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Product Manual

ise smart connect KNX Sonos

Order No. 1-0001-002
Valid for application software version 2.1 and firmware version 2.3

Table of contents

1 Product description

1.1 Functions

- Operation of Sonos[1] audio devices via KNX.
- Control with the usual KNX operating devices, regardless of the SonosApp.
- Control up to 30 Sonos devices via KNX.
- Dynamic group creation via KNX objects for maximum multi-room audio fun in up to five groups.
- Using the "party mode" function, a Sonos device (master) can specify the sound for all the devices in the house.
- Supports five master-slave groups, each with one master and up to five slave devices per group.
- Volume control for masters, slaves and the entire group.
- Controller for playing playlists from the first or any desired track.
- Selection of Sonos CONNECT analogue input or the Sonos PLAYBAR TV input.
- Play music from the microSD card in the device.
- Interruption of current playlist for short announcements, doorbell or similar
- Volume pre-selection and unmuting at source selection
- Current title, artist and album on the KNX text objects.
- Changes made using the SonosApp or PC are reported on the KNX TP bus (playlist selection, volume, mute/unmute etc.).
- An integrated data network switch (two RJ45 connections) simplifies the connection of multiple IP devices. This enables multiple ise smart connect KNX Sonos or other IP devices in the distribution to be connected without the aid of other active components.
- Supports accelerated transmission from the ETS to the ise smart connect KNX Sonos via a direct IP connection.
- Configuration of the ise smart connect KNX Sonos is carried out using the latest version of the ETS 4 or ETS 5. The application accesses ETS functions not supported by earlier ETS versions. This is why previous versions of ETS cannot be used for configuration.

[1] Sonos is a registered trademark of Sonos, Inc. in the USA, Canada, Great Britain, Belgium, Luxembourg, the Netherlands, Japan, Mexico, Germany, Russia and Australia and is a trademark of Sonos, Inc. in other countries.

1.2 Sonos goes KNX

Crystal-clear hi-fi sound and virtually unlimited sound scenarios: The Sonos sound system gives digital music a diversified landscape made up of different wireless loudspeakers and audio systems. This acoustic marvel has just one catch: Up until now, it required laborious operation using a special app, especially when used with Sonos zones.

The ise smart connect KNX Sonos opens up the world of KNX to the family of sound, making it even easier to handle. Sonos can finally be operated with KNX operating devices, either in party mode or by room. Up to five Sonos master devices with dynamic group creation can be connected via IP. Each of these master devices, in turn, can be networked with up to five slave devices. Here, either a separate music program is assigned to each master device or a master device operates the entire device landscape.

Connecting KNX and Sonos opens up new possibilities:

- Door contacts enable dynamic group creation.
- If you select the "Kaminmusik" playlist, the shutters will be lowered and the lighting adjusted accordingly.

These and other application examples can be found in more detail in Chapters 2 Application example Comfort solutions in the living environment and 3 Commercial application scenarios.

1.3 Definitions and explanation of terms

- **Sonos device**
  Each Sonos wireless loudspeaker is hereinafter referred to as a Sonos device.
  The following Sonos devices are currently supported:
  - Sonos PLAY:1
  - Sonos PLAY:3
  - Sonos PLAY:5
  - Sonos PLAYBAR
  - Sonos CONNECT
  - Sonos CONNECT:AMP
  - Sonos SUB and Sonos BRIDGE (These devices are never addressed directly via the ise smart connect KNX Sonos, but instead directly via the Sonos application linked with other Sonos devices.)

- **Room/zone**
  A room (zone) is the area in which you listen to music with your Sonos devices. Multiple Sonos devices can also stream the music for a room/zone here. Different music cannot be listened to within a single room/zone.
  Please note that the terms room and zone are used synonymously by Sonos. They are exchangeable.

- **Group**
  Rooms can be combined dynamically into a group. Here, the music is played in sync in all the rooms of the group. If the groups are terminated, different music from different sources can be played again. When groups are created with KNX, precisely one master must be defined for each group. This must be taken into account when creating master-slave groups.
  If several rooms are part of a group, they behave as one room with regard to control. Thus "group" in the following always refers to multiple Sonos devices being controlled by a master.
  Please note that the common term *group addresses* in KNX has nothing to do with a group of Sonos devices.

- **Master-slave group (MSG)**

A logical grouping of up to six Sonos devices on the ise smart connect KNX Sonos. Precisely one master and up to five slaves are defined for each master-slave group. An ise smart connect KNX Sonos enables the management of up to five master-slave groups.

- **Master**
  For complete control of a Sonos device with KNX, it must be defined as the master in an ise smart connect KNX Sonos. You can define any desired Sonos device also seen in the original Sonos application as the master. A master allows you to control music playback by sending commands such as *Play*, *Pause*, *Stop* and *Next Track*. You can also select the source of the music playback, e.g. a playlist. You can also set the volume (absolutely or incrementally).
  A master specifies the music for the slaves of its master-slave group. The requirement for this is that the slaves are activated for the respective master-slave group. An example showing the activation and deactivation of slaves in a master-slave group can be found in Section 4.2 – Dynamic group creation (general).
  The volume of a group can be controlled separately from the volume of the master.
  Note: It is possible to define the same Sonos devices as the master in multiple groups and thus to control more than five Sonos devices with one master. It is thus possible to place up to 26 devices with an ise smart connect KNX Sonos into a group and have the same music played.

- **Slave**
  Slaves are Sonos devices which are assigned to a master in the ise smart connect KNX Sonos. Up to five slaves can be assigned to a master in a master-slave group. With slaves, the control options are limited (volume). The music is selected by the master. It is possible to define the master of one master-slave group as a slave in another master-slave group.

