under „Compatibility“, the parameter „Use low bus communication rate“ must be disabled.

Work steps

1. Create the Gira RF Multi servo for KNX as a device in the ETS, ► see “Creating the device in the ETS” on page 24.
 2. In the ETS, assign the device and its individual address according to the KNX topology, ► see “Programming an individual address” on page 26
 3. Set the general parameters, ► see “Parametrisation” on page 27
 4. Link the group addresses to the group objects.
 5. The Gira RF Multi servo for KNX is now ready for commissioning using „Program ETS“.
-



Re-programming of the media coupler

If the group communication should take place from or in the TP line and if links of group objects of the radiator thermostats have been changed, the RF/TP media coupler must be re-programmed.

8.1. Creating the device in the ETS

Depending on whether the product database entry already exists in the ETS catalogue or whether the device is already being used in your existing project, different work steps are required in order to use the current version.

Work steps

Device already exists in the ETS catalogue?

Yes	No
Update product database. During an update, the old product database entry is replaced by the new one.	Importing product database entry. There are numerous possibilities for importing a new product database entry. Below we will assume that you have downloaded the product database entry yourself. ► see "Importing a new product database entry" on page 24

Device in existing project should be updated?

Yes	No
You must update the device properly so that the existing links to group addresses are maintained. ► see "Updating a product in the existing project" on page 25	Add the device to your topology in the usual way.

Table 5: Work steps – creating the device in the ETS

Importing a new product database entry

Requirement: You have downloaded the product database entry (product file) from our product website.

1. Start the ETS and select the "Catalogue" tab on the Start page.
2. Select the "Import" button in the toolbar.
3. In the "Open product file" window, open the product file and press the "Open" button to confirm your selection.
4. Follow the further instructions in the ETS. If necessary, call up the Online Help with the [F1] button.

Updating a product in the existing project

Requirement: New product database entry exists in the catalogue.

1. In the ETS, open the project for which the device is to be updated.
2. Search for the new product database entry in the catalogue and add the new version of the device to the devices in your project.
3. Select the old version of the device in your topology.
4. Under “Properties”, select the “Information” → “Application program” tab.
5. Select the “Update” button under the item “Update application program version” (figure 6, pos. 2)

Note

If you change the value under “Change application program” (figure 6, Pos. 1), user-defined settings such as links to group addresses will be lost.

6. Select the newly added device and delete it again from your topology.

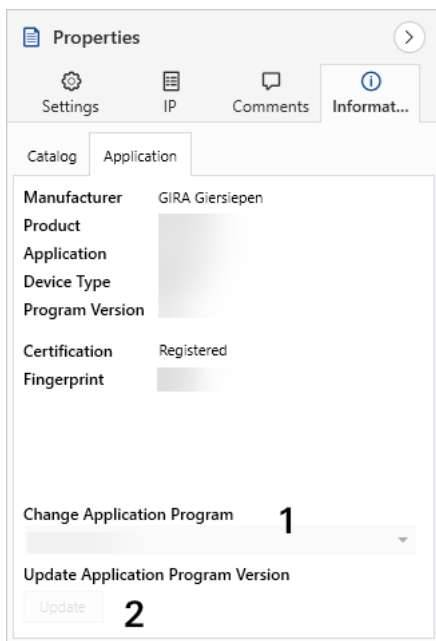


Figure 6: Updating the application program

8.2. Programming an individual address

The individual address that you issued in the ETS must be assigned to the device. We refer here to "programming". To do this you must put the device into programming mode.

Requirement

There is a KNX RF radio connection to the Gira RF Multi servo for KNX.

If a RF/TP media coupler is used for commissioning, the media coupler must be programmed first in the ETS.

If the servo is integrated in an RF segment, the media coupler must be programmed again.

Assigning the individual address

1. Press the programming button briefly. The status LED lights up red.
2. In the ETS, assign the individual address to the device in accordance with the KNX topology and execute programming in the ETS.

How to recognise successful assignment of the individual address

The completed transfer is indicated on the ETS „History“ tab by a green marking. Programming flag „Adr“ is set and „Cfg“ is not set. More information about this and other flags is available from the ETS documentation.

8.3. Updating firmware

You can obtain functional enhancements for the Gira RF Multi servo for KNX with a new version of the firmware. Use the ise service app to load the current firmware to the device. The service app can be downloaded via the ETS „Settings“ → „ETS apps“ → „ETS App Store“. During the update process, the status LED is lit red and „UP“ appears on the display.

9. Parametrisation

The parameters to be configured depend on your specific application.
The context help of the ETS explains the parameters.

Calling up the context help in the ETS

1. Enable the „Context Help“ button in the „Parameter“ tab in the toolbar.
2. Click on the desired parameter.
3. The corresponding explanation appears in the lower area of the parameter dialogue.

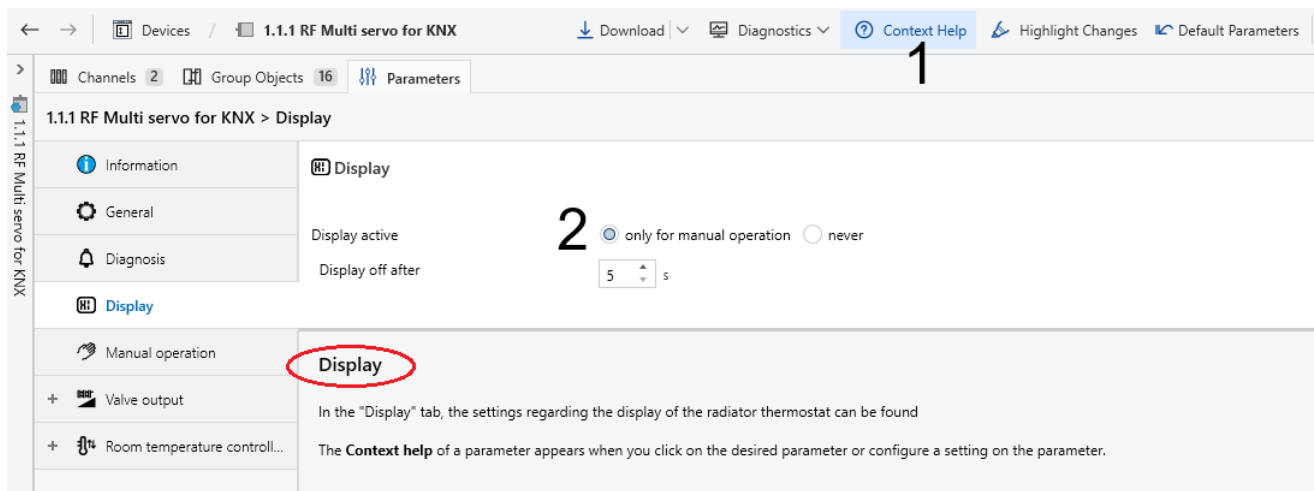
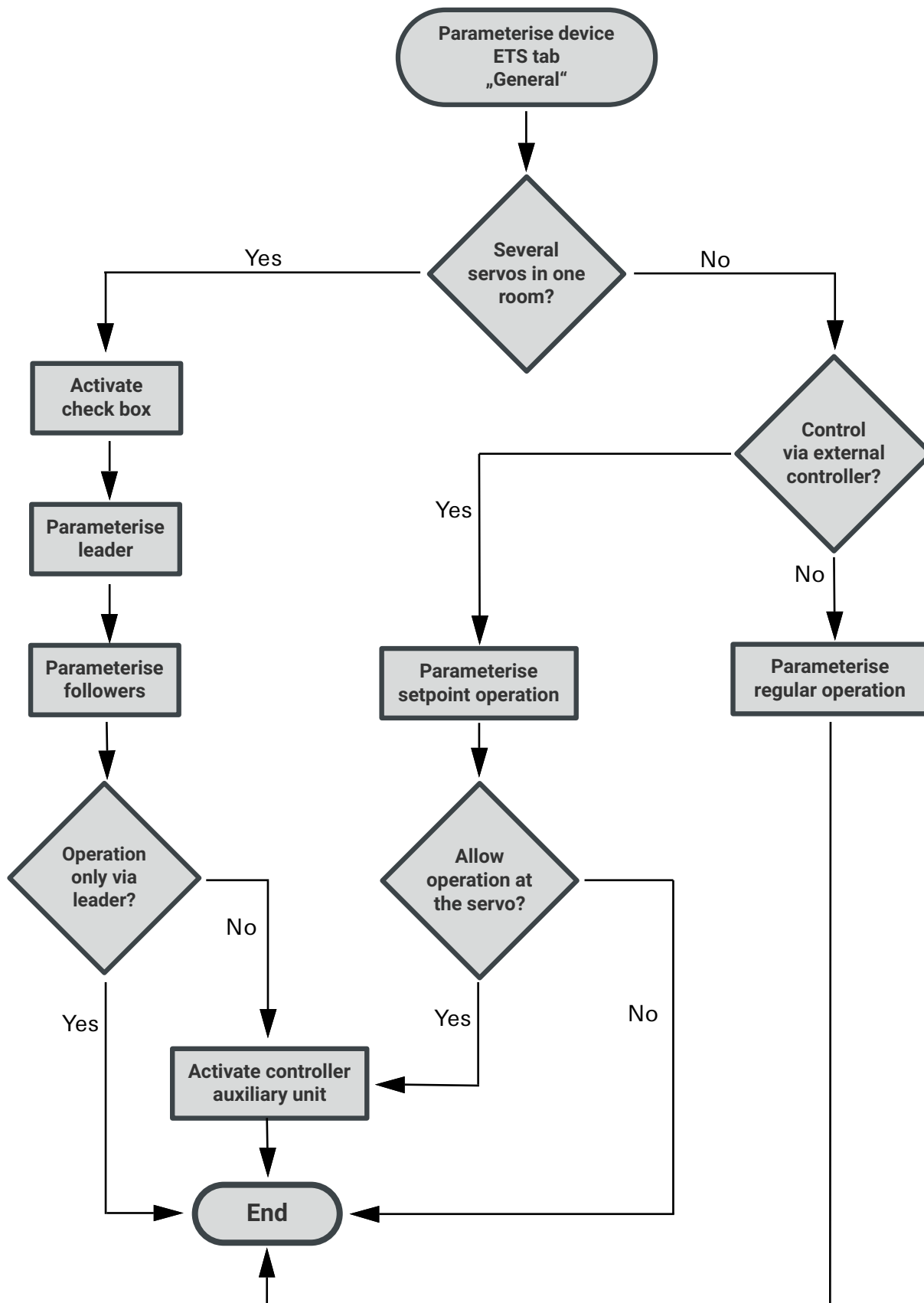


Figure 7: ETS context help

9.1. Selecting the operating mode

First of all, define the operating mode of the Gira RF Multi servo for KNX. The following diagram helps with the selection. Click the rectangular boxes to jump to the respective description.



9.2. Regular operation

Use this function if only one Gira RF Multi servo for KNX is installed in a room.

- The device is controlled via manual operation and/or via the KNX bus.
- The integrated room temperature controller and functions such as boost, comfort extension and summer/winter operation are available.
- An internal or external temperature sensor can be used for the regulation.
- Select in the ETS tab „General“ the operating mode „Regular operation“.

9.3. Setpoint operation

Use this function if you want to control the device via an external controller of the KNX installation.

- The regulation takes place by receiving the command value via KNX telegram, e.g. via the central heating control of a Smart Home server. For this, connect the group object 35 „Receive command value“ to the corresponding group address of the external controller.
- Functions such as manual operation, boost or comfort extension are only available on a device with setpoint operation if it is additionally parameterised as controller auxiliary unit, ► see “Controller auxiliary unit” on page 31
- Select in the ETS tab „General“ the operating mode „Setpoint operation“.

9.4. Several servos in the room

Use this function if several Gira RF Multi servo for KNX are installed in a room.

- This prevents the devices from adversely affecting each other.
- The connected followers are controlled by a leader. This also includes the activation of the service mode and the switch-off of the room temperature controller via a group object.
- The parameterisation as a follower allows the receipt of the command value from the leader. Functions such as manual operation, boost or comfort extension are only available on the follower if it is additionally parameterised as controller auxiliary unit,, ► see “Controller auxiliary unit” on page 31

Requirement:

- You have several Gira RF Multi servo for KNX in your ETS project.
- In the ETS tab „General“, the parameter „Several servos in the room“ is activated.

Parameterising the leader

1. Define a Gira RF Multi servo for KNX as leader. For this, select a device with appropriate requirements for a good radio connection to the KNX installation.
 2. Select the operating mode „Leader“ in the ETS tab „General“ of the device.
 3. Create a group address according to your topology, e.g. „1/0/0 command value“.
 4. Connect this group address with the group object 36 „Send command value – state“.
-



Note

If the group object 36 is not visible in the list of group objects, tick in the ETS tab „Valve output/Enable functions“ the check box „Status“ and in the ETS tab „Valve output/Status“ the check box „Status object send command value“.



Note

Tick in the ETS tab „Valve output/Status“ the check box „Transmission in case of modification“ and/or the check box „Cyclical transmission“ so that the leader can transmit the command value to the followers.

Parameterising the followers

For all followers, proceed as follows:

1. Select in the ETS tab „General“ the operating mode „Follower“.
2. Connect the above mentioned group addresses to the group object 35 „Receive command value“.

9.5. Controller auxiliary unit



Note

In a device configured as controller auxiliary unit, the actual range of functions is reduced to the manual operation. The functions Boost and Comfort extension are carried out in the connected leader or by the external controller and the resulting command values are transmitted to the controller auxiliary unit.

To configure these functions, please refer to:

- ▶ see “Configuring the boost function” on page 33
 - ▶ see “Configuring the comfort extension” on page 33
-

Requirement:

You have already carried out the “Selecting the operating mode” on page 28.

Open the „General” tab in the ETS parameters of a follower or a device in the setpoint operation. Activate the check box „Controller auxiliary unit” to parameterise and use the following functions:

- Modification of the setpoint temperature
- Display of the current setpoint temperature
- Boost function
- Comfort extension with presence button

The configuration of a controller auxiliary unit of a follower is described below. The group addresses are connected to the group objects of a servo that has been parameterised as a leader. The parameterisation of the controller auxiliary unit in the setpoint operation is performed in a similar way. The group addresses are connected to the group objects of an external controller.

Configuring the modification of the setpoint temperature (relative specified setpoint)

1. Open the tab „Controller auxiliary unit/Enable functions” in the parameters of the follower and tick the check box „Setpoint offset”.
 2. Go to the tab „Controller auxiliary unit/setpoint values” and select the specified setpoint „relative”.
 3. Create a group address according to your topology, e.g. “1/0/1 setpoint offset preset”.
 4. Connect this group address to the group object 152 „Setpoint offset – preset”.
 5. Create another group address according to your topology, e.g. “1/0/2 setpoint offset state”.
 6. Connect this group address to the group object 151 „Setpoint offset – state”.
 7. Go to the group objects of the leader and connect the first group address (1/0/1 setpoint value preset) to the group object 63 „Setpoint offset – preset”.
 8. Connect the second group address (1/0/2 setpoint value state) to the group object 64 „Setpoint offset – state”.
-



Note

The parameters „Offset up/down”, „Offset type via” and „Offset increment” in the leader and in the controller auxiliary unit must be parameterised in the same way.

Configuring the modification of the setpoint temperature (absolute specified setpoint)

1. Open the tab „Controller auxiliary unit/Enable functions“ in the parameters of the follower and tick the check box „Setpoint offset“.
2. Go to the tab „Controller auxiliary unit/setpoint values“ and select the specified setpoint „absolute“.
3. Create a group address according to your topology, e.g. “1/0/4 specified setpoint”.
4. Connect this group address to the group object 153 „Setpoint value of current operating mode“.
5. Go to the group objects of the leader and connect the group address specified above (1/0/4 specified setpoint) to the group object 61 „Setpoint value of current operating mode“.



Note

Carry out the instructions in the following section to be able to use the absolute specified setpoint. The value from the group object 150 „Setpoint temperature – state“ is used as a basic value for the specified setpoint.

Configuring the display of the current setpoint temperature

1. Create a group address according to your topology, e.g. “1/0/5 setpoint temperature”.
2. Connect this group address to the group object 150 „Setpoint temperature – state“.
3. Go to the group objects of the leader and connect the group address specified above (1/0/5 setpoint temperature) to the group object 60 „Setpoint temperature – state“.

Configuring the boost function

1. Open the tab „Controller auxiliary unit/Enable functions“ in the parameters of the follower and tick the check box „Boost function“.
2. Create a group address according to your topology, e.g. “1/0/6 boost activation”.
3. Connect this group address to the group object 155 „Boost function – activate/deactivate“.
4. Create another group address according to your topology, e.g. “1/0/7 boost state”.
5. Connect this group address to the group object 154 „Boost function – state“.
6. Go to the group objects of the leader and connect the first group address (1/0/6 boost activation) to the group object 100 „Boost function – activate/deactivate“.
7. Connect the second group address (1/0/7 boost status) to the group address 101 „Boost function – state“.

Configuring the comfort extension

1. Open the tab „Controller auxiliary unit/Enable functions“ in the parameters of the follower and tick the check box „Presence button“.
2. Create a group address according to your topology, e.g. “1/0/8 presence”.
3. Connect this group address to the group object 157 „Presence button“.
4. Create another group address according to your topology, e.g. “1/0/9 presence state”.
5. Connect this group address to the group object 156 „Presence button – state“.
6. Go to the group objects of the leader and connect the first group address (1/0/8 presence) to the group object 90 „Presence button“.
7. Connect the second group address (1/0/9 presence status) to the group object 91 „Presence button – state“.

9.6. HVAC operating modes

The Gira RF Multi servo for KNX is provided with the operating modes Comfort mode, Standby mode, Night mode and Frost protection.

The temperature values of the different operating modes are parameterised in the „Setpoints“ tab.

The operating modes are changed using the following group objects:

- Group object 40 „Operating mode changeover – preset“
- Group object 41 „Operating mode changeover – priority“

There is a common 1-byte object (GO 40) for all HVAC operating modes. The received value specifies the operating mode.

In addition, a second 1-byte object (GO 41) is also available, which sets an operating mode under force control and with a higher priority. This priority results in a hierarchy in conjunction with the window status, whereby a distinction is made between presence detection by presence button (Figure 8) or presence detector (Figure 9).

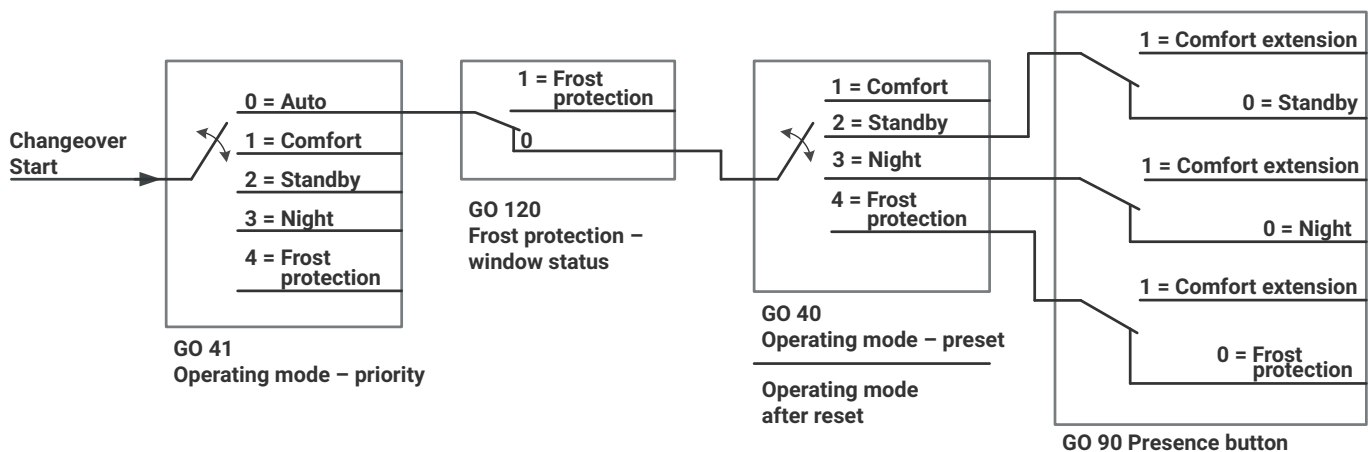


Figure 8: Changeover by KNX object with presence button

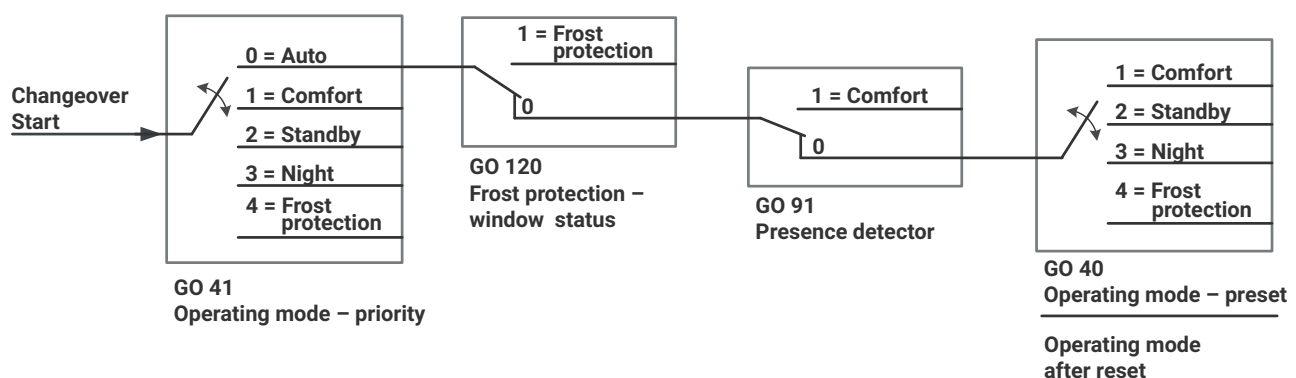


Figure 9: Changeover by KNX object with presence detector

9.7. Setpoints

An information specifying the HVAC operating mode to be activated is send to the Gira RF Multi servo for KNX by the KNX bus. Each HVAC operating mode is connected to a temperature setpoint defined in the ETS parameters. The setpoint can be specified as relative or absolute value.

9.7.1. Relative specified setpoint

1. Select in the ETS tab „Room temperature controller/setpoints“ the specified setpoint „relative“.
2. Assign a temperature value in the „Basic setpoint value“ parameter.
This value corresponds to the temperature in the comfort mode.
3. The values of the parameters „Reduction in standby mode“ and „Reduction in night mode“ are difference values with regard to the basic setpoint value.
4. In the „Setpoint offset“, the maximum possible offset of the setpoint value upwards or downwards is determined.
The offset affects the basic setpoint temperature and the values for standby and night mode.
Example: The basic setpoint temperature has been set to 21.5 °C. An upward offset of 3 Kelvin has been defined. 1 Kelvin has been defined for the downward offset.
This means that the basic setpoint temperature can be changed by manual operation or KNX telegram to a maximum of 24.5 °C and a minimum of 20.5 °C.
5. In addition, you can define the data point type which is to be used for changing the setpoint temperature using „Offset type via“.

9.7.2. Absolute specified setpoint

1. Select in the ETS tab „Room temperature controller/setpoints“ the specified setpoint „absolute“.
2. Assign a temperature value to each operating mode. The operating modes are independent of each other.
3. Using the group object 61 „Setpoint value of current operating mode“ you can change the temperature value of an active HVAC mode (with the exception of Frost protection).

9.8. Room temperature measurement

In the parameter dialogue „Room temperature measurement“, you have the possibility to select between the use of the internal temperature and a transmitted temperature.

The Gira RF Multi servo for KNX is equipped with a temperature sensor that transmits the measured temperature internally to the room temperature controller (parameter setting „internal temperature“). Depending on the mounting situation, e.g. in a niche, trapped heat may influence the measurement result.

Alternatively, the temperature can be transmitted to the device via the KNX bus, for example by an external temperature sensor (parameter setting „received temperature“).

If the servo does not receive an external temperature within 12 hours, it switches to internal measurement until an external temperature is received again.

For both types of use, you can enter a temperature correction in the „Balance“ parameter to compensate for possible deviations from the actual room temperature.

Example:

The temperature output via the group object 70 „Actual temperature“ is 22.5 °C. The temperature measured by an external thermometer in the room, however, is 21.5 °C.

Enter the value -1 Kelvin into the „Balance“ parameter to adapt the temperature of the servo.

9.9. Status

9.9.1. Status object operating mode – active operating mode

The status object operating mode – preset uses a 1-byte object.

As soon as the Gira RF Multi servo for KNX boots up or the operating mode is changed, the status is sent.

Bit	Meaning
0	Not used
1	Comfort mode active
2	Standby mode active
3	Night mode active
4	Frost protection active

Table 6: Operating mode – active operating mode – state

9.9.2. Status object operating mode – priority

The status object operating mode – priority uses a 1-byte object. As soon as the Gira RF Multi servo for KNX boots up or the operating mode is changed via the group object 41 „Operating mode – priority“, the status is sent.

Bit	Meaning
0	The operating mode set in GO 40 is active
1	Comfort mode active
2	Standby mode active
3	Night mode active
4	Frost protection active

Table 7: Operating mode – priority – state

9.9.3. Status object RHCC

The status object RHCC uses a 16-bit field. As soon as the Gira RF Multi servo for KNX boots up or at least one bit in the bit field is changed, the status is sent.

Bit	Meaning for "1"	Meaning for "0"
0	Error is active	No error is active
1		Not used (permanently "0")
2		Not used (permanently "0")
3		Not used (permanently "0")
4		Not used (permanently "0")
5		Not used (permanently "0")
6		Not used (permanently "0")
7		Not used (permanently "0")
8		Heating mode (permanently "1")
9		Not used (permanently "0")
10		Not used (permanently "0")
11		Not used (permanently "0")
12	Room temperature controller blocked	Room temperature controller blocked
13	Anti-freeze temperature reached or fallen below	Anti-freeze temperature reached or fallen below
14		Not used (permanently "0")
15		Not used (permanently "0")

Table 8: 16-Bit field RHCC

9.9.4. Status object RTSM

The status object RTSM uses a 8-bit field. As soon as the Gira RF Multi servo for KNX boots up or at least one bit in the bit field is changed, the status is sent.

Bit	Meaning for "1"	Meaning for "0"
0	Window opened	No window opened
1	Presence (presence detector)	No presence (presence detector)
2	Presence (presence button)	No presence (presence button)
3	Comfort extension active	Comfort extension inactive
4	Operating mode changeover active via forced object	Operating mode changeover inactive via forced object
5		Not used (permanently "0")
6		Not used (permanently "0")
7		Not used (permanently "0")

Table 9: 8-bit field RTSM

9.10. Presence detection

Parameterise this function for the

- extension of the comfort mode via KNX command (e.g. push button) and/or manual operation directly on the Gira RF Multi servo for KNX.

or

- Activation of the comfort mode by a presence detector.

Observe the prioritisation of the group objects, ► see "HVAC operating modes" on page 34

Requirement:

1. Open the tab „Controller auxiliary unit/Enable functions“ and tick the check box „Presence detection“.
2. Go to the „Presence detection“ tab.

Configuring the presence button

1. Select the „Presence button“ parameter under Presence detection.
2. Define the duration of the comfort extension.
3. Create a group address according to your topology, e.g. "1/0/20 receive presence".
4. Connect this group address to the group object 90 „Presence button“.
5. Go to the group object of the device that is to send the switch-on command.
6. Connect the above mentioned group address to the corresponding group object, e.g. switch output of a push button.

Configuring the presence detector

1. Select the „Presence detector“ parameter under Presence detection.
2. Create a group address according to your topology, e.g. "1/0/21 receive presence".
3. Connect this group address to the group object 93 „Presence detector“.
4. Go to the group objects of the presence detector.
5. Connect the above mentioned group address to the corresponding group object, e.g. switch output of the presence detector.



Note

Please note that the frequent change between presence and absence leads to frequent receipt of telegrams. This telegram load in turn leads to the batteries discharging more quickly.

9.11. Boost function

By activating the boost function, the heating valve is completely opened. The duration is defined in the ETS parameters.

The boost function can be disabled by manual operation or KNX telegram before the set duration has elapsed.

Requirement:

1. Open the tab „Controller auxiliary unit/Enable functions“ and tick the check box „Boost function“.
2. Go to the „Boost function“ tab.

Configuring the boost function

1. Define the duration of the boost function.
2. Create a group address according to your topology, e.g. “1/0/22 receive boost”.
3. Connect this group address to the group object 100 „Boost function – activate/deactivate”.
4. Go to the group object of the device that is to send the switch-on command.
5. Connect the above mentioned group address with the corresponding group object, e.g. switch output of a push button.

9.12. Frost protection

Use the „Frost protection“ parameter to connect a window contact or to use the temperature drop detection.

Requirement:

1. Open the tab „Controller auxiliary unit/Enable functions“ and tick the check box „Frost protection“.
2. Go to the „Frost protection“ tab.

Configuring the window contact

1. Select under Frost protection/activation the „via window contact“ parameter.
2. Define the delay time after which the frost protection is activated.
3. Create a group address according to your topology, e.g. “1/0/23 window state”.
4. Connect this group address to the group object 120 „Frost protection – window state”.
5. Go to the group object of the contact switch that is to send the switch-on command.
6. Connect the above mentioned group address to the corresponding group object of the contact switch.

Configuring the temperature drop detection

1. Select under Frost protection/activation the „via temperature drop detection“ parameter.
2. Define the delay time after which the frost protection is disabled and the last operating mode is enabled again.
3. Define the threshold value for the temperature drop detection.
Once the threshold value is reached, the frost protection is activated.



Note

Please note that the detection of temperature drops highly depend on the position of the servo and the physical conditions at the installation site.

It is possible that the threshold value for temperature drop detection is not detected by the device even if the windows are tilted or completely open.

9.13. Summer/winter operation

Use the summer operation to switch the Gira RF Multi servo for KNX to the frost protection mode outside the heating period. By doing this, it is not possible to change the HVAC mode via manual operation or KNX. A HVAC mode received during summer operation is saved and not executed until winter operation is activated.

Requirement:

Open the tab „Controller auxiliary unit/Enable functions“ and tick the check box „Summer/winter operation“.

Configuring the summer operation

1. Create a group address according to your topology, e.g. "1/0/24 summer operation".
2. Connect this group address to the group object 130 „Summer/winter operation – activate/deactivate“.
3. Go to the group object of the device that is to send the switch-on command.
4. Connect the above mentioned group address to the corresponding group object, e.g. output of a switching actuator.

9.14. Scenes

Use the „Scenes“ parameter to configure the Gira RF Multi servo for KNX as a scene auxiliary unit.

Requirement:

1. Open the tab „Controller auxiliary unit/Enable functions“ and tick the check box „Scenes“.
2. Go to the „Scenes“ tab.

Configuring scenes

1. Define the number of scenes and assign a scene number and a HVAC mode to each scene. The scene number serves for the control of an external device by means of the data type "18.001 scene control".
2. Create a group address according to your topology, e.g. "1/0/25 trigger scene".
3. Connect this group address to the group object 140 „Scene auxiliary unit“.
4. Go to the group object of the device that is to trigger the scene.
5. Connect the above mentioned group address to the corresponding group object, e.g. output of scene auxiliary unit of a push button.
6. Parameterise the respective scene number in the scene auxiliary unit of the push button.

10. Group objects

The Gira RF Multi servo for KNX provides the following group objects to connect group addresses.

10.1. Diagnosis

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 10	Low remaining battery capacity	Read	1 bit	NON-DPT	CR-T--
Rubric:	Diagnosis	Data type:	-		
Function:	If a remaining capacity of 3% is reached, an alarm is triggered. This corresponds to a remaining battery runtime of approx. three weeks.				
Description:	1 = Alarm, 0 = No Alarm				

Table 10: Low remaining battery capacity

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 11	Remaining battery capacity – state	Read	1 byte	5.001	CR-T--
Rubric:	Diagnosis	Data type:	Percent (0...100%)		
Function:	Displays the current battery capacity as a percentage. Updating the state can take up to six hours.				
Description:	Ganzzahl oder Gleitkommazahl zwischen 0 und 100				

Table 11: State of remaining battery capacity

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 12	RF interference	Read	1 bit	1.001	CR-T--
Rubric:	Diagnosis	Data type:	Switch		
Function:	Shows whether there is an RF interference (see “RF interference” on page 62).				
Description:	1: RF interference 0: No RF interference				

Table 12: RF interference

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 13	Fault	Read	1 bit	1.005	CR-T--
Rubric:	Diagnosis	Data type:	Alarm		
Function:	Shows whether there is a fault (see “Troubleshooting” on page 61).				
Description:	1: Fault 0: No fault				

Table 13: Fault

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 14	Last fault	Read	14 byte	16.001	CR-T--
Rubric:	Diagnosis	Data type:	Character (ISO 8859-1)		
Function:	Shows information about the last or current fault (see “Troubleshooting” on page 61).				
Description:	Up to 14 characters				

Table 14: Last fault

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 15	Deactivate status LED	Write	1 bit	1.001	C-W---
Rubric:	Diagnosis	Data type:	Switch		
Function:	Upon receipt of a 1, the status LED is deactivated for the time set in the ETS. After a restart, the setting is reset.				
Description:	1: Deactivate message via status LED 0: Allow message via status LED				

Table 15: Deactivate status LED

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 16	Deactivate status LED – state	Read	1 bit	1.001	CR-T--
Rubric:	Diagnosis	Data type:	Switch		
Function:	Shows whether messages via status LED are deactivated. This group object is not resent after a restart.				
Description:	1: Message via status LED deactivated 0: Message via status LED allowed				

Table 16: Deactivate status LED – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 17	In operation	Transfer	1 bit	1.017	C--T--
Rubric:	Diagnosis	Data type:	Trigger		
Function:	Shows by sending a “1” every 24 hours whether the device is available.				
Description:	1: Device available 0: Device not available				

Table 17: In operation

10.2. Manual operation

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 20	Disabling function	Write	1 bit	1.002	C-W---
Rubric:	Manual operation	Data type:	Boolean		
Function:	Blocks or allows the manual operation via the rocker switch on the device. After a restart, the setting is reset.				
Description:	0: Enable 1: Disable The polarity can be reversed in the parameter dialogue of the ETS.				

Table 18: Disabling function

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 21	Disabling function – state	Read	1 bit	1.002	CR-T--
Rubric:	Manual operation	Data type:	Boolean		
Function:	Indicates whether the manual operation is disabled or enabled. This group object is not resent after a restart.				
Description:	0: Enabled 1: Disabled The polarity can be reversed in the parameter dialogue of the ETS.				

Table 19: Disabling function – state

10.3. Valve output – service mode

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 25	Service mode – activate/deactivate	Write	2 bit	2.001	C-W---
Rubric:	Valve output (VO)Valve out-put (VO)	Data type:	Switch control		
Function:	Activates or deactivates the service mode with the first bit. The second bit defines the command value.				
Description:	Bit 1 0: Deactivate (no priority) 1: Activate (priority) Bit 2 0: Command value 0% 1: Command value 100%				

Table 20: Service mode – activate/deactivate

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 26	Service mode – state	Read	1 bit	1.002	CR-T--
Rubric:	Valve output (VO)	Data type:	Boolean		
Function:	Indicates whether the service mode is currently activated or deactivated.				
Description:	0: Deactivated 1: Activated				

Table 21: Service mode – state

10.4. Valve output – forced position

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 30	Forced position – activate/deactivate	Write	1 bit	1.001	C-W---
Rubric:	Valve output (VO)	Data type:	Switch		
Function:	Activated oder deaktiviert die Zwangsstellung.				
Description:	0: Deactivate 1: Activate				

Table 22: Forced position – activate/deactivate

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 31	Forced position – state	Read	1 bit	1.002	CR-T--
Rubric:	Valve output (VO)	Data type:	Boolean		
Function:	Indicates whether the forced position is currently activated or deactivated.				
Description:	0: Deactivated 1: Activated				

Table 23: Forced position – state

10.5. Valve output – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 35	Receive command value	Write	1 byte	5.001	C-WTU- L flag editable
Rubric:	Valve output (VO)	Data type:	Percent (0 to 100%)		
Function:	Receives the current command value as a percentage.				
Description:	0...100 % (100 % = valve open)				

Table 24: Receive command value

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 36	Send command value – state	Read	1 byte	5.001	CR-T--
Rubric:	Valve output (VO)	Data type:	Percent (0 to 100%)		
Function:	Sends the current command value as a percentage.				
Description:	0...100 % (100 % = valve open)				

Table 25: Send command value – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 37	Heating – state	Read	1 bit	1.001	CR-T--
Rubric:	Valve output (VO)	Data type:	Switch		
Function:	Sends a message if the device switches to the heating mode.				
Description:	0: Command value = 0 % 1: Command value > 0 %				

Table 26: Heating – state

10.6. Room temperature controller

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 40	Operating mode – preset	Write	1 byte	20.102	C-W--- C-WTUI* L flag editable
Rubric:	RTC	Data type:	HVAC mode		
Function:	Sends the HVAC mode.				
Description:	0: No modification 1: Comfort mode 2: Standby mode 3: Night mode 4: Frost protection				
	*C-WTUI when “Read status from bus” is selected				

Table 27: Operating mode – preset

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 41	Operating mode – priority	Write	1 byte	20.102	C-W---
Rubric:	RTC	Data type:	HVAC mode		
Function:	Sends the HVAC mode with priority with regard to group object 40.				
Description:	0: Value set in GO 40 is used 1: Comfort mode 2: Standby mode 3: Night mode 4: Frost protection				

Table 28: Operating mode – priority

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 46	Switch off controller	Write	1 bit	1.002	C-W---
Rubric:	RTC	Data type:	Boolean		
Function:	Sets the command value to 0 % and prevents the sending of telegrams to the room temperature controller.				
Description:	0: Enable 1: Switch off				

Table 29: Switch off controller

10.7. Setpoints

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
■ 60	Setpoint temperature – state	Read	2 bytes	9.001	CR-T--
Rubric:	RTC	Data type:	Temperature		
Function:	Sends the current setpoint temperature.				
Description:	5 to 30 °C				

Table 30: Setpoint temperature – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
■ 61	Setpoint value current operating mode	Write	2 bytes	9.001	C-W---
Rubric:	RTC	Data type:	Temperature		
Function:	Receives and changes the setpoint temperature of the current operating mode. The temperature of the “Frost protection” operating mode can only be changed via the ETS parameterisation.				
Description:	5 to 30 °C				

Table 31: Setpoint value current operating mode

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
■ 62	Basic setpoint value	Write	2 bytes	9.001	C-W---
Rubric:	RTC	Data type:	Temperature		
Function:	Receives a new basic setpoint value.				
Description:	5 to 30 °C				

Table 32: Basic setpoint value

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 63	Setpoint offset – preset	Write	1 byte 2 bytes	6.010 9.002	C-W--- C-WTUI* L flag editable
Rubric:	RTC	Data type:	Meter pulses Temperature difference The data point type can be modified in the parameter “Offset type via”.		
Function:	Receives the value of the setpoint offset.				
Description:	-10 ... 10				

*C-WTUI when “Read status from bus” is selected

Table 33: Setpoint offset – preset

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 64	Setpoint offset – state	Read	1 byte 2 bytes	6.010 9.002	CR-T--
Rubric:	RTC	Data type:	Meter pulses Temperature difference The data point type can be modified in the parameter “Offset type via”.		
Function:	Sends the value of the setpoint offset				
Description:	-10 ... 10				

Table 34: Setpoint offset – state

10.8. Room temperature measurement

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 70	Actual temperature	Read	2 bytes	9.001	CR-T--
Rubric:	RTC	Data type:	Temperature		
Function:	Depending on the parameter setting „Input temperature“: Internal temperature = Sends the temperature measured by the device Received temperature = Sends the received temperature				
Description:	0 °C ... 40°C				

Table 35: Actual temperature

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 71	Received temperature	Write	2 bytes	9.001	C-WTUI
Rubric:	RTC	Data type:	Temperature		
Function:	Provides the received temperature				
Description:	0 °C ... 50°C				

Table 36: Received temperature

10.9. Room temperature controller – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 80	Operating mode – active operating mode – state	Read	1 byte	20.102	CR-T--
Rubric:	RTC	Data type: HVAC mode			
Function:	During booting up or operating mode change, the current operating mode is sent.				
Description:	0: Not used 1: Comfort mode active 2: Standby mode active 3: Night mode active 4: Frost protection active				

Table 37: Operating mode – active operating mode – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 81	Operating mode – priority – state	Read	1 byte	20.102	CR-T--
Rubric:	RTC	Data type:	HVAC Mode		
Function:	During booting up or operating mode change, the prioritised operating mode is sent.				
Description:	0: The operating mode set in GO 40 is active 1: Comfort mode active 2: Standby mode active 3: Night mode active 4: Frost protection active				

Table 38: Operating mode – priority – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 84	RHCC – state	Read	2 bytes	22.101	CR-T--
Rubric:	RTC	Data type:	RHCC State		
Function:	During booting up or operating mode change, the current state of the room temperature controller is sent.				
Description:	see “Status object RHCC” on page 38				

Table 39: RHCC – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 85	RTSM – state	Read	1 byte	21.107	CR-T--
Rubric:	RTC	Data type: Combined state RTSM			
Function:	Is sent as soon as the device boots up or at least one bit is changed in the bit field.				
Description:	see “Status object RTSM” on page 38				

Table 40: RTSM – state

10.10. Presence detection

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 90	Presence button	Write	1 bit	1.001	C-W---
Rubric:	RTC	Data type:	Switch		
Function:	Receives the command to enable the comfort extension.				
Description:	0: Off 1: On				

Table 41: Presence button

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 91	Presence button – state	Read	1 bit	1.001	CR-T--
Rubric:	RTC	Data type:	Switch		
Function:	Sends the state of the presence button.				
Description:	0: Off 1: On				

Table 42: Presence button – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 92	Feed back end comfort extension	Read	1 bit	1.001	CR-T--
Rubric:	RTC	Data type:	Switch		
Function:	Sends a message one minute before the comfort extension expires.				
Description:	1: Comfort extension ends in one minute				

Table 43: Feed back end comfort extension

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 93	Presence detector	Write	1 bit	1.001	C-W---
CR-T--Rubric:	RTC	Data type:	Switch		
Function:	Receives the command to enable the comfort mode.				
Description:	0: Device remains in the current operating mode 1: Device switches to the comfort mode				

Table 44: Presence detector

10.11. Boost function

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 100	Boost function – activate/deactivate	Write	1 bit	1.001	C-W---
Rubric:	RTC	Data type:	Switch		
Function:	Receives the command to activate or deactivate the boost function.				
Description:	0: Deactivate 1: Activate				

Table 45: Boost function – activate/deactivate

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 101	Boost function – state	Read	1 bit	1.001	CR-T--
Rubric:	RTC	Data type:	Switch		
Function:	Sends a message as soon as the boost function is activated or deactivated.				
Description:	0: Deactivated 1: Activated				

Table 46: Boost function – state

10.12. Frost protection

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 120	Frost protection – window status	Write	1 bit	1.019	C-W---
Rubric:	RTC	Data type:	Window/Door		
Function:	Receives a message if the connected window contact opens or closes.				
Description:	0: Closed 1: Open				

Table 47: Frost protection – window status

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 121	Frost protection – state	Read	1 bit	1.001	CR-T--
Rubric:	RTC	Data type:	Switch		
Function:	Indicates whether the frost protection operating mode is active or inactive.				
Description:	0: Inactive 1: Active				

Table 48: Frost protection – state

10.13. Summer/winter operation

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 130	Summer/winter operation – activate/deactivate	Write	1 bit	1.001	C-W--- C-WTUI*
Rubric:	RTC	Data type:	Switch		
Function:	Receives the command to activate or deactivate the summer or winter operation.				
Description:	0: Activate winter operation 1: Activate summer operation				
	*C-WTUI when “Read status from bus” is selected				

Table 49: Summer/winter operation – activate/deactivate

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 131	Summer/winter operation – state	Read	1 bit	1.001	CR-T--
Rubric:	RTC	Data type:	Switch		
Function:	Sends a message as soon as the summer or winter operation is activated or deactivated.				
Description:	0: Winter operation activated 1: Summer operation activated The polarity can be reversed in the parameter dialogue of the ETS.				

Table 50: Summer/winter operation – state

10.14. Scenes

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
140	Scene auxiliary unit	Write	1 byte	18.001	C-W---
Rubric:	RTC	Data type:	Scene control		
Function:	Receives a scene number to enable the operating mode assigned to it. The assignment between scene number and operating mode is made in the ETS. In addition, the group object is used to teach in scenes during operation.				
Description:	Bit 1 0: Run scene 1: Learn scene Bit 2 Scene number between 1 and 64				

Table 51: Scene auxiliary unit

Note

The scene numbers between 1 and 64 are physically transmitted on the bus with the values 0 to 63.

10.15. Controller auxiliary unit

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 150	Setpoint temperature – state	Write	2 bytes	9.001	C-WTUI
Rubric:	Controller auxiliary unit Data type: Temperature				
Function:	Receives the current setpoint temperature from a leader or from a device in regular operation.				
Description:	5 to 30 °C				

Table 52: Setpoint temperature – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 151	Setpoint offset – state	Write	1 byte 2 bytes	6.010 9.002	C-WTUI
Rubric:	Controller auxiliary unit Data type: Meter pulses Temperature difference The data point type can be modified in the parameter “Offset type via”.				
Function:	Receives the setpoint offset value from a leader or from a device in regular operation.				
Description:	-10 ... 10				

Table 53: Setpoint offset – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 152	Setpoint offset – preset	Transfer	1 byte 2 bytes	6.010 9.002	C--T-
Rubric:	Controller auxiliary unit Data type: Meter pulses Temperature difference The data point type can be modified in the parameter “Offset type via”.				
Function:	Sends the setpoint offset value to further receiving devices, e.g. the leader.				
Description:	-10 ... 10				

Table 54: Setpoint offset – preset

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 153	Setpoint value current operating mode	Read	2 byte	9.001	C--T-- L flag editable
Rubric:	Controller auxiliary unit Data type: Temperature				
Function:	Sends the setpoint temperature of the active operating mode to further receiving devices e.g. the leader.				
Description:	5 to 30 °C				

Table 55: Setpoint value current operating mode

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 154	Boost function – state	Write	1 bit	1.001	C-WTUI
Rubric:	Controller auxiliary unit	Data type:	Switch		
Function:	Receives the status of the executing device as soon as the boost function is activated or deactivated.				
Description:	0: Deactivated 1: Activated				

Table 56: Boost function – state

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
 155	Boost function – activate/deactivate	Transfer	1 bit	1.001	C--T--
Rubric:	Controller auxiliary unit	Data type:	Switch		
Function:	Sends the command to activate or deactivate the boost function to further receiving devices e.g. the leader.				
Description:	0: DeactivateActivate 1: Activate				

Table 57: Boost function – activate/deactivate

Object	Name	Direction	Data width	DP type	Flags (CRWTUI)
156	Presence button – state	Write	1 bit	1.001	C-WTUI
Rubric:	Controller auxiliary unit	Data type:	Switch		
Function:	Receives the status of the executing device as soon as the comfort extension is activated or deactivated.				
Description:	0: DeactivatedActivated 1: Activated				

Table 58: Presence button – state

Object	DirectionName	Direction	Data width	DP type	Flags (CRWTUI)
157	Presence button	Transfer	1 bit	1.001	C--T--
Rubric:	Controller auxiliary unit	Data type:	Switch		
Function:	Sends the command to activate or deactivate the comfort extension to further receiving devices or followers.				
DescriptionSwitching:	0: Deactivate 1: Activate				

Table 59: Presence button

11. Troubleshooting

Error messages are displayed on the device and sent with the group object 13 to the KNX bus. The associated error description is sent with the group object 14.

As soon as an error occurs, the status LED flashes red for 20 seconds. After briefly pressing the rocker switch up or down, the last registered error is shown on the display.

If the display has been disabled in the ETS parameters, only the status LED flashes.

You will find solutions for displayed error codes in the following table:

Error description	Explanation / troubleshooting
E1 – MechanicalFail	Check the correct placement of the device on the bottom of the valve. Dismount the device, if necessary, remove the batteries, insert the batteries again and repeat the steps specified under "Installing the device" on page 18. If you have carried out an adaptation run without prior installation, follow the steps under "Adaptation run without prior installation" on page 62.
E2 – TravelTooShort	The stroke travel of the valve is too short. Dismount the device and check the valve pin of the heating for dirt and ease of movement. Remove the batteries and repeat the steps under "Installing the device" on page 18.
E3 – AdaptInvalid	The adaptation has failed. Carry out the steps specified under "Resetting the device" on page 63.
E4 – IntTempInvalid	The temperature range of the internal temperature is outside the admissible range (0 to 40 °C). Check the installation conditions of the device.
E5 – ExtTempInvalid	The temperature range of the received temperature is outside the admissible range (0 to 50 °C). Check the installation conditions of the device.
E6 – BatteryEmpty	The batteries are completely discharged. Insert new batteries into the device, see "Inserting the batteries" on page 19.
E7 – AuxTimeout	The device is parameterised as a controller auxiliary unit and does not receive a corresponding response to an outgoing telegram. Check the parameterisation and the connection of the group addresses in the ETS.
E8 – IPCError	Internal error. Carry out the steps specified under "Resetting the device" on page 63.
E9 – UpdateRequired	A firmware update is required.
EA – ExtTempTimeout	The servo does not receive an external temperature. Check the external temperature sensor. Additional information can be found on page 36.

Table 60: Error display and troubleshooting

11.1. RF interference

An RF interference is present if the symbol  on the display lights up and group object 12 „RF interference“ sends a 1. An RF interference is signalled in two cases:

Case 1: Three consecutive transmission attempts to a group address have failed.

- Check whether the device is in the radio range of the RF installation.
- Check whether the programming of the device in the KNX installation is missing.

Case 2: The device detects a reduced battery life due to radio interferences.

- Check whether other devices interfere with the radio connection.

Reduction of the battery life due to permanent RF interferences

Search for the reasons of the RF interferences. Frequent telegram losses lead to a higher telegram load which in turn consumes more energy. The device can also be switched to receive mode unnecessarily often due to radio interference. This will have a negative effect on the battery life.

11.2. Adaptation run without prior installation

Obey the battery safety instructions, ► page 10.

If an adaptation run is performed without having screwed the Gira RF Multi servo for KNX onto the heating valve, the plunger is pushed out of its guidance.

Carry out the following measures to eliminate the error:

1. Open the battery compartment and remove the batteries.
2. The plunger is guided in three grooves. Position the plunger in a way that the guiding pins are located above the corresponding grooves.
3. Apply light pressure to the plunger with one finger.
4. In the meantime, reinsert the batteries. Make sure that the polarity is correct.
5. Wait until the plunger has moved to its correct position.

11.3. Resetting the device



Obey the battery safety instructions, ► page 10.

1. Remove the battery cover at the top edge with your finger.
2. Remove the batteries from the device.
3. Wait for > 15 seconds.
4. Reinsert the batteries. Make sure that the polarity is correct.
5. Close the battery cover by pressing it slightly down.
6. Wait until „In“ is shown on the display.
7. Press the rocker switch up or down for a long time (> 3 sec.) to start the adaptation run.

11.4. Resetting to factory settings



Obey the battery safety instructions, ► page 10.

1. Remove the battery cover at the top edge with your finger.
2. Remove the batteries from the device. Wait for > 15 seconds.
3. Hold the programming button down.
4. Reinsert the batteries. Make sure that the polarity is correct.
5. Wait until the display countdown has finished.
6. Release the programming button.
7. Close the battery cover by pressing it slightly down.

When you reset the device to the factory settings, it behaves as it does in the state of delivery. The device is then unconfigured:

- The device remains in the existing projects.
- The device keeps the version of the application program in the ETS.
- The entire parametrisation is rejected.
- The individual KNX address of the device returns to: 15.15.255.
- The domain address is reset to FFFF:FFFFFFFF.

11.5. FAQs - Frequently asked questions

What do I do if the servo cannot be screwed onto the heating valve or is not positioned correctly on the heating valve?

1. Loosen the union nut and remove the servo from the heating valve.
2. Check whether the thread of the servo matches the thread of the heating valve or whether an adapter has to be used.
3. Check whether the thread of the heating valve is damaged.
4. If it is damaged, have the heating valve replaced by a professional.
5. Restart the installation mode and the adaptation run by repeating the installation, ► see “Installing the device” on page 18.

Why does the servo not perform an adaptation run?

The battery voltage may be too low. Replace the batteries.

If the problem persists, a blocked valve pin may be the reason.

1. Loosen the union nut and remove the servo from the heating valve.
2. Check the valve pin of the heating valve for ease of movement.
3. Restart the installation mode and the adaptation run by repeating the installation, ► see “Installing the device” on page 18.

What do I do if the device no longer responds?

Replace both batteries with new batteries of the same type, ► see “Replacing the battery” on page 20

What can cause the batteries to discharge quickly?

- Frequent sending of KNX telegrams can cause the batteries to discharge more quickly.
- Cyclical transmission in small intervals and unnecessary status queries should be avoided.
- Check the parameterisation of the display and reduce the interval for switching off the display, if necessary.
- An external device may interfere with the radio connection.
- Do not use rechargeable batteries.

How many group addresses can be created and/or connected?

512 group addresses can be created per servo. The number of links between group address and group object is limited to 1024.

What do I need to consider if I want to use the device in a heating circuit manifold?

- Select the operating mode „Setpoint operation“ mode in the ETS and use an external controller.
- If you use an external 2-point controller, you must expect significantly higher battery consumption.
- The use of an external temperature sensor does not work in this use case.

Where is the context help?

From version 5.6, the ETS offers a context help function, which provides detailed information about parameters and appears directly in the parameter dialogue. To enable the context help, open the parameter dialogue and click on the “Context help” button on the toolbar. To show the context help of a parameter, click on the desired parameter (“Calling up the context help in the ETS” on page 27).

Are there software updates for my Gira RF Multi servo for KNX?

Nutzen Sie zur Suche nach einer aktuelleren Firmware die Service App der ise GmbH ► see “Updating firmware” on page 26.

12. Disassembly and Disposal

Disassembly

To facilitate the disassembly, there are three options:

- To activate the boost function, press the rocker switch upward for a long time or
- remove the batteries and reinsert them or
- press the rocker switch briefly upward to increase the setpoint value.

Afterwards

1. loosen the union nut on the Gira RF Multi servo for KNX.
2. Disconnect the device from the heating valve.
3. Remove the batteries if you will not be using the device for a longer period of time.



Further use of KNX secure devices

To be able to use the device safely in another ETS project, carry out the function “Resetting to factory settings” on page 64.

Disposal

Make an active contribution to protecting the environment by disposing of all materials in an environmentally-responsible way.



Packaging and box

Dispose of the packaging material appropriately, in a card, paper or plastic recycling bins.



Device

Old devices must not be disposed of with domestic refuse!

You can dispose of your old device free of charge at designated collection facilities or, if necessary, you can hand it in to your specialist dealer. Contact your local authority for recycling details.



Disposal of batteries

Remove empty batteries immediately and dispose of in an environmentally friendly manner. Do not throw batteries into household waste. Consult your local authorities about environmentally friendly disposal. According to statutory provisions, the end consumer is obligated to return used batteries.

13. Glossary

Absolute specified setpoint

An individual temperature value is defined for each HVAC mode. These setpoint values are independent of each other.

Basic setpoint temperature

The basic setpoint temperature is used as reference value for the relative specified setpoint. This value corresponds to the temperature value of the comfort mode. The temperature values for standby mode and night mode are derived from the basic setpoint temperature.

Catalogue

Abbreviated name for “KNX online product catalogue”. The catalogue is a product database. The catalogue contains all KNX-certified or -registered devices. The device data are saved as a product database entry.

Controller auxiliary unit

The definition as a controller auxiliary unit extends the range of functions and the possibility of manual operation as well as the display of a follower or a device in setpoint operation.

Control value, command value

Current value of the opening of the heating valve in percent:

- Valve completely open = 100%
- Valve completely closed = 0%

ETS (Engineering Tool Software)

The device is configured in the ETS software. The ETS is available with various ranges of functions from the KNX Association (www.knx.org).

FDSK (Factory Default Setup Key)

The FDSK is used for secure communication between KNX Secure devices. The combination of FDSK and the device's serial number can provide each device with a unique identification. Together, they form the device certificate.

Depending on the use case, the certificate may be required for initial authentication in the ETS or for encryption of communication.

The KNX Secure certificate is printed on a sticker in the battery cover. A second sticker is enclosed with the product.

Firmware

Software which is embedded in the device hardware and is used to operate the device. Functional enhancements for the device are available with a new firmware version.

Flags (CRWTUI)

Every group object has flags with which the group object obtains methods: C=Communication, R=Read, W=Write, T=Transfer, U=Update, I=Initialise.

Follower

The operating mode of the Gira RF Multi servo for KNX for parameterisation of a subordinate device which receives the commands of the superordinate device (leader).

Forced position

Predefined command value of the Gira RF Multi servo for KNX. The command value can be parameterised in the ETS.

HVAC mode

Heating Ventilation Air Conditioning

The HVAC modes are defined by the KNX via the data type 20.102.

1 = Comfort $\triangleq$ comfort mode

2 = Standby $\triangleq$ standby mode

3 = Economy $\triangleq$ night mode

4 = Building Protection $\triangleq$ frost protection

The terms HVAC mode and operating mode are used as synonyms.

In operation / Heartbeat

Sign of life of the KGira RF Multi servo for KNX which signals the operability of the device every 24 hours.

Leader

The operating mode of the Gira RF Multi servo for KNX for parameterisation of a superordinate device which is used for the control of the subordinate devices (followers).

Product database entry (also catalogue entry)

Data relating to a device in the "Online KNX Product Catalogue" of the ETS. The product database entry contains all data to allow the device to be configured in the ETS. The product database entry is provided in the form of a file by the device manufacturer. The latest version of product database entries from Gira Giersiepen GmbH & Co. KG can be downloaded free of charge from our website www.gira.de.

The product database entry is often also called the "catalogue entry".

Room temperature controller (RTC)

The room temperature controller included in the Gira RF Multi servo for KNX is used to control the parameterised temperature values and/or the selected HVAC modes.

Relative specified setpoint

The temperature values for standby mode and night mode are in relation to the basic setpoint temperature. If the basic setpoint temperature is modified, the temperatures for standby mode and night mode are also changed according to the parameterised values.

RTSM status

The status object RTSM (room temperature and setpoint module) is used for the transmission of the current status values of the integrated room temperature controller, ► see "Status object RTSM" on page 38

Service mode

The service mode is used to set the Gira RF Multi servo for KNX to a fixed command value (0% or 100%).

Setpoint offset

When the relative specified setpoint is used, the temperature modification is reached by changing the setpoint temperature by a defined value. An offset of -2 K, for example, corresponds to a temperature reduction of 2 °C. The maximum permissible offset can be set in the ETS parameters,

► see “Relative specified setpoint” on page 35

Setpoint value, setpoint temperature

Temperature value which is defined by parameterisation, manual operation or the KNX bus and compared with the current room temperature by the Gira RF Multi servo for KNX.

Therefore, the integrated room temperature controller defines the command value to adapt the current room temperature to the setpoint value. The terms setpoint value and setpoint temperature are used as synonyms.

Updates

You will find information on the new firmware version under “Updating firmware” on page 26.

Valve output (VO)

Includes all functional units of the Gira RF Multi servo for KNX, which can be used to change the command value or the valve position.

Valve flushing

Every seven days, the Gira RF Multi servo for KNX performs an automated valve flushing in order to prevent calcification. The cycle of 7 days starts by inserting the batteries.

14. Gira RF Multi servo for KNX Licensing Agreement

The terms and conditions for use of the software by you as the “Licensee” are set out below.

By accepting this Agreement and installing the Gira RF Multi servo for KNX software or putting the Gira RF Multi servo for KNX into operation, you are entering into an agreement with Gira Giersiepen GmbH & Co. KG and agree to be bound by the provisions of that agreement.

14.1. Definitionen

Licensor: Gira, Giersiepen GmbH & Co KG, Radevormwald, Germany

Licensee: The intended recipient of the Gira RF Multi servo for KNX software.

Firmware: Software that is integrated into the Gira RF Multi servo for KNX hardware and is used to operate.

Gira RF Multi servo for KNX: The Gira RF Multi servo for KNX refers to all the software, including the operating data, which is provided for the Gira RF Multi servo for KNX product. In particular, this includes the firmware and the product database.

14.2. Subject of the Agreement

The subject of this Agreement is the Gira RF Multi servo for KNX software provided on data carriers or via download as well as the associated documentation in written or electronic form.

14.3. Rights to use the software

The Licensor grants the Licensee the non-exclusive, perpetual, non-transferable and non-sublicensable right to use the Gira RF Multi servo for KNX software in accordance with the following terms and conditions, for the purposes and areas of application specified in the valid version of the documentation (which is made available in printed form or else as online help or online documentation).

The Licensee undertakes to ensure that anyone using the program does so only under this Licensing Agreement and complies with this Licensing Agreement.

All rights that are not expressly granted to the Licensee under this Agreement shall remain expressly with the Licensor.

14.4. Limitation of the rights of use

14.4.1. Copying, processing or transfer

The Licensee is not entitled to use, copy, process or transfer the Gira RF Multi servo for KNX software, in full or in part, in any way other than as described herein.

An exception to this is one (1) copy made by the Licensee exclusively for archiving and backup purposes.

14.4.2. Reverse engineering or conversion technologies

The Licensee is not entitled to apply reverse engineering technologies to the Gira RF Multi servo for KNX software or to convert the Gira RF Multi servo for KNX software into another form, where such use is not permitted by way of exception on the basis of statutory limiting provisions. Such technologies include, in particular, disassembly (conversion of binary-coded machine commands from an executable program into an assembler language that can be read by humans) or decompilation (conversion of binary-coded machine commands or assembler commands into source code in the form of high-level language commands).

14.4.3. Firmware and hardware

The firmware may only be installed and used on the hardware approved by the Licensor (Gira RF Multi servo for KNX).

14.4.4. Transfer to third parties

The Gira RF Multi servo for KNX software may not be transferred to third parties or made accessible to third parties. The Licensee may only pass on the Gira RF Multi servo for KNX software and all licence keys required to use the software to third parties, with the exception of correspondingly marked software, if and in so far as (i) the Licensee has removed the Gira RF Multi servo for KNX software and any backup copies, as well as the licence keys required to use the Gira RF Multi servo for KNX software, from its system by deleting or uninstalling it and (ii) the third party undertakes to comply with these licensing conditions vis-à-vis the Licensor before such use or transfer. The Licensee shall expressly inform the third party of these terms of use before transferring the Gira RF Multi servo for KNX. In the event of transfer to a third party, the Licensee's right to personal use shall lapse.

14.4.5. Hiring out, leasing or sublicensing

The Licensee is not entitled to hire out or lease the Gira RF Multi servo for KNX Software or to issue sublicences to the program.

14.4.6. Software production

The Licensee requires written approval from the Licensor to create and distribute software derived from the Gira RF Multi servo for KNX software.

14.4.7. The mechanisms of licence management and copy protection

The licence management and copy protection mechanisms for the Gira RF Multi servo for KNX software must not be analysed, published, circumvented or disabled.

14.5. Ownership and confidentiality

14.5.1. Documentation

The Gira RF Multi servo for KNX software and documentation (provided in printed form or else as online help or online documentation) are trade secrets of the Licensor and/or subject to copyright and/or other rights and shall continue to belong to the Licensor. The Licensee shall observe these rights.

14.5.2. Transfer to third parties

Neither the software, the data backup copy, nor the documentation (provided in printed form or else as online help or online documentation) may be passed on to third parties at any time - in whole or in part, for a fee or free of charge.

14.6. Changes and subsequent deliveries

14.6.1. Change to the subject of the Licence

The Licensor reserves the right to expand, improve or otherwise modify the subject of the Licence, including documentation, at any time without notice or to have the aforementioned actions performed by third parties, if and in so far as the modifications do not result in a reduction or change in content of the scope of services that the Licensor is obliged to provide to the Licensee. This Licensing Agreement shall continue to apply accordingly to the further developed software.

14.6.2. Change to the Licensing Conditions

In the course of the continual development of our products and services, we occasionally incorporate additional functions and features. As a result of this, or any technical or legal changes, it may be necessary to adapt these Licensing Conditions to reflect these changes. For this reason and where there is just cause, the Licensor is entitled to modify and adapt these Licensing Conditions at any time with future effect. Just cause exists in the following cases:

- for the implementation of amended statutory requirements or case law,
- for the implementation of amended technical requirements, such as a new technical environment or other operational reasons,
- for adaptation to changing market conditions, such as increased number of licensees,
- if the amendments and modifications are made for the benefit of the Licensee, e.g. to improve Licensee experience or security.

If the Licensor makes use of its right to make amendments, it shall notify the Licensee of this in written form at least and notify them of the amendments.

The Licensee has a right to object to the amendment. If the Licensee does not object within 8 weeks from receipt of the notification of the amendment to these Licensing Conditions, the amended Licensing Conditions shall be deemed to have been accepted and shall apply in the further course of the Agreement. In the notification of the amendment to these Licensing Conditions, the Licensor shall once again expressly inform the Licensee separately of its right to object, the objection period and the consequences if no objection is raised.

In the event of an objection by the Licensee to the amended Licensing Conditions within the time limit, the Licensor shall be entitled to terminate the contractual relationship pursuant to Clause 9 para. 2, while safeguarding the legitimate interests of the Licensee.

14.7. Warranty

14.7.1. Software and documentation

The currently valid version of the Gira RF Multi servo for KNX software and documentation (provided in printed form or else as online help or online documentation) will be made available to the Licensee. The warranty period for the Gira RF Multi servo for KNX software is 24 months. During this time, the Licensor warrants as follows:

- The software is free of material and manufacturing defects at the time of handover.
- The software works in accordance with the enclosed documentation in the currently valid version.
- The software can run on the computer workstations specified by the Licensor.

The warranty obligation shall be discharged through the delivery of a replacement. Gewährleistungsbeschränkung

14.7.2. Limitation of warranty

Otherwise, no warranty is given that the Gira RF Multi servo for KNX software and its data structures are free from defects. The warranty does not extend to defects that are attributable to improper use or other causes outside of the Licensor's control either. Further warranty claims are excluded.

14.8. Liability

The Licensor's liability, regardless of the legal grounds, is excluded for slight negligence.

This exclusion of liability does not apply to claims for damages that are based on a breach of essential contractual obligations by the infringing party; essential contractual obligations are those obligations that enable the proper fulfilment of the Agreement in the first place and on the fulfilment of which the contractual partner may regularly rely. Furthermore, the exclusion of liability does not apply to losses or damage due to personal injury, loss of life or damage to health, nor does it apply to guarantees assumed by the Licensor (liability under a guarantee). Nor does the exclusion of liability affect claims by the Licensee that are based on the statutory provisions on product liability.

In cases of slightly negligent breach of essential contractual obligations and in cases of gross negligence by ordinary vicarious agents, the claim for damages is limited to the compensation for the typical damage that is foreseeable at the time of conclusion of the Agreement and the amount is limited to the product purchase price.

In so far as the Licensor's liability is excluded or limited, this shall also apply to the personal liability of the Licensor's employees, workers, personnel, representatives and vicarious agents.

14.9. Applicable law

(1) This Agreement shall be governed by German law, to the express exclusion of the conflict of laws provisions. The application of the Uniform Law on the International Sale of Goods and the Uniform Law on the Formation of Contracts for the International Sale of Goods - both dated 17 July 1973 - and the United Nations Convention on Contracts for the International Sale of Goods (CISG) dated 11 April 1980 is excluded. If the user is a consumer within the meaning of Section 13 BGB, mandatory statutory consumer protection provisions under the law of the state in which the consumer has their habitual residence shall remain unaffected.

(2) The place of jurisdiction for all claims arising from and in connection with this Agreement shall be the court having local jurisdiction for the contracting authority's registered office. This does not apply if the Licensee is not a merchant, a legal entity under public law or a special fund under public law or if it has no general place of jurisdiction within the Federal Republic of Germany. In addition, each party shall be entitled to bring an action against the other at its place of residence or business. The right of the parties to bring proceedings before the competent courts in urgent cases remains unaffected.

14.10. Termination

This Agreement and the rights granted therein shall end if the Licensee fails to comply with one or more provisions of this Agreement or terminates this Agreement at least in written form. The transferred Gira RF Multi servo for KNX software and documentation (provided in printed form or else as online help or online documentation) including all copies must be returned in full, immediately and without request in this case. In this case, a claim for reimbursement of the price paid is excluded.

Upon termination of the Agreement, the licence to use the Gira RF Multi servo for KNX software shall expire. In this case, the Gira RF Multi servo for KNX product must be taken out of operation. Continued use of the Gira RF Multi servo for KNX without a licence is excluded.

The start-up software and visualisation software must be uninstalled and all copies must be destroyed or returned to the Licensor.

14.11. Subsidiary agreements and amendments to the Agreement

Subsidiary agreements and amendments to the Agreement must be made in writing in order to be valid. This also applies to any amendment of this clause.

This Licensing Agreement is executed in German and English. The English version is for information purposes only. In the event of ambiguities or disputes arising from the Agreement, the German version shall be considered binding.