

Revox Multiuser 3.0 KNX Gateway

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1 Product description

1.1 Introduction

The Multiuser System is a Multiuser / multiroom audio system developed by Revox, based on network communication, with a unique operating philosophy and impressive audio quality. It impresses with a streaming option at CD level and minimal latency times, so that music in its purest form can be heard in any room with virtually no delay.

With the Revox Multiuser 3.0 KNX Gateway, the Multiuser system can be conveniently integrated into the KNX home control system, regardless of which KNX manufacturer the customer has chosen. Thanks to the high level of awareness of the KNX control system and the thousands of projects carried out by KNX installers and system integrators, it is now child's play to make the audiophile music world of Revox accessible to customers.

The Revox Multiuser 3.0 KNX Gateway serves as an interface between the Revox Multiuser system and KNX. Most of the available functions are controlled with a simple 1-bit command and corresponding status feedback is available for the basic functions. For example, switching on the TV set can activate the Multiuser amplifier M30 with the corresponding input and simultaneously start a light / blind scene in the KNX world. Chapter 2 outlines various application scenarios for the combination of home/building technology and Revox.

1.2 Definitions and explanations of terms

Multiuser system

The Revox Multiuser System is a user-related operating concept, i.e. the music follows the user in dynamic, customisable listening zones. As soon as a user logs into another room with its user profile, the previous room is automatically linked to the current room and the same content is played in both rooms. This automatic grouping by the user should not be confused with the zone group, where rooms are grouped into zones in the Multiuser app.

Multiuser server

The Multiuser server is the centre of the Multiuser/Multiroom audio system. This can currently consist of a Multiuser Server V400 or a STUDIOMASTER M300 or M500.

Multiuser amplifier M30 / V219

The M30 and V219 multiuser amplifiers are stereo amplifiers (2 x 50 watts) that can be used to provide sound for a room. Each Multiuser amplifier can be assigned a (room) name and a (room) alias in the Multiuser Configurator. Each Multiuser amplifier can optionally be equipped with an I/O module. This provides 3 audio inputs and an audio output (PreOut). These "local" inputs can also be streamed to other rooms.

Multiuser Zone

In the Multiuser system, rooms or amplifiers can be grouped into zones. Zones can also overlap, i.e. a room can belong to several zones. By creating zones, an entire zone can be set to a specific volume value with one command, for example. Up to 10 different zones are available for grouping the rooms.

Multiuser settings

The basic configuration of the system can be created directly in the settings area of the Revox Multiuser App. This includes basic configurations such as naming the users, rooms and zones and other simple settings for music services as well as saving the desired user favourites (music sources with quick access).

Expert settings, including the configuration of the KNX Gateway interface, are made in the Multiuser Configurator and of course in the ETS.

Multiuser Configurator

Revox offers a web-based user interface, the Multiuser Configurator, for configuring the Multiuser system, which can be called up with all common browsers such as Internet Explorer, Firefox, Chrome etc. The Configurator communicates with the Multiuser server. The Configurator communicates with the Multiuser Server. All configuration data for the entire Multiuser system is also stored there. This includes all Multiuser services.

Multiuser Text Protocol

The Multiuser Text protocol is an easy-to-read and easy-to-learn interface language that can be used to control the basic functions of the Multiuser system simply and effectively. Individual commands or command chains are also entered and defined in Multiuser Text in the Multiuser Configurator.

Multiuser Action Server

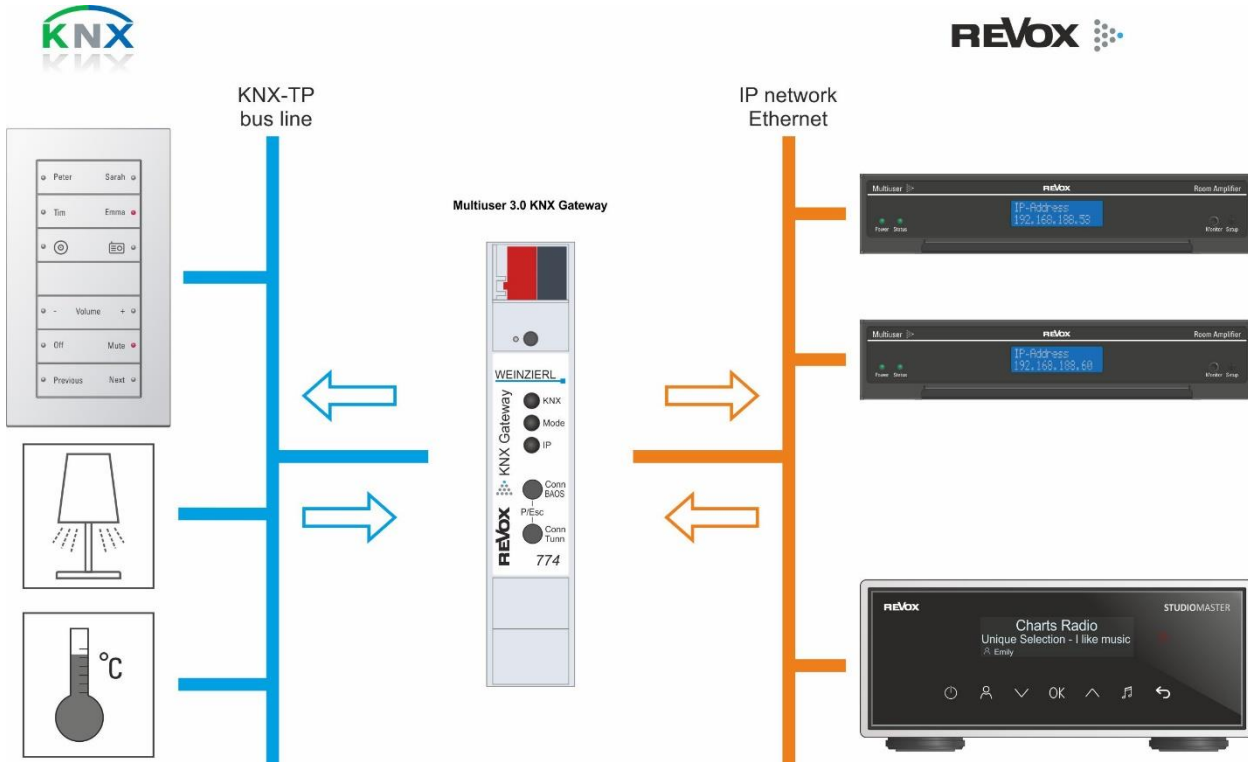
The Multiuser Action Server runs on port 11244 of the Multiuser Server. Via this action server, third-party devices or external controllers can control the Multiuser system via text protocol (IP telegrams) and debug it at the same time. A terminal programme is used to connect to the action server via TCP/IP and Telnet. Recommended terminal programmes are PuTTY and TeraTerm.

To connect to the server via TCP/IP, enter the corresponding IP address of the Multiuser server and the port of the action server in the terminal programme. The port number is set to port **11244**.

1.3 Application scenarios

The following illustrations show a section of standard cabling with the Revox Multiuser 3.0 KNX Gateway. The KNX components (e.g. touch/temperature sensors, switching/dimming actuators) are shown on the left, while Multiuser components (Multiuser amplifier, Multiuser server) in the Ethernet are shown on the right. Essential Ethernet or KNX components such as switches, routers or power supply units are not shown in this illustration for reasons of clarity.

Standard cabling with typical applications



Push-button sensors trigger KNX commands.



The Revox Multiuser 3.0 KNX Gateway transmits the corresponding KNX commands to the Multiuser system (IP).



Variant 1: In the Multiuser system, corresponding rooms are switched on for the users with their music source.

Variant 2: A KNX scene starts a zone command for several rooms.

Variant 3: An alarm button activates the timer for the bedroom; at the same time, the Multiuser system transmits the timer status to the push-button sensor with LED display - LED lights up.

KNX scene X dims the lighting group in the living room with the help of the dimming actuator.

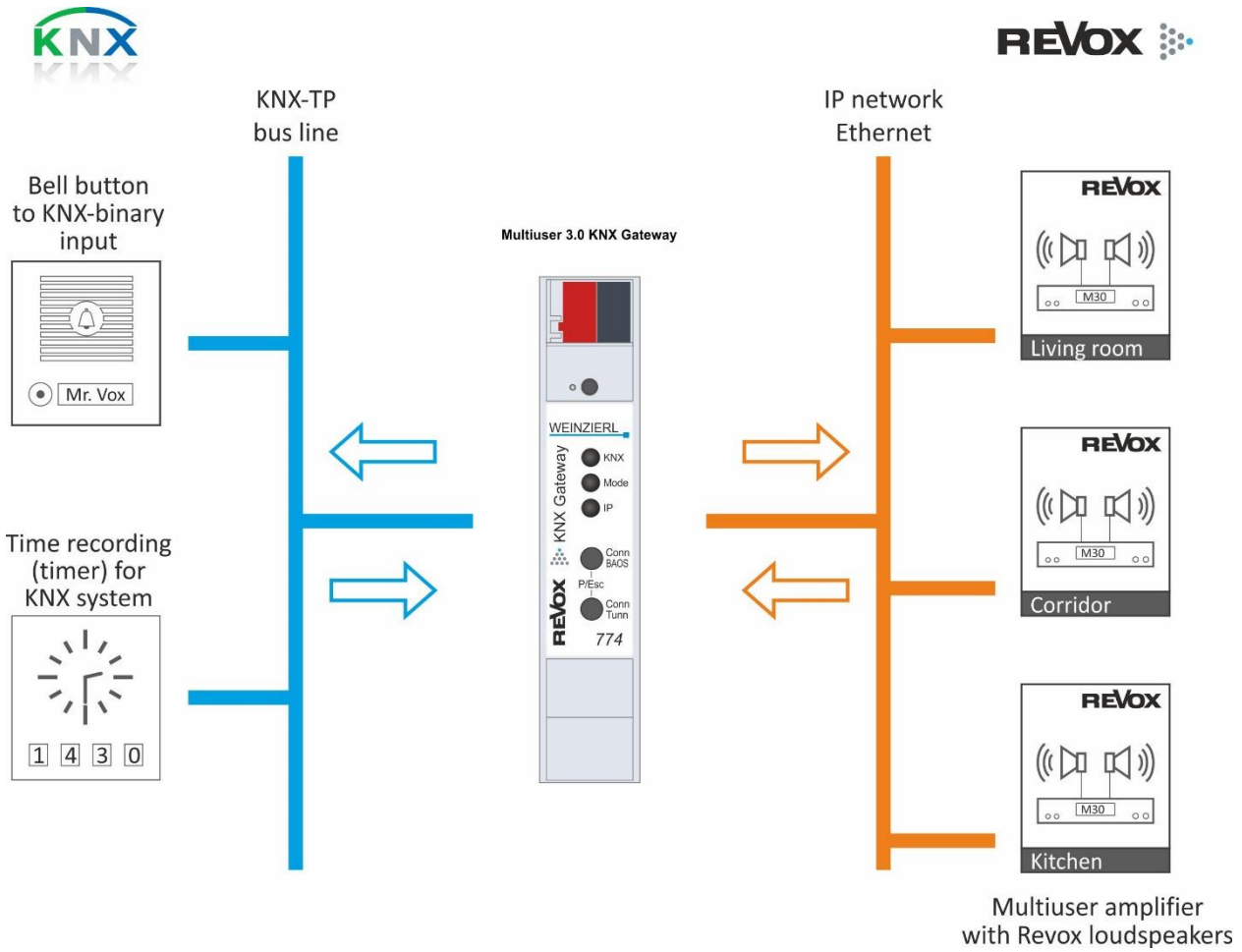


The Revox Multiuser 3.0 KNX Gateway transmits the corresponding scene call to the KNX system.



An audio signal from the TV set is detected at the HDMI input of the Multiuser amplifier in the living room. Its CEC trigger switches the amplifier on and activates a KNX scene X via the text protocol.

Intelligent door communication with the Multiuser system



The bell sensor reports a bell actuation.

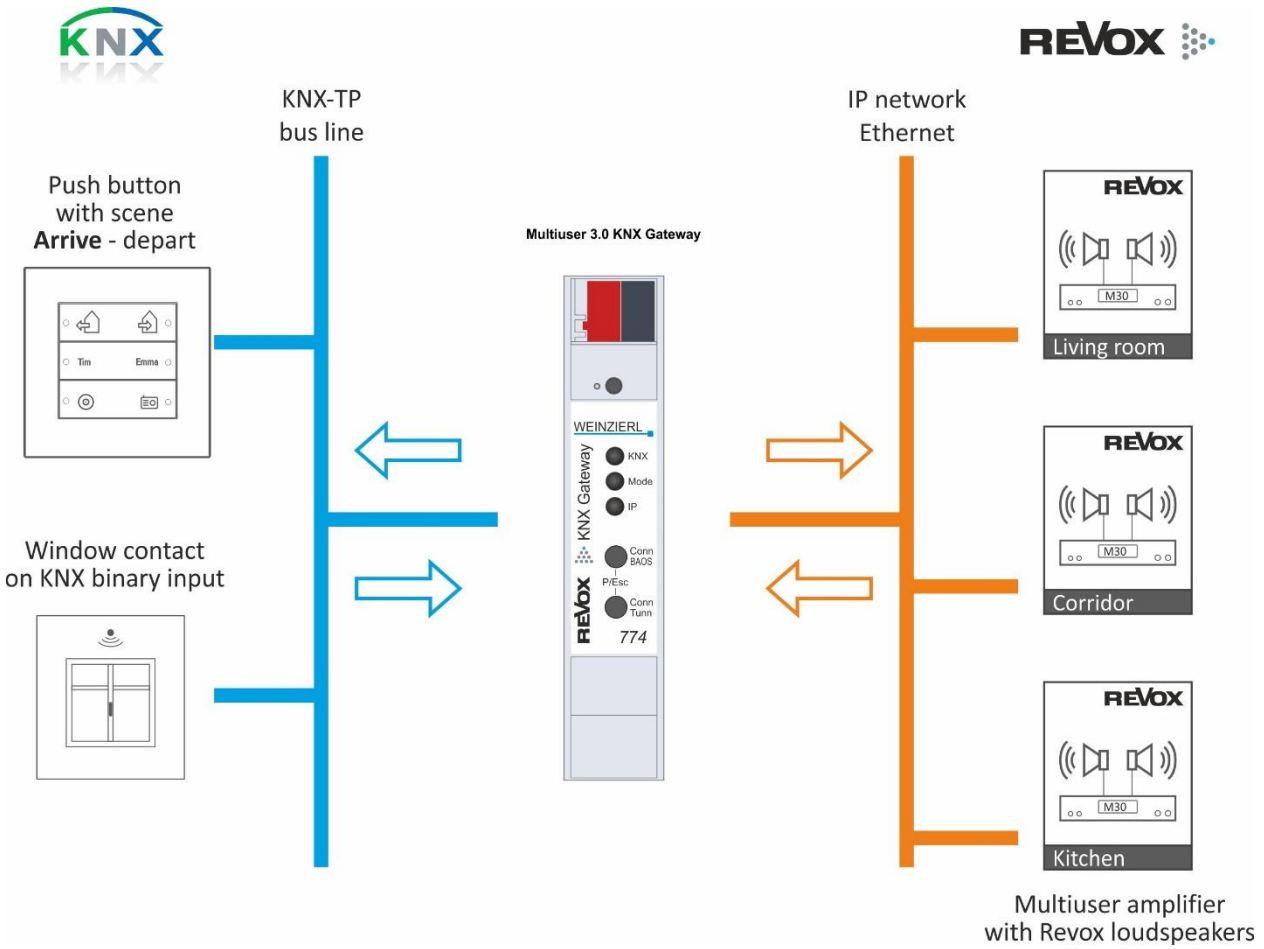


The Revox Multiuser 3.0 KNX Gateway transmits the corresponding KNX commands to the Multiuser system (IP).



A door chime is played in the linked rooms, which is added as a music source via USB stick or network storage path.

House scene "Coming - Going" with the Multiuser system



A push-button sensor in the hallway triggers the **Coming / Leaving** scene.



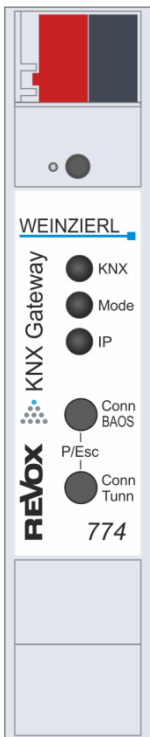
The Revox KNX Gateway transmits the corresponding KNX commands to the Multiuser system (IP)



With the KNX scene **Coming**, certain rooms are activated with a preferred user and their user favourite.

In the KNX scene **Leaving**, all rooms or Multiuser amplifiers are switched off with the "System Off" command. This command also affects rooms that are not listed in the KNX Room List in the Configurator.

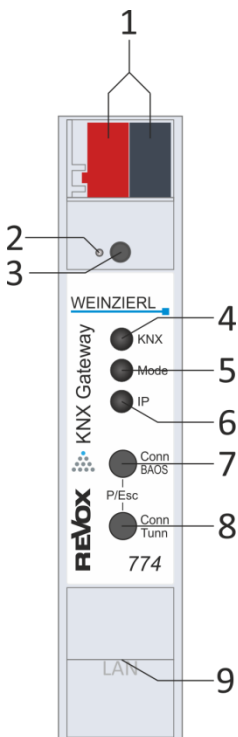
1.4 Revox Multiuser 3.0 KNX Gateway range of functions



- With the Revox Multiuser 3.0 KNX Gateway, up to 15 Revox Audio rooms can be controlled.
- A maximum of two Gateways can be used per Multiuser server, meaning that up to 30 rooms can be controlled. If the Multiuser system consists of several servers (Multi Server solution), the number of possible Gateways and rooms increases accordingly.
- The Multiuser 3.0 KNX Gateway can be used as an IP interface into the KNX system
- Functions are linked directly to group addresses in the ETS programming software
- Revox offers a complete database for project planning in the ETS
- 50 communication objects are currently available for each room, e.g:
 - Room (user-dependent) Switching on and off incl. status
 - User-dependent room switching on and off with targeted user favourite call
 - Control commands: Next, Previous and Pause
 - Volume commands: Absolute, Relative (▢), Mute, Feedback
 - Timer ON/OFF (from Multiuser server) incl. status
- There are also 16 (8 x ON/ 8 x OFF) individual actions available per room, the function of which can be defined in the Revox Configurator using the Multiuser Text Protocol.
- The Revox Multiuser system reacts to KNX scene numbers (1 - 64).
- KNX scenes (1 - 64) can be executed from the Revox Multiuser system.
- In addition to the KNX scenes, 8 freely definable KNX actions (1-bit commands) are available, which can be triggered directly from the Revox world.

1.5 Gateway information

The Revox Multiuser 3.0 KNX Gateway is mounted on a top-hat rail and has a space requirement of 1 TE (18 mm). It has the following operating elements and displays.



1. connection of the KNX Gateway with bus terminal
2. learning LED
3. learning button
4. KNX LED (multicoloured)
5. mode LED (multicoloured)
6. IP LED (multicoloured)
7. button Conn BAOS
8. push-button Conn Tunn
9. RJ 45 socket for connection to the LAN (supports PoE*)

It is not necessary to connect an external supply voltage. If there is no bus voltage, the device has no function.

* Power < 360 mW or 15mA

KNX programming mode is switched on or off using the recessed KNX programming button 2 or by pressing buttons 7 and 8 simultaneously.

Manual operation and status display

The KNX LED 4 lights up green when KNX bus voltage is present. When this LED flickers, telegram traffic is taking place on the KNX bus. Communication errors (e.g. telegram repetitions or telegram fragments) are indicated by a brief colour change to red.

Summary of the states of the KNX LED 4:

LED behaviour	Meaning
LED lights up green	KNX bus voltage present
LED flickers red	Telegram traffic on the KNX bus
LED briefly red	Error in communication on the KNX bus

The IP LED 6 lights up when an Ethernet link is active. This LED is green if the device has valid IP settings (IP address, subnet and gateway). If the IP settings are invalid or do not exist, this LED is red. This is also the case, for example, if the device has not yet received the IP settings from the DHCP server. If this LED flickers, IP telegram traffic is taking place. Summary of the states of the IP LED 6

LED behaviour	Meaning
LED lights up green	The device has an active Ethernet link and valid IP settings.
LED lights up red	The device has an active Ethernet link and invalid IP settings or has not yet received any IP settings from the DHCP server.
LED flickers green	IP telegram traffic

The Mode LED 5 can be used to display the status of each BAOS and KNXnet/IP tunnelling connection.

The respective BAOS connection can be selected with the Conn BAOS button 7. Pressing the Conn BAOS button 7 increments the connection number. The current connection number is displayed by the mode LED 5 flashing 1 to 10 times. An available BAOS connection is displayed in green, a busy BAOS connection in orange.

The respective KNXnet/IP tunnelling connection can be selected using the Conn Tunn button 8. Pressing the Conn Tunn button 8 increments the connection number. The current connection number is indicated by the mode LED 5 flashing 1 to 5 times. An available KNXnet/IP tunnelling connection is displayed in green, a busy KNXnet/IP tunnelling connection in orange.

This display can be cancelled using the escape function (Esc) by pressing the Conn BAOS / Conn Tunn buttons 7 8 simultaneously.

If neither programming mode nor manual operation are active, the mode LED 5 can indicate configuration errors.

LED behaviour	Meaning
LED lights up green	The device is working in normal operating mode.
LED lights up red	Programming mode is active.
LED flashes 1x...10x green	Programming mode is not active. Manual operation (BAOS status display) active: The selected BAOS connection (1...10) is free.
LED flashes 1x...10x orange	Programming mode is not active. Manual operation (BAOS status display) active: The selected BAOS connection (1...10) is busy.
LED flashes 1x...5x green	Programming mode is not active. Manual operation (tunnel status display) active: The selected tunnel connection (1...5) is free.
LED flashes 1x...5x orange	Programming mode is not active. Manual operation (tunnel status display) active: The selected tunnel connection (1...5) is busy.
LED flashes red	Programming mode is not active. Manual operation is not active. The device is not loaded correctly, e.g. after cancelling a download.

1.6 Assembly

Safety instructions

Electrical appliances may only be installed and assembled by a qualified electrician. The applicable accident prevention regulations must be observed. Failure to observe the installation instructions may result in damage to the appliance, fire or other hazards.

DANGER!

Electric shock if live parts are touched. Electric shock can lead to death. Before working on the appliance, disconnect the connecting cables and cover live parts in the vicinity!

For further information, please refer to the technical data sheet enclosed with the appliance.

Mounting

Snap onto top-hat rail in accordance with DIN EN 60715, vertical installation. The KNX bus terminal must point upwards.

No KNX/EIB data rail is required; the connection to KNX-TP is established via the enclosed bus connection terminal.

Please note the temperature range (- 5 ... + 45 °C), therefore do not install above heat-emitting devices and ensure sufficient ventilation/cooling if necessary.

Electrical connection

KNX-TP (incl. power supply)

Connect the KNX-TP bus cable to the KNX connection of the device using the enclosed KNX bus connection terminal (black/red). The bus cable must be routed close to the device terminal with the sheath intact! Bus cable cores without sheath (SELV) must be installed safely separated from all non-safety extra-low voltage cables (SELV/PELV) (maintain a distance ≥ 4 mm or use covers, see also VDE regulations on SELV (DIN VDE 0100-410 / "Safe separation", KNX installation regulations)!

The power supply is provided by the KNX bus line. The current consumption is typically 15 mA or 360 mW (24 V).

Ethernet connection

Connection of the IP network cable (RJ-45) to the network connection of the device (9). The LAN connection supports the PoE function. IP addressing is described in a later section, is carried out via ETS and should be agreed with the network administrator.

2 Gateway programming

2.1 ETS database

The ETS database for the Multiuser 3.0 KNX Gateway can be downloaded using the QR code on the packaging or via the following link:

www.support-revox.de/knx

The ETS database for the Multiuser 3.0 KNX Gateway can be downloaded using the QR code on the packaging.

After importing into the ETS, you will find the database under the following path in the product catalogue:

Weinzierl – TP Schnittstellen – Gateways - Revox Multiuser 3.0 KNX Gateway by Weinzierl

2.2 Factory settings as KNX interface

Chapters 2.2 and 2.3 are only relevant if the Multiuser Gateway is used as a KNX interface.

The following configuration is preset at the factory:

Physical address of the device:	15.15.255
Configured KNXnet/IP tunnelling connection:	1
Physical addr. of the tunnelling connection:	15.15.250
IP address assignment:	DHCP

Resetting to factory settings

It is possible to reset the device to these factory settings. - Disconnect the KNX bus connection ❶ from the device - Press and hold the KNX programming button ❸ - Re-establish the KNX bus connection ❶ to the device - Press and hold the programming button ❸ for at least another 6 seconds - All LEDs (❷❹❺❻) flash briefly to indicate that the factory settings have been reset successfully.

2.3 Multiuser 3.0 KNX Gateway as bus interface

In the ETS, interfaces can be selected and configured via the ETS menu "Bus interfaces".

The ETS can also access configured KNX IP BAOS without a database entry. If the KNX IP BAOS configuration does not correspond to the conditions of the KNX installation, it must be configured via the ETS project. See the ETS database section.

In the as-delivered state, the IP address is assigned automatically via DHCP, i.e. no further settings are required. To be able to use this function, there must be a DHCP server in the LAN (e.g. many DSL routers have an integrated DHCP server).

After the KNX Gateway has been connected to the LAN and the KNX bus, it should automatically appear in the ETS menu item "Bus" under "Found interfaces".

Click on the interface found to select it as the current interface. Connection-specific information and options then appear on the right-hand side of the ETS window.

The displayed device name and the "Host physical address" (physical address of the device) can then be changed within the ETS project.

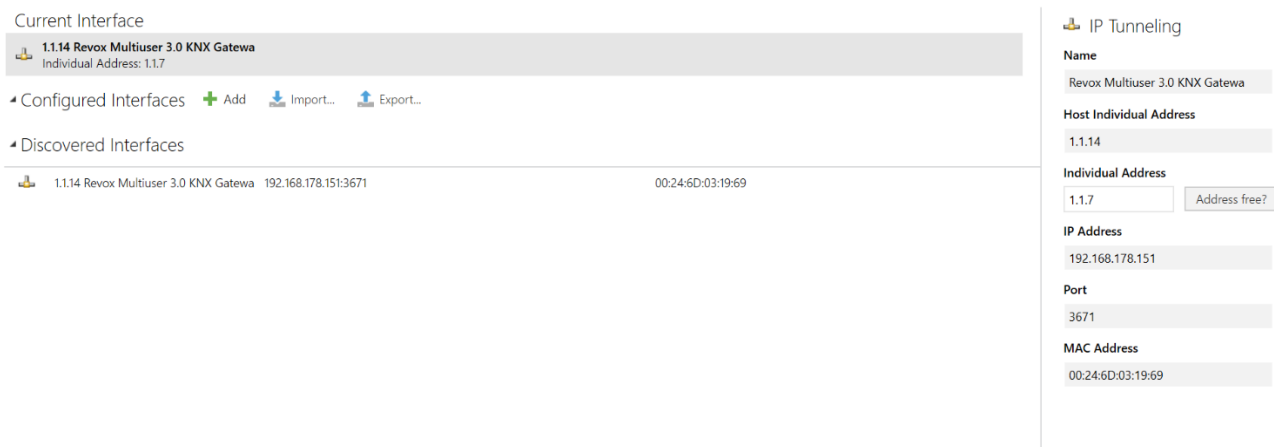
Like all programmable KNX devices, the Multiuser 3.0 KNX Gateway has a physical address that can be used to address the device. This is used, for example, by the ETS when downloading the Multiuser 3.0 KNX Gateway via the bus.

For the interface function, the device uses additional physical addresses that can be set in the ETS (from ETS4.2). If a client (e.g. ETS) sends telegrams to the bus via the Multiuser 3.0 KNX Gateway, these contain one of the additional addresses as the sender address. Each address is assigned to a connection. This means that response telegrams can be clearly forwarded to the respective client.

The additional physical addresses must be from the address range of the bus line in which the Multiuser 3.0 KNX Gateway is located and must not be used by another device.

Example:

- Device address 1.1.1 (device address in the topology)
- Connection 1 1.1.250 (1st additional address)
- Connection 2 1.1.251 (2nd additional address)
- Connection 3 1.1.252 (3rd additional address)
- Connection 4 1.1.253 (4th additional address)
- Connection 5 1.1.254 (5th additional address)

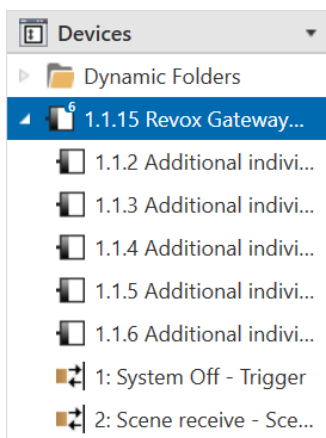


The physical KNX address of the KNXnet/IP tunnelling connection currently in use can be changed in the "Physical address" section. To check whether the desired physical address does not already exist in your KNX installation, you can click on the "Address free?" button.

The physical KNX device address and the physical KNX addresses for the additional tunnelling connections can be changed within the ETS project after the device has been added to the project.

2.4 Physical address

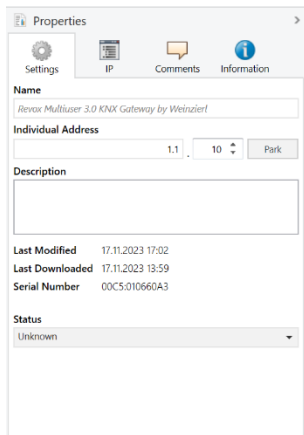
In ETS 5/6, the addresses appear in the topology view.



To change the individual addresses, select the corresponding entry in the list and enter the desired address in the text field. If the frame of the text field changes colour to red after entry, this indicates that the address entered is already in use.

Info: Make sure that none of the addresses specified above are already used in your KNX installation.

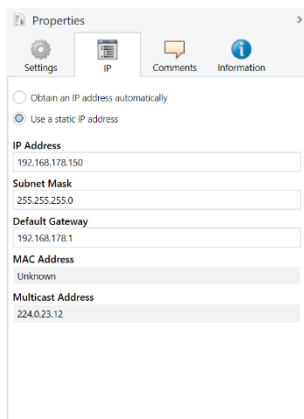
By selecting the Multiuser 3.0 KNX Gateway (774) in the tree structure of the topology view of the ETS project, the "Properties" overview appears on the right-hand side of the ETS window. Under Properties menu item "Settings", the physical address and the device name of the Multiuser 3.0 KNX Gateway can be changed.



2.5 IP address

The IP-specific options of the Multiuser 3.0 KNX Gateway can be changed under Properties menu item "IP". By switching from "Obtain IP address automatically" (via DHCP) to "Use the following IP address" (static IP address), the IP address, subnet mask and default Gateway can be freely selected.

Info: The changes made in the properties menus only take effect after an application download.



IP address

The IP address of the Multiuser 3.0 KNX Gateway must be entered here. This is used to address the device via the IP network (LAN). The IP addressing should be agreed with the network administrator.

Subnet mask

The subnet mask must be entered here. This mask is used by the device to determine whether a communication partner is in the local network. If a partner is not in the local network, the device does not send the telegrams directly to the partner, but to the Gateway, which takes over the forwarding.

Default Gateway

The IP address of the Gateway must be entered here, e.g. the DSL router of the installation.

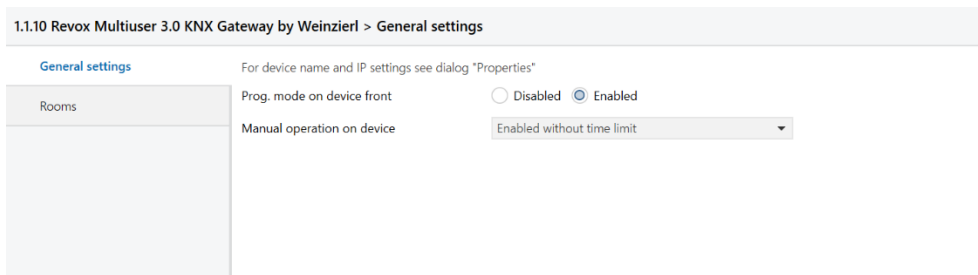
2.6 Programming

Programming mode on the front of the device

In addition to the normal programming button ③, the device allows the programming mode to be activated on the front of the device without opening the control panel cover. Programming mode can be activated and deactivated by pressing buttons ⑦ and ⑧ simultaneously.

This function can be switched on and off via the parameter "Prog. Mode on front panel" parameter to switch it on and off. The recessed programming button ③ (next to the programming LED ②) is always activated and is not affected by this parameter.

When programming mode is activated, the mode LED lights up red.



The Multiuser 3.0 KNX Gateway can be programmed by the ETS in various ways:

Via the KNX bus

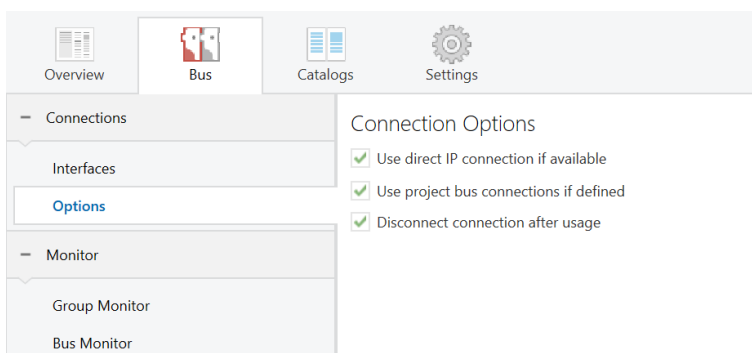
To do this, the device only needs to be connected to the bus. The ETS requires an additional interface (e.g. USB) to the bus. Both the physical address and the entire application, including IP configuration, can be programmed in this way. Programming via the bus is recommended if no IP connection can be established.

Via KNXnet/IP tunnelling

No additional interface is required here. Programming via KNXnet/IP tunnelling is possible if the device already has a valid IP configuration (e.g. via DHCP). In this case, the device is displayed in the interfaces in the ETS and must be selected. The download is carried out from the ETS project in the same way as for other devices.

Via direct IP connection

While KNXnet/IP tunnelling is limited to the speed of KNX TP, the device can be loaded at high speed via a direct IP connection. The direct IP connection is possible if the device already has both a valid IP configuration and a physical address. To do this, the selection "Use direct IP connection if possible" must be selected in the ETS menu under "Bus - Connections - Options". The download then takes place directly in the device and is not visible in the ETS group monitor.



Info: Due to the significantly shorter transmission times, it is recommended that downloads are carried out via IP.

3 Communication objects

To make linking the communication objects as easy as possible, there is a preconfigured database with predefined functions for the Revox Multiuser 3.0 KNX Gateway.

3.1 System K objects

These K objects contain a global, cross-room system OFF command, the evaluation of KNX scenes 1-64 and 8 KNX actions.

Data type	Remark	ETS parameter	Description
Binary - 1 Bit	1=select function, 0=no action	Standard configuration	System Off
Binary - 1 Byte	1...64	Standard configuration	Receive Scene
Binary - 1 Byte	1...64	Standard configuration	Send Scene
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 1
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 2
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 3
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 4
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 5
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 6
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 7
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 8

System OFF

This command switches off all rooms in the Multiuser system, including those that are not controlled/activated via the Revox KNX Gateway.

Receive KNX scenes 1-64

The Gateway allows participation in up to 8 KNX scenes. The scene number is freely definable (1-64). This allows the Multiuser 3.0 system to be integrated into KNX scenes. What is triggered can be programmed in the Revox Multiuser Configurator using text commands. More on this in the Configurator chapter.

Sending KNX scenes 1-64

The Multiuser system can trigger KNX scenes (0-64). The corresponding text command in the Configurator is: \$k.knx:scene:x
x= 1.....64

KNX actions

8 programmable "KNX actions" are available per Gateway. These can be used to trigger a 1-bit command to each KNX group address. (e.g. light on/off, lift up/down, etc.) The Configurator command is:

\$k.knx:switch:x:y (x=1.....8, y=on/off/toggle)

3.2 Room K objects

The room-related K objects are summarised in groups of 50 K objects each, each of which relates to one of the 15 rooms.

The communication objects (K-O.) with a grey background are only available in the ETS room setting "Advanced", but not in the "Standard" setting.

	Data type	Remark	Description
1	Binary - 1 Bit	1=On, 0=Off	Room On/Off
2	Binary - 1 Bit	1=On, 0=Off	Room Status
3	14 Byte		User/Source/Track Info
4	14 Byte		User/Source/Track Info
5	Binary - 1 Bit	1=On, 0=Off	Select User 1 Fav/Room Off
6	1 Byte	1...99	Select User 1 Fav 1 - 99
7	Binary - 1 Bit	1=On, 0=Off	Select User 1 Status
8	Binary - 1 Bit	1=On, 0=Off	Select User 2 Fav/Room Off
9	1 Byte	1...99	Select User 2 Fav 1 - 99
10	Binary - 1 Bit	1=On, 0=Off	Select User 2 Status
11	Binary - 1 Bit	1=On, 0=Off	Select User 3 Fav/Room Off
12	1 Byte	1...99	Select User 3 Fav 1 - 99
13	Binary - 1 Bit	1=On, 0=Off	Select User 3 Status
14	Binary - 1 Bit	1=On, 0=Off	Select User 4 Fav/Room Off
15	1 Byte	1...99	Select User 4 Fav 1 - 99
16	Binary - 1 Bit	1=On, 0=Off	Select User 4 Status
17	Binary - 1 Bit	1=On, 0=Off	Select User 5 Fav/Room Off
18	1 Byte	1...99	Select User 5 Fav 1 - 99
19	Binary - 1 Bit	1=On, 0=Off	Select User 5 Status
20	Binary - 1 Bit	1=On, 0=Off	Select User 6 Fav/Room Off
21	1 Byte	1...99	Select User 6 Fav 1 - 99
22	Binary - 1 Bit	1=On, 0=Off	Select User 6 Status
23	Binary - 1 Bit	1=On, 0=Off	Select User 7 Fav/Room Off
24	1 Byte	1...99	Select User 7 Fav 1 - 99
25	Binary - 1 Bit	1=On, 0=Off	Select User 7 Status
26	Binary - 1 Bit	1=On, 0=Off	Select User 8 Fav/Room Off
27	1 Byte	1...99	Select User 8 Fav 1 - 99
28	Binary - 1 Bit	1=On, 0=Off	Select User 8 Status
29	Binary - 1 Bit	1=On, 0=Off	Select User 1 /Room Off
30	Binary - 1 Bit	1=On, 0=Off	Select User 1 Status
31	Binary - 1 Bit	1=On, 0=Off	Select User 2 /Room Off
32	Binary - 1 Bit	1=On, 0=Off	Select User 2 Status
33	Binary - 1 Bit	1=On, 0=Off	Select User 3 /Room Off
34	Binary - 1 Bit	1=On, 0=Off	Select User 3 Status
35	Binary - 1 Bit	1=On, 0=Off	Select User 4 /Room Off
36	Binary - 1 Bit	1=On, 0=Off	Select User 4 Status
37	Binary - 1 Bit	1=On, 0=Off	Select User 5 /Room Off
38	Binary - 1 Bit	1=On, 0=Off	Select User 5 Status
39	Binary - 1 Bit	1=On, 0=Off	Select User 6 /Room Off
40	Binary - 1 Bit	1=On, 0=Off	Select User 6 Status

41	Binary - 1 Bit	1=On, 0=Off	Select User 7 /Room Off
42	Binary - 1 Bit	1=On, 0=Off	Select User 7 Status
43	Binary - 1 Bit	1=On, 0=Off	Select User 8 /Room Off
44	Binary - 1 Bit	1=On, 0=Off	Select User 8 Status
45	Binary - 1 Bit	1=Next, 0=Previous	Next/Previous
46	Binary - 1 Bit	1=Next, 0=Previous	Fav Next/Previous
47	Binary - 1 Bit	1=On, 0=Off	Mute On/Off
48	Binary - 1 Bit	1=On, 0=Off	Status Mute
49	Dimm- 4 Bits	dim function	Volume relative
50	Wert - 1 Byte	0...255	Volume value
51	1 Byte	0...255	Volume Status Value
52	Binary - 1 Bit	1/0 = sel func	Custom Action 1
53	Binary - 1 Bit	1/0 = sel func	Custom Action 2
54	Binary - 1 Bit	1/0 = sel func	Custom Action 3
55	Binary - 1 Bit	1/0 = sel func	Custom Action 4
56	Binary - 1 Bit	1/0 = sel func	Custom Action 5
57	Binary - 1 Bit	1/0 = sel func	Custom Action 6
58	Binary - 1 Bit	1/0 = sel func	Custom Action 7
59	Binary - 1 Bit	1/0 = sel func	Custom Action 8
60	Binary - 1 Bit	1=On, 0=Off	Timer Event 1 On/Off
61	Binary - 1 Bit	1=On, 0=Off	Timer Event 1 Status
62	Binary - 1 Bit	1=On, 0=Off	Timer Event 2 On/Off
63	Binary - 1 Bit	1=On, 0=Off	Timer Event 2 Status
64	Binary - 1 Bit	1=On, 0=Off	Sleep Timer On/Off
65	Binary - 1 Bit	1=On, 0=Off	Sleep Timer Status

* 8 user-defined actions (each ON/OFF and therefore 16 commands in total) are available per room, which are defined in the Configurator / Room List.

Room ON/OFF

The 1-bit command switches the room on with the last logged-in user and plays the last music content listened to. The 0 Bit command switches the room off.

User X Fav/On/Off

This K object can be used to switch a room on directly with a user profile. The user profile then selects the last user favorite from its list.

User X Fav 1 - 99

This K object can be used to switch on a room directly with a user profile. The user profile then specifically selects the numerical entry from its list of user favorites.

User X /On/Off

The 1-bit command switches the room on with user X. The user profile then plays the currently selected music content, regardless of whether this music source is saved in the user favorites list or not.

The 0 Bit command switches the room off.

Difference between "Back/Forward" and "Fav Back/Forward"

With the conventional backwards/forwards command, you can jump through a music list (e.g. playlists/albums) or from user favourite to user favourite entry, provided this has no list content (e.g. radio stations or local inputs).

With the Favourites backwards/forwards command, you can jump from user favourite to user favourite, regardless of whether this entry has list content or not.

User-defined action 1-8

The Multiuser 3.0 system has many other functions and control options. As the numerous functions cannot all be mapped in the standard K-objects list, there are user-defined actions. These can be defined and controlled in the Revox Multiuser Configurator using the Multiuser text protocol.

Example of zone control:

Room amplifiers can be grouped into zones in the Multiuser system. Control commands for zones cannot be found in the K-object list. To nevertheless control zones via the Multiuser 3.0 KNX Gateway, the user-defined actions can be used for this. To do this, enter the following text command in the Revox Multiuser Configurator, e.g. in room 1 in Custom Action 1: @zone.1:room:select:@user.1 This command switches on all rooms in zone 1 with user profile 1.

Status feedback

The Multiuser system provides all relevant status feedback via the Gateway. This also includes a text object for each room with song and artist information on the current playback source.

Important note:

Depending on the size of the Multiuser system and the number of activated status objects, the feedback messages lead to a very high load on the KNX bus. This can lead to an overload of the KNX system and thus to packet loss!

4 Multiuser configurator

Revox offers a web-based user interface for configuring the Multiuser system. The Configurator, which can be called up with all common browsers such as Internet Explorer, Firefox, Chrome etc., communicates with the Multiuser server. All configuration data for the entire system is also stored there. This includes all services.

The Configurator is described in detail in a separate operating manual. This part of the Configurator description only contains the areas relevant to the KNX Gateway.

4.1 Overview KNX area

The KNX configuration is visible in the Configurator as a separate tab. In the KNX area, the two possible Gateway areas are displayed with the KNX identifier **K**, even if no KNX Gateway is present/connected. This means that a Multiuser system can be set up in advance for the KNX Gateway. It is also possible to use Gateway setups from or for other Multiuser projects via the import/export function. The MAC address of the multiuser identifier comes from the Multiuser server that provides the KNX service. If there are several Multiuser servers in the system, a multiple of the 2 KNX services is always visible.

Multiuser identifier **K 00 11 32 4C E4 C3 0**

- Prefix**
- U = User
 - R = Room
 - S = Source
 - X = Timer
 - P = Proxy
 - T = Trigger
 - K = KNX-Gateway

MAC Adresse 00 11 32 4C E4 C3

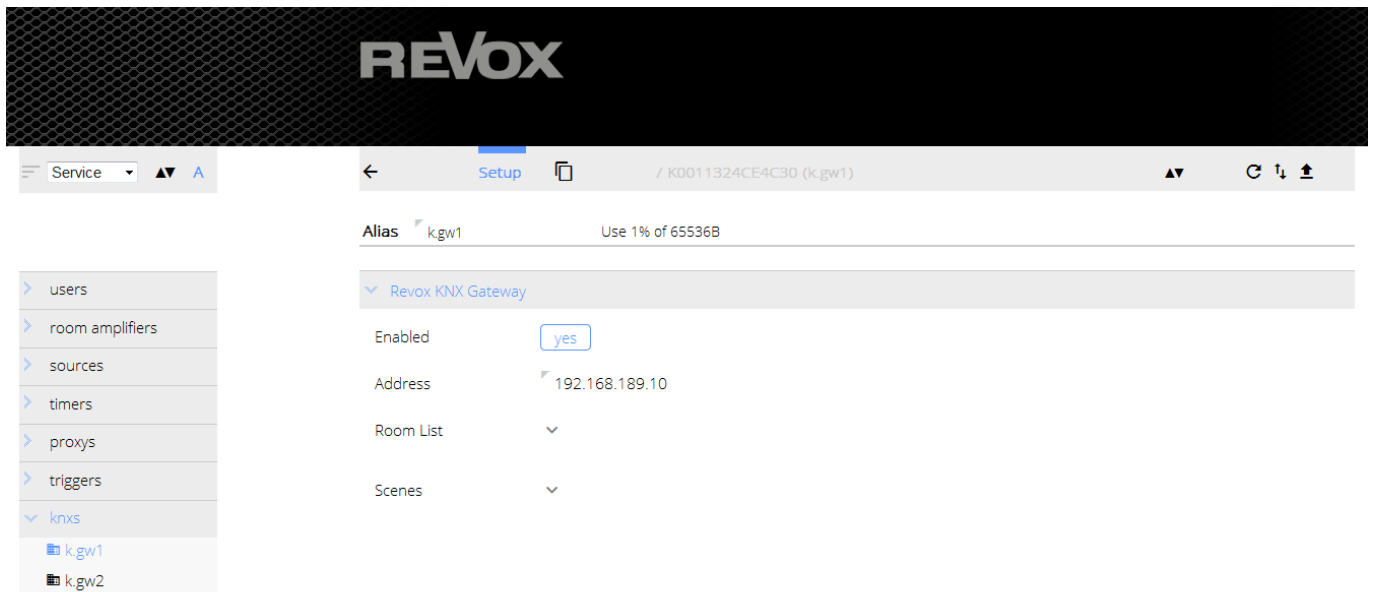
- Indexnummer (hex)**
- 0 = erster KNX service
 - 1 = zweiter KNX service

4.2 Alias / Gateway IP /Enable

In the KNX service, the KNX Gateway is registered in the Configurator. For this purpose, an **alias** is first assigned to facilitate assignment/identification. If the Gateway function is not yet active [**Enable: NO**], this can be done now.

Address: IP address of the Revox KNX Gateway. This is set up using the ETS.

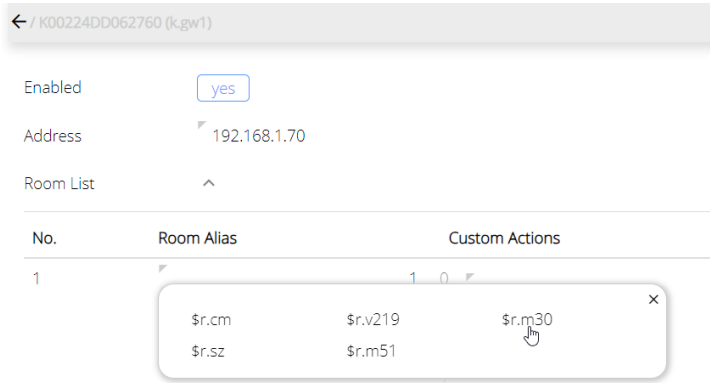
Multiuser configurator



4.3 Roomlist

In the Room List, the installer defines all Revox rooms that are to participate in the KNX control. This room list must be **identical to the room list in the ETS** as far as the **room numbers** are concerned, otherwise the wrong rooms will be controlled.

To do this, click in the Room Alias field and then select the desired room from the selection. The rooms appear, if already configured with Room Alias, with the corresponding name or the Room Identifier if no own alias names have not yet been assigned.

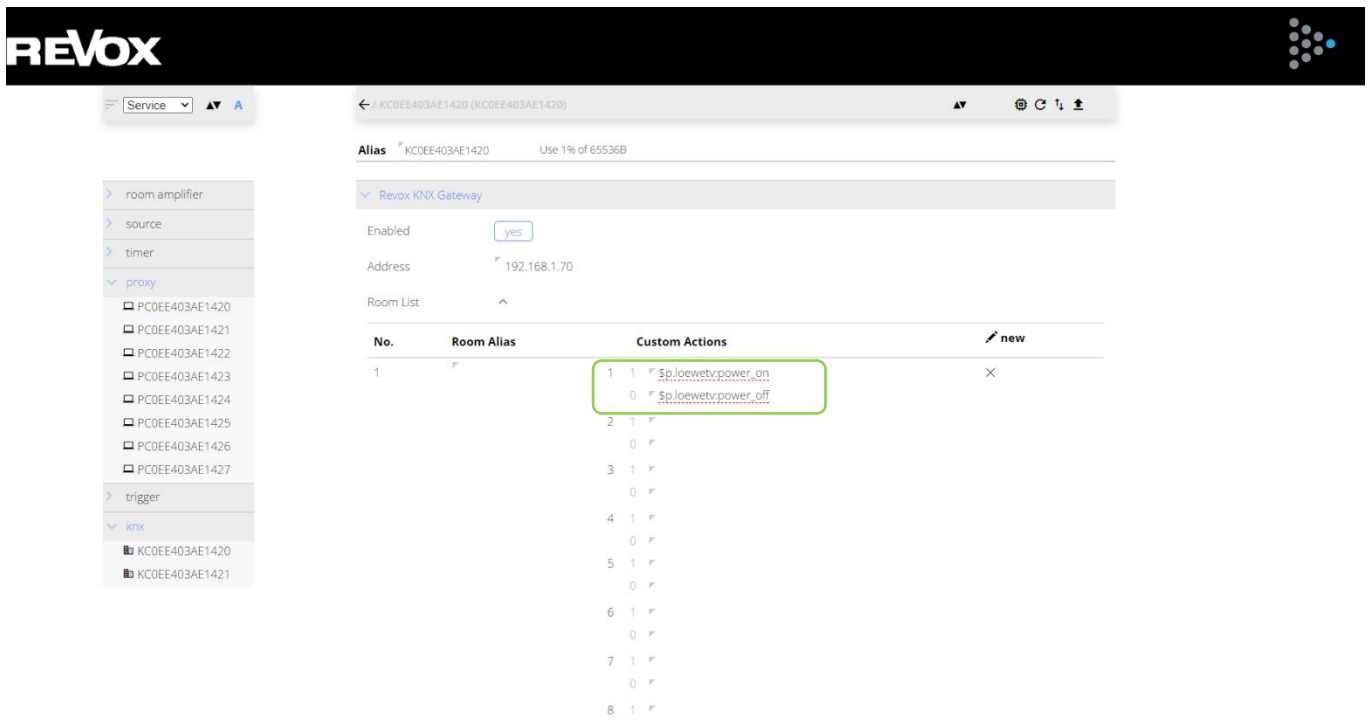


Additional rooms can also new be added. A maximum of 15 rooms can be controlled per Gateway.

4.4 Custom actions

There are 8 custom actions with a 1/0 function available in each room. The custom actions can be used for functions for which no K object is available, e.g. for zone calls or Multuser proxy commands. For example, the Custom Action 1-1 communication object in the example below (green box) triggers the proxy command \$p.loewetv:power_on. The custom actions are programmed using the **Multuser Text** programming language, which is described briefly later in this manual and in detail in a separate manual.

Multuser configurator



Associated ETS K objects

52	Binary – 1 Bit	1/0 = sel func	Custom Action 1
53	Binary – 1 Bit	1/0 = sel func	Custom Action 2
54	Binary – 1 Bit	1/0 = sel func	Custom Action 3
55	Binary – 1 Bit	1/0 = sel func	Custom Action 4
56	Binary – 1 Bit	1/0 = sel func	Custom Action 5
57	Binary – 1 Bit	1/0 = sel func	Custom Action 6
58	Binary – 1 Bit	1/0 = sel func	Custom Action 7
59	Binary – 1 Bit	1/0 = sel func	Custom Action 8

4.5 Scene list

There are 64 scene commands in the KNX system, which are transferred to the Multiuser system via the Multiuser 3.0 KNX Gateway. Multiuser text commands can now be stored here for a **maximum** of 8 KNX scenes, which are triggered when a KNX scene command is received. The **Scene No.** is identical to the scene number of the KNX system.

In the example below, the living room with user profile 2 switches on when scene 1 is started.

Multiuser configurator

← / K00224DD062760 (k.gw1)

Alias Use 1% of 65536B

▼ Revox KNX Gateway

Enabled

Address

Room List

Scenes

Scene No.	Action
1	<input type="text" value="\$r.living:room:select:@user.2"/>

* Maximal number of list items is 8. Current number is 1.

Associated ETS K objects

Data type	Remark	ETS parameter	Description
Binary - 1 Bit	1...64	Standard configuration	Scene received

4.6 The Multiuser system triggers KNX scenes

KNX scenes (1-64) can be triggered with the Multiuser system.

The following text command is sent for this purpose: `$k.knx:scene:x x= 1.....64`

This Multiuser text command can be used wherever there are configurable trigger or timer settings in the Configurator. in the Configurator. For example on a source, room or RC5 trigger...

Associated ETS K objects

Data type	Remark	ETS parameter	Description
Binary - 1 Bit	1...64	Standard configuration	Scene send

4.7 The Multiuser system triggers KNX commands

There are 8 programmable "KNX actions" available per Gateway, which switch a lighting group, for example, through a corresponding link with a KNX actuator in the ETS. This triggers a 1-bit command at each KNX group address. (e.g. light on/off, blinds up/down, etc.).

The following text command is sent for this: `$k.knx:switch:x:y x=1....8, y=on/off/toggle`

This Multiuser text command can be used wherever configurable trigger or timer settings are available in the Configurator. are available in the Configurator. For example, on a source, room or RC5 trigger...

Associated ETS K objects

Data type	Remark	ETS parameter	Description
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 1
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 2
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 3
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 4
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 5
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 6
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 7
Binary - 1 Bit	Action from Revox	Standard configuration	KNX Action 8

4.8 Multiuser text protocol

The Multiuser text protocol is an easy-to-read and easy-to-learn interface with which the basic functions of the Multiuser system can be controlled simply and effectively. Individual commands or command chains are entered and defined in text form in the Configurator.

The text protocol is described in detail in a separate operating manual. You can find these instructions on our support page at www.support-revox.de

5 Technical data

Elektrical safety

- Protection class (according to EN 60529): IP 20
- Safety extra-low voltage SELV DC 29 V

CE marking according to

- EMV Guideline 2014 / 30 / EU
- RoHS Guideline 2011 / 65 / EU
- EN 63044-3: 2018
- EN 50491-5-1: 2010
EN 50491-5-2: 2010, EN 50491-5-3: 2010
- EN 61000-6-2: 2019
EN 61000-6-3: 2007 + A1: 2011
- EN 63000: 2018

*CE declaration can be requested at info@weinzierl.de.

Mechanical data

- Housing: plastic
- Modular installation, installation width 1 TE (18 mm)
- Weight: approx. 40 g

Environmental conditions

- Ambient temperature during operation: - 5 ... + 45 °C
- Storage temperature: - 25 ... + 70 °C
- Rel. humidity (non-condensing): 5 % ... 93 %
- Operating and display elements
- 2 buttons and 3 LEDs (multicolored)
- KNX programming button with LED (red)

Ethernet

- 10BaseT (10Mbit/s)
- Internet protocols ARP, ICMP, IGMP, UDP/IP, TCP/IP, DHCP and Auto IP
- Up to 5 simultaneous connections via KNXnet/IP tunneling
- KNX BAOS Binary Protocol V2.0
- KNX BAOS Web Services (JSON)

KNX

- Medium TP
- Interface Protocol: cEMI
- Max. APDU length: 55
- Object Server: BAOS V2
- Device model: System B

Power supply

- KNX bus 24 V
- Power consumption: < 360 mW
- Connections
- KNX connection terminal
- LAN connection socket RJ-45

Manufacturer:

Weinzierl Engineering GmbH
D-84508 Burgkirchen / Alz
Deutschland
www.weinzierl.de
info@weinzierl.de



WARNING

- The device may only be installed and put into operation by an authorized electrician.
- The applicable safety and accident prevention regulations must be observed..
- The device must not be opened.
- The relevant guidelines, regulations and provisions of the respective country must be observed when planning and installing electrical systems.

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Subject to technical changes



REVOX
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