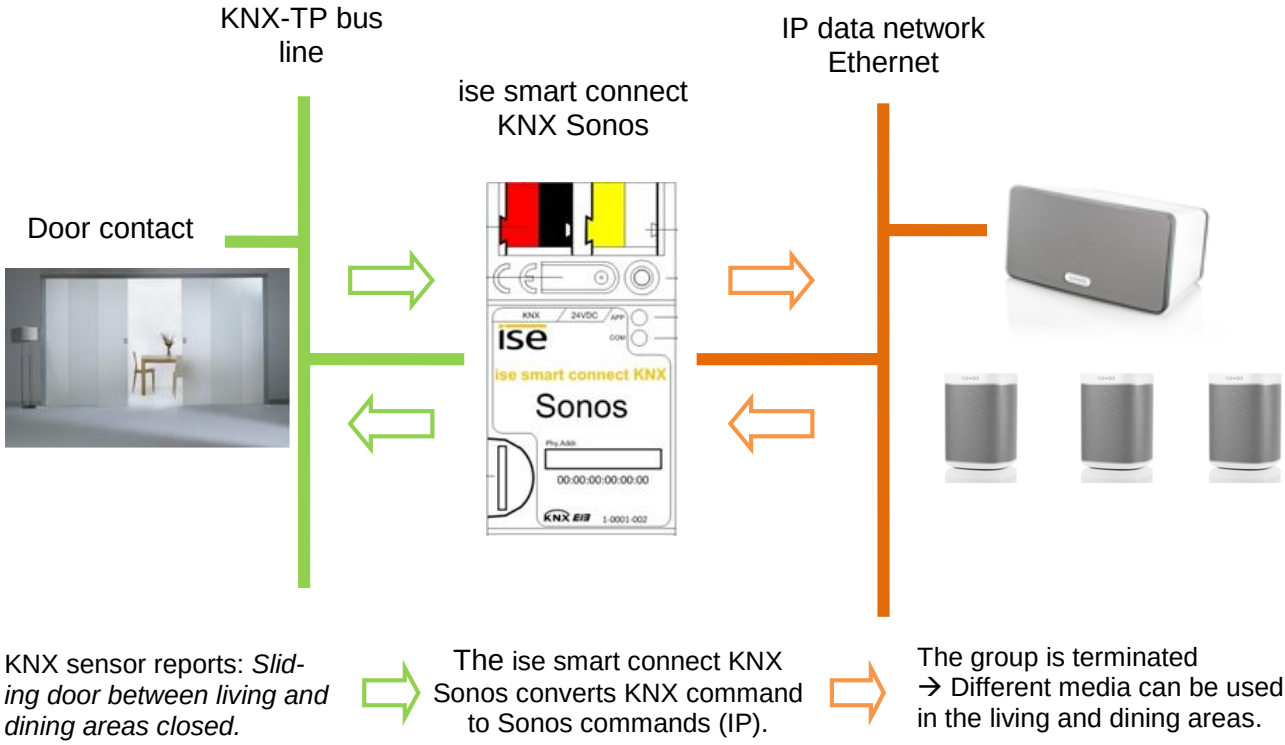
- **Group volume**
  The group volume affects all devices currently in the group in relation to their individual volume states.

2 Application example Comfort solutions in the living environment

2.1 Door contact enables dynamic group creation

In this application, a door contact enables Sonos group creation via KNX.
If the door is opened, the rooms become an acoustic unit: The ise smart connect KNX Sonos creates a group in which a Sonos device in the living area functions as the master for Sonos devices in the dining room and thus determines music playback.

If the door is closed, the ise smart connect KNX Sonos terminates the group. Both rooms once again have their original master and can be operated independently.



Is the door open?	The Sonos music in the dining room is the same as the living room (group creation).
Is the door closed?	Different media can be enjoyed (again) in each room.
	Note: The Sonos devices in the dining room are initially muted after termination. Playback which may have been interrupted by group creation is not continued. This can be implemented using optional Logic Modules, however.

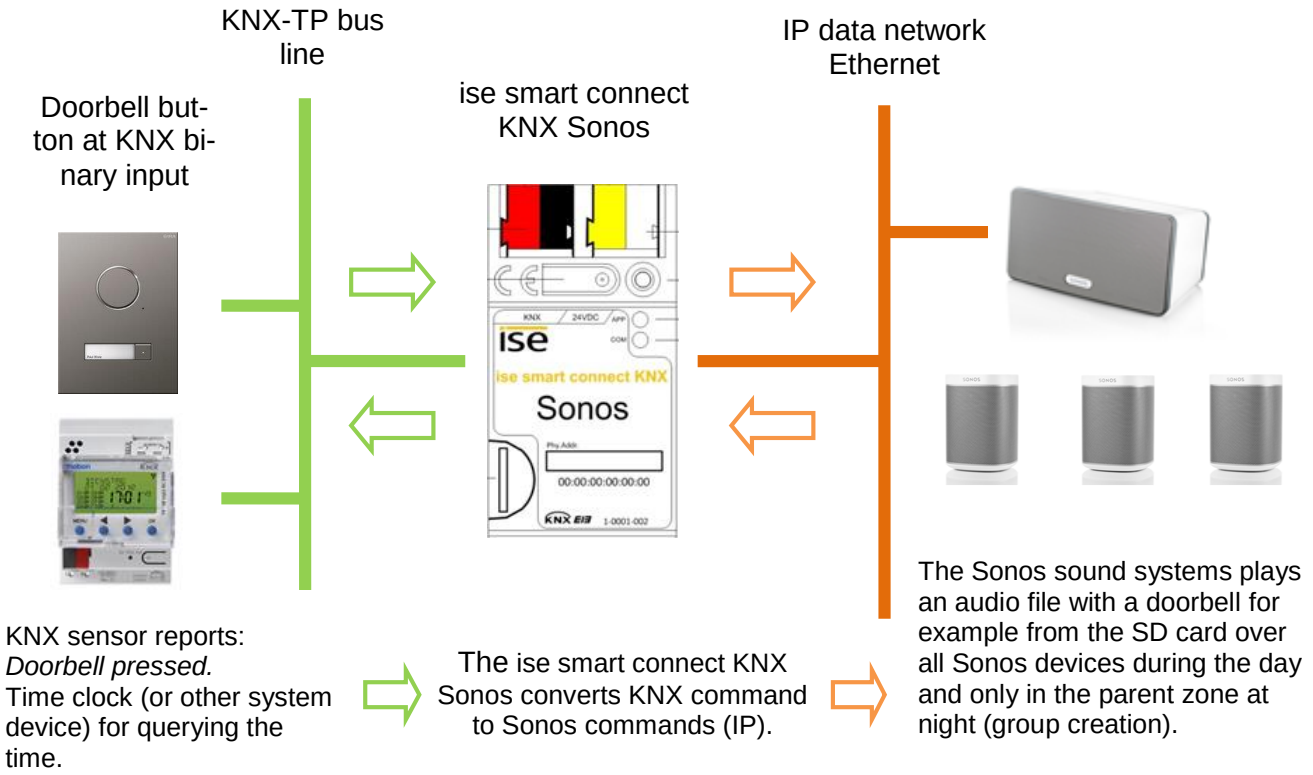
2.2 Sonos as a smart door gong

This application makes the Sonos sound system a smart door gong.

Two versions are possible:

- The volume in one or more (all) groups is reduced, and the standard door gong can then be heard in the house.
- Music playback in one or more (all) groups is stopped, and a door signal is heard in these groups.
    - The signal must be a Sonos playlist that has been configured as an announcement in one of the source selection slots. The sound file can be on the microSD card in your ise smart connect KNX Sonos or one a different share. Create the Sonos playlist using an official Sonos client application.
    - This loading occurs during the day in the entire house. With sleeping children in mind, the signal is only heard in the parent zone at night.
    - Even if you're listening to loud music, you'll always know there's a guest at the door because all music playback is paused for the door gong and resumed afterwards.

Please see chapter 7.7.3 Deleting and creating a separate list on how to configure an announcement like the door gong.



2.2.1 ise smart connect KNX Sonos makes operation more convenient

Controlling music with a light switch

By combining Sonos and ise smart connect KNX Sonos, you can control your music system comfortably as you pass by. It's quick, and there no need to look for a remote control. Never be annoyed again because of a flat battery in your smartphone or tablet PC.

- Playlist selection and volume control are given a fixed position in the KNX light switch.
- You can even operate Sonos without glasses, after taking a shower, for example.
- KNX switches with a display can also show you the track and artist if desired.

Naturally, that's not all you can do with the light switch. At the same time, operation can be carried out from all KNX-compatible visualisation panels.

Operating convenience

The music goes where you go

By combining Sonos and ise smart connect KNX Sonos, you can have music accompany you as you go through the house thanks to the use of motion/presence detectors.

After getting up in the morning, the music will follow you to the bathroom and into the living room, where you can begin your day with a cup of coffee.
Requirement: The Sonos hi-fi loudspeakers of the respective rooms are combined into a zone. The Sonos hi-fi loudspeakers are muted in rooms which you have left.

Party at the push of button

With dynamic group creation, the ise smart connect KNX Sonos can switch to party mode through a signal from the building bus. Pressing the "Party" button links all the Sonos devices together, and the house becomes a continuous party zone with the same music playing in all the rooms. The volume can still be regulated individually in each room here.

Wake up your loved ones with the music of your choice at an increasing volume
Put children to sleep with an audio book at decreasing volume

Sleeping comfort

The *Wake up* scene preselects your favourite music and gently increases the volume.
The *Go to sleep* scene does the opposite: Select an audio book and lower the volume by and by.

Scenes like this are called up at the push of the light switch, using the house visualisation, wirelessly from a smartphone or automatically through a time program.
If you wish, you can even link scenes to the sunrise and sunset!

Peace in the household

Ring the "dinner bell" with Sonos

Who hasn't been in this situation? Loud music is blaring from a child's room. The only way to get the children to the table is by shouting louder and louder through the whole house.

Not so with the ise smart connect KNX Sonos. Activating the "dinner bell" button function in the kitchen lowers the media volume in the entire house and brings everyone's attention to family mealtime in a peaceful and stress-free way using an unobtrusive audible signal or recorded announcement heard in every room. Please see chapter 7.7.3 Deleting and creating a separate list on how to configure an announcement like the dinner bell.

2.2.2 The ise smart connect KNX Sonos controls home technology

The Sonos app controls home technology

The opposite also holds true: Controlling home technology using the SonosApp

Do you operate your Sonos system using the smartphone app? How would you like it if, when you call up the "Kaminmusik" playlist, the shutters are lowered, wall lamps are suitably dimmed, heating is regulated to the comfort temperature and the front doorbell is switched off at the same time? The "house party" playlist can provide bright lighting and a changeover to cooling mode.
Select scenes which operate your home technology using the ise smart connect KNX Sonos.

2.2.3 The ise smart connect KNX Sonos increases security

The Sonos system and ise smart connect KNX Sonos make your home more secure. Automated sound output offers a wide variety of possibilities.

On holiday

Music in the house keeps uninvited guests away

(Occupied-home simulation 1):
Why just switch lights on and off and move shutters to simulate an occupied house? Integrate your world of audio into the occupied-home simulation. What burglar would pick a house where loud music is regularly played?

Scaring off uninvited guests with sound scenarios

(Occupied-home simulation 2):
Loud dog barking, siren sounds and even voice announcements from the microSD card triggered by outdoor motion detectors and played in different rooms will make criminals change their plans.

At home alone?

Simulating conversations

(Occupied-home simulation 3):
Put an audio book in MP3 form on the microSD card or network hard disk, and Sonos can simulate a lively dialogue inside your house while you're on holiday. Why not move it around as well? With multiple Sonos devices in the house, the dialogue can "move" from here to there.

Sonos signals unexpected visits

(Literal motion detection):
When it's dark, Sonos can notify you in good time of movement outdoors with an audio signal or speech in every room before the doorbell is even pressed.

Sonos will scare them away

Hear suspicious noises outdoors?
Pressing the light switch (e.g. in the bedroom) switches on the lighting in and on the house. A strong man's voice (a recording) calls out from the Sonos outdoor device: "Attention! Leave the property immediately! The police have been notified!" This can even be followed by unobtrusive police sirens.

While you're leaving

Prevent fire and water damage

If the outside doors are equipped with contacts on the building bus, the ise smart connect KNX Sonos can provide you with valuable information on the way while you're leaving the house: Brief audible messages such as "The cooker is still on!" and "A skylight is still open" can help prevent undesirable things happening.

2.2.4 Increase energy efficiency with ise smart connect KNX Sonos

The Sonos system and ise smart connect KNX Sonos help increase energy efficiency without a loss of convenience. A few examples:

Don't waste heating energy

"Window opened" announcement

If the outside temperature and the position of the windows are known to the KNX system, occupants can be reminded of energy consumption after a period of time an at regular intervals.
The announcement "The child's room window has been open for a long time" can work wonders. The volume can also be increased from announcement to announcement in especially stubborn cases.

Integrate generators:

A solar power system mounted on a roof often supplies more power than is needed in a house. In such cases, surplus energy is fed back into the energy network for minimal compensation.
In the evening, it's just the opposite – Power generation by the photovoltaic system decreases, whereas consumption for an electric cooker and television increases, which translates to higher costs.

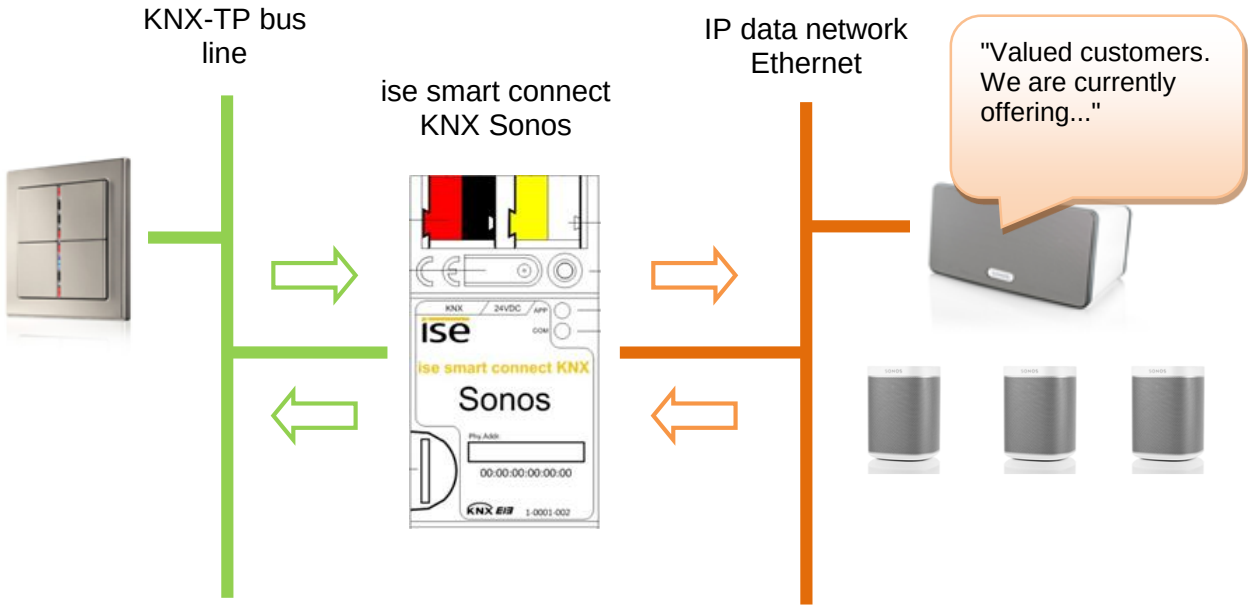
The ise smart connect KNX Sonos can help. If the photovoltaic system signals a current energy surplus via KNX, the following Sonos announcement may be able to make a valuable contribution to environmental protection and lower your costs as well: "Energy surplus – It would now be a good time for you to start the dishwasher, washing machine or drier!"

Improve generator use

3 Commercial application scenarios

3.1 Announcements in sales and event rooms

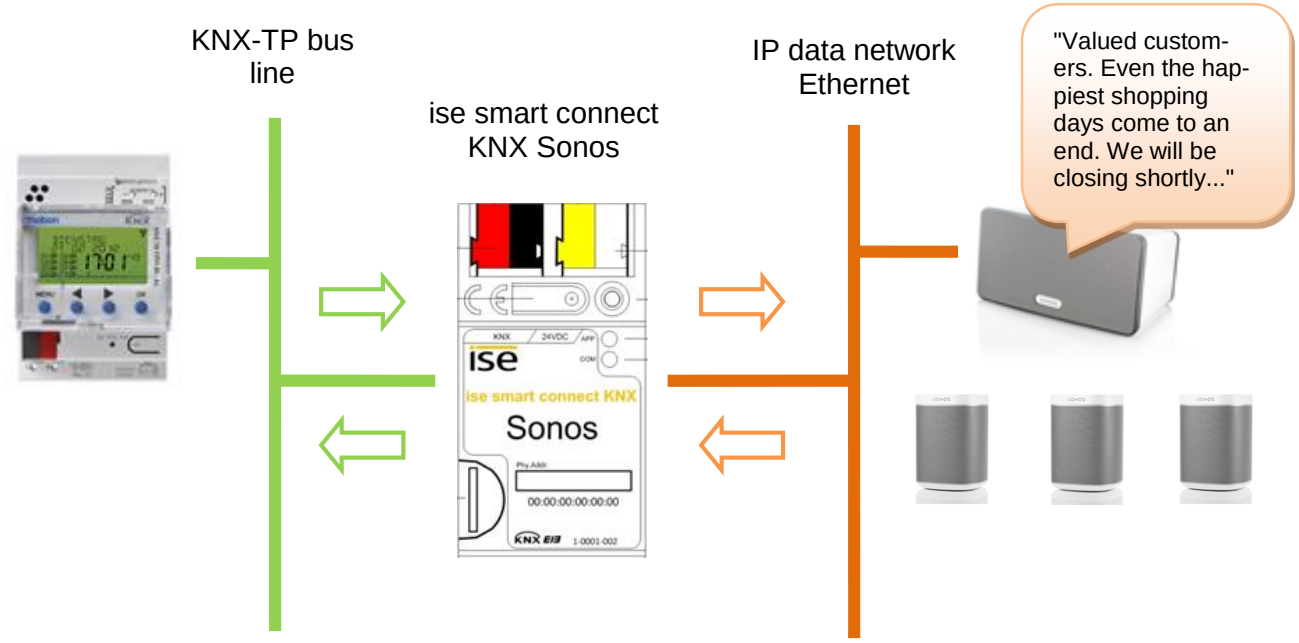
The ise smart connect KNX Sonos can present announcements at the push of a button or at set times.



Pressing the button "Announce a current offer" triggers a KNX command.

The ise smart connect KNX Sonos converts KNX command to Sonos commands (IP).

Sonos can play selected audio from a media library on the network, e.g. from the SD card in the device.



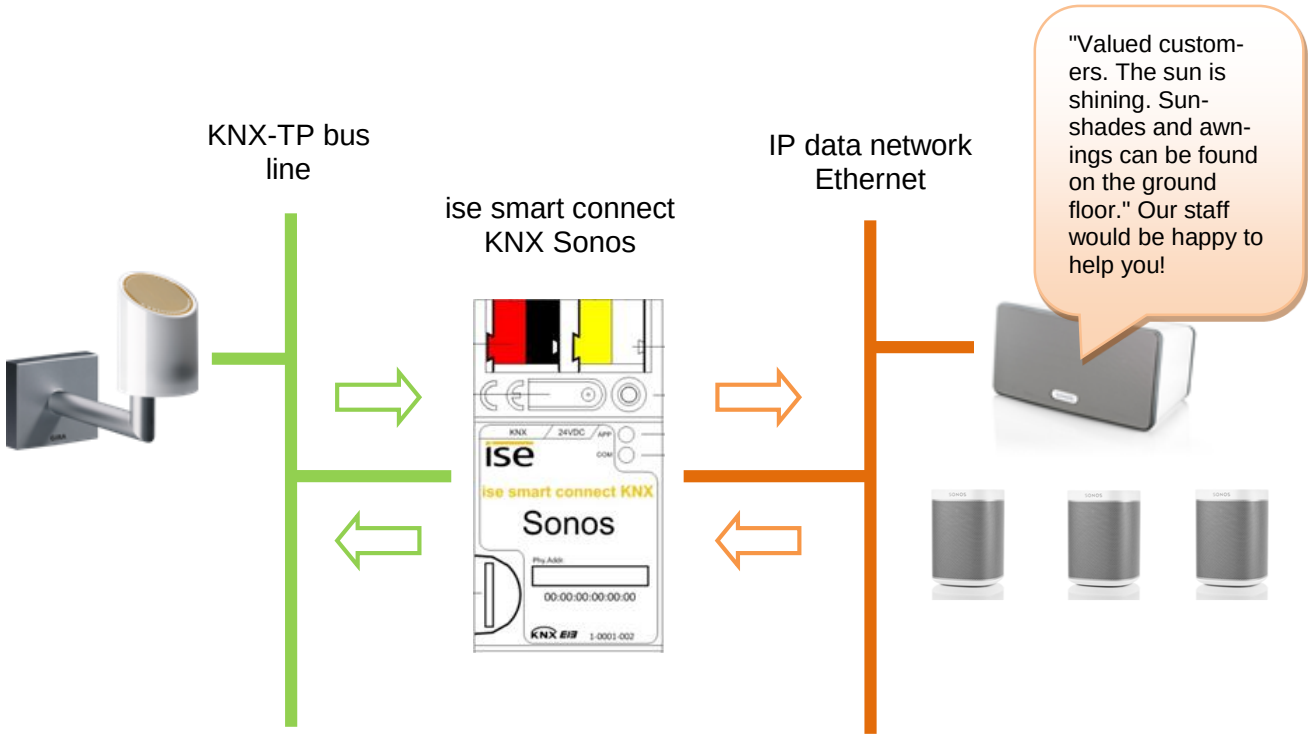
Requirements for announcements can also be triggered under time control.

The ise smart connect KNX Sonos converts KNX command to Sonos commands (IP).

Sonos can play selected audio from a media library on the network, e.g. from the SD card in the device.

The ise smart connect KNX Sonos can make event-based announcements.

Your announcements will be triggered by events:
Rain? →Umbrella department, High outside temperature? → Invitation to the ice cream parlour, …



Requirements for announcements can also be triggered by events. Example: Weather sensor reports *blue skies*.

The ise smart connect KNX Sonos converts KNX command to Sonos commands (IP).

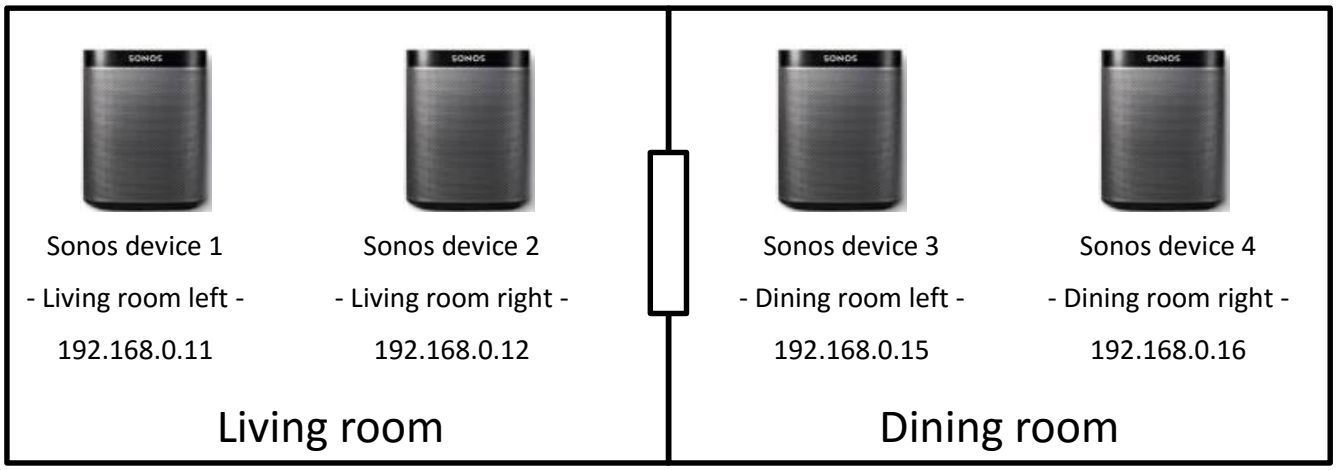
Sonos can play selected audio from a media library on the network, e.g. from the SD card in the device.

4 Dynamic group creation

4.1 Living and dining rooms with Sonos stereo loudspeakers

Initial situation: A stereo pair are to be implemented in the both the living and dining areas. Based on the wishes of the user, these two stereo pairs should be combinable in a group ("party mode"). Here, the user can choose whether the group now plays the music of the living area or the dining area.

Note: There is also an ETS demo project (knxproj) for this example under www.ise.de.



1. Create stereo pairs from Sonos devices 1 and 2 and from 3 and 4.
   Please use the Sonos application (e.g. your app) for this purpose. Information on the steps required for this can be found in your Sonos operating instructions.

   Important: The control of a stereo loudspeaker pair using the ise smart connect KNX Sonos always occurs through the first selected Sonos device. From the standpoint of the ise smart connect KNX Sonos, a stereo pair is just a "visible" Sonos device.

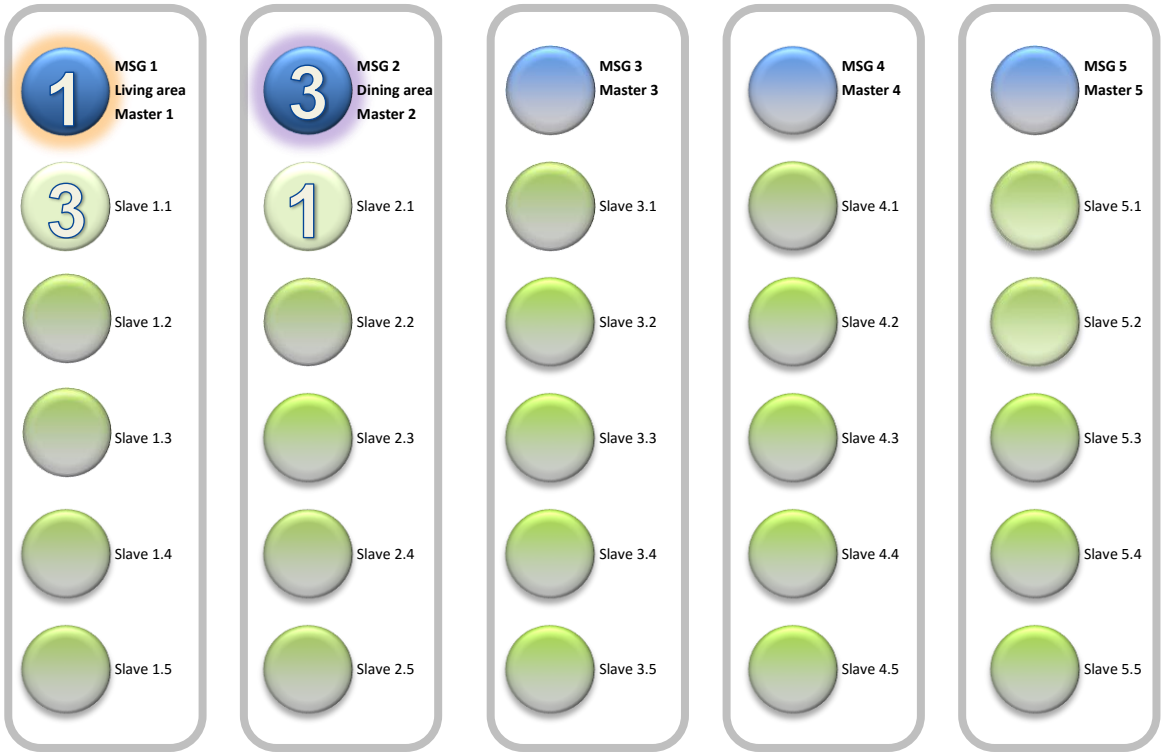
2. Determine the IP addresses of Sonos devices 1 and 3.
   The steps required for this are described in 6.4.3 – *Determining the IP addresses of the Sonos* devices on the data network. In the example, they are the IP addresses 192.168.0.11 and 192.168.0.15.

3. Parametrise two master-slave groups in your ise smart connect KNX Sonos. Define Sonos device 1 or 3 as the master of the master-slave group 1 or 2. Then define the two devices reciprocally as slaves in both master-slave groups. In the example, master-slave group 1 has Sonos device 1 as a master and Sonos device 3 as a slave; master-slave group 2 has Sonos device 3 as a master and Sonos device 1 as a slave.

4. Create the KNX group addresses and link the corresponding objects of the ise smart connect KNX Sonos for groups 1 and 2:
   - *Play*
   - *Next/previous track*
   - *Relative group volume control*
   - *Leave slave mode*
   - *Slave 1 – Switch group association*

5. Link the KNX group addresses to KNX buttons, visualisations etc.
   - *Play* and *Next/previous track* can be linked to switching objects of buttons or status objects of visualisations;
   - *Relative group volume* is linked to a standard dimmer switch object.
   - *Slave 1 – Switch group association* (add other room to the current room as a slave) or *Exit slave mode* (remaster, i.e. make the Sonos device in the current room the master and thus remove it from the other room as a slave if applicable) can also be connected with binary objects of buttons.

A schematic representation of the "assignment" of the Sonos devices to the ise smart connect KNX Sonos and the respective parametrisation can be found on the following page.



Schematic 1: Two stereo pairs with one ise smart connect KNX Sonos
Dynamic zone creation for Sonos devices (initial situation).

The "double" assignment of all Sonos devices to the two master-slave groups (MSG) is the required preparation for dynamic group creation with KNX.

Schematic 2: Two stereo pairs with one ise smart connect KNX Sonos.
Both stereo pairs are controlled via master 1 (Sonos device 1) and play the music of the living area.

4.2 Dynamic group creation (general)

Initial situation: With eight Sonos devices in multiple rooms.

The ise smart connect KNX Sonos can implement dynamic group creation for up to five master-slave groups (MSG), each comprised of a master and up to five slaves.

Room *Living room* ○: Sonos device 1 (master) and Sonos devices 2 and 3 (slaves of 1)
Room *Dining area* ○: Sonos device 4 (master) and Sonos devices 5 and 6 (slaves of 4)
Room *Kitchen* ○: Sonos device 7 (master) and Sonos device 8 (slave of 7)

All rooms are independent of one another. This means that each master-slave group has a master and can operate its own music program.

Schematic 3: Example configuration with a ise smart connect KNX Sonos.
Dynamic zone creation for Sonos devices (initial situation).

The *double* assignment of devices 4, 5, 6, 7 and 8 to multiple master-slave groups (MSG) is the required preparation for dynamic group creation with KNX.

4.3 Combining two rooms into a group

At present, one group and one room have been implemented.
Group *Living room and dining area* : Sonos device 1 (master) and Sonos devices 2, 3, 4, 5 and 6 slaves of 1, device 4 is no longer master
Room *Kitchen* : Sonos device 7 (master) and Sonos device 8, slave of 7

The group and the remaining room are independent of one another. This means that each group has a master and can operate its own music program. The *Living room and dining area* group is controlled via master 1 (Sonos device 1). The music playback for the entire group can now be controlled via the *Living room* operating devices for the entire group. Volume control of the individual slaves is still possible using the individual operating devices in the dining area.

Schematic 4: Example configuration with a ise smart connect KNX Sonos.
Combination of Sonos devices of the living room and dining area rooms into a group.

In the example, Sonos device 4 (dining area) becomes slave 1.3 under master 1.
Please note that Sonos devices 5 and 6 are not also automatically controlled by master 1 here.
They must be activated separately as slave 1.4 and 1.5.

An independent music programme can still be operated in the kitchen.

4.4 Party mode

At present, one group has been implemented (party mode):
Group "All Sonos devices" ○: Sonos device 1 (master) and Sonos devices 2, 3, 4, 5, 6, 7 and 8
Slaves of 1, devices 4 and 7, are no longer master

There is now only one Sonos zone left. All devices play the music programme of Sonos device 1.

Schematic 5: Example configuration with a ise smart connect KNX Sonos.
Combination of all devices into a zone (party mode).

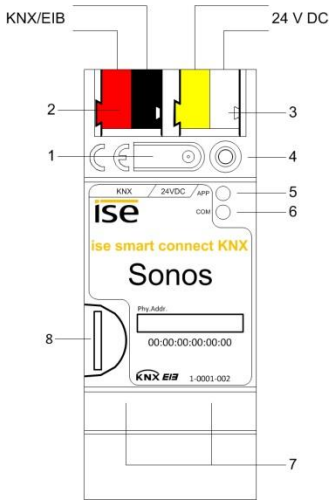
Other groups can be created in the same way.

Using your Sonos app, you can combine any desired rooms into a group. Groups not shown on the ise smart connect KNX Sonos are thus also possible. For this purpose, activate the desired master-slave group and add additional devices to this group using the Sonos app. In this way, the entire group can be controlled with the group telegram (and thus the KNX operating devices) of this master via KNX.

Dynamic group creation is simply activated or deactivated using 1-bit group telegrams on the KNX. For details, see chapter 6.6 – KNX group objects for dynamic group creation.

5 Installation, electrical connection and operation

5.1 Device design



Dimensions:
Width (W):
36 mm (2 HP)
Height (H):
90 mm
Depth (D):
74 mm

Figure 1: ise smart connect KNX Sonos.

1	Programming button for KNX	Switches to the device in the ETS programming mode or vice versa.
2	KNX connection (twisted pair)	On left: (+ / red) On right: (– / black)
3	Connection Power supply	DC 24...30 V, 2 W (at 24 V) On left: (+ / yellow) On right: (– / white)
4	KNX programming LED (red)	Red: Device is in ETS programming mode Yellow: For start or diagnosis code, see 7.2.1 / 7.2.2
5	LED *APP* (green)	Green: Normal operation Off / flashes: For start or diagnosis code, see 7.2.1 / 7.2.2
6	LED *COM* (yellow)	Yellow: Normal operation (brief dark phases indicate KNX telegram traffic) Off / flashes: For start or diagnosis codes, see 7.2.1 / 7.2.2
7	Ethernet connection	LED 10/100 speed (green) On: 100 Mbit/s Off: 10 Mbit/s LED link/ACT (orange) On: Connection to IP network Off: No connection Flashing: Data reception on IP
8	MicroSD card holder	As optional network authorisation (network drive) for audio files for playback by Sonos components Media size: Up to 32 GB microSDHC Format: FAT32

5.2 Safety notes

Electrical devices may only be installed and mounted by a qualified electrician. In doing so, the applicable accident prevention regulations must be observed. Failure to observe the installation instructions can result in damage to the device, fire or other dangers.

DANGER!
Electric shock if live parts are touched. Electric shock may lead to death.
Isolate connection cables before working on the device. Cover up live parts in the vicinity!

Please see the operating instructions enclosed with the device for more information.

5.3 Mounting and electrical connection

Mounting the device

- Snap it on to the top-hat rail as per DIN EN 60715, vertical mounting, network connections must face downward.

ⓘ A KNX data rail is not required; the connection to KNX-TP is established using the accompanying bus connection terminal.

ⓘ Observe temperature range (0 °C to +45 °C); do not install over heat-emitting devices and ensure sufficient ventilation/cooling if necessary.

Connecting the device

- Connect the KNX-TP bus line to the KNX connection of the device using the included KNX bus connection terminal. The bus line must be led to near the device terminal with the sheathing in tact! Bus line leads without sheathing (SELV) must be installed isolated in such a way that they are securely protected from all non-safety-low-voltage lines (SELV/PELV) (comply with ≥ 4 mm spacing or use cover; see also VDE regulations on SELV (DIN VDE 0100-410/"Secure isolation", KNX installation specifications)!
- Connecting the external power supply to the power supply connection (3) of the device using a KNX device connection terminal, preferably yellow/white.
  Polarity: left/yellow: (+), white/right: (–).

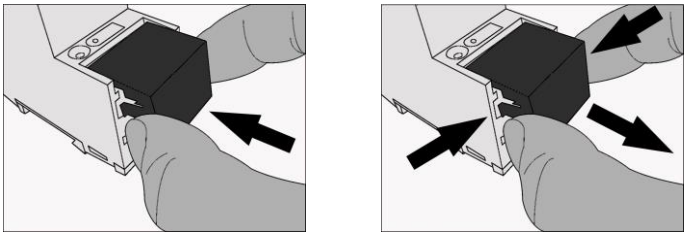
  Note: If the "non-choked" auxiliary power output of a KNX power supply is used as an auxiliary energy source, you must ensure that the overall current consumption (including all KNX-TP devices) on the line segment does not exceed the rated voltage of the power supply.
- Connection of one or two IP network lines to the network connection of the device (7).

Mounting/removing a cover cap

A cover cap can be mounted for protection of the KNX bus and power supply connections from dangerous voltage, particularly in the connection area.

The cap is mounted with an attached bus and power supply terminal and a connected bus and power supply line to the rear.

- Mounting the cover cap: The cover cap is pushed over the bus terminal until it audibly engages (comp. Figure 2A).
- Removing the cover cap: The cover cap is removed by pressing it in slightly on the side and pulling it off to the front (comp Figure 2B).



A B

Figure 2: Mounting/removing a cover cap.

6 Configuration

Configuration of the ise smart connect KNX Sonos is divided into the following steps:

Preparations:		**For explanations, see**
1	Mount device, connect it to KNX bus connection and auxiliary voltage.	→ Chapter 5
2	Connect the Sonos system to the data network and set up using software supplied with the Sonos components.	→ Sonos documentation
3	Install the ise smart connect KNX Sonos on the same IP network as the Sonos components and make settings in the router of the IP network if necessary.	

Configuration via ETS:

After installing the device and connecting the bus, power supply and Ethernet, the device can be commissioned. The preparatory configuration is carried out using the Engineering Tool Software, ETS, available from the KNX Association, see www.knx.org.

1	Create the ise smart connect KNX Sonos as a device in the ETS.	→ Chapter 6.1
2	Assign physical address as usual corresponding to the KNX topology.	
3	Set IP address, IP subnet mask and default gateway address of the ise smart connect KNX Sonos or select "Obtain an IP address automatically (from a DHCP server)".	→ Chapter 6.3
4	General parameters for setting the ise smart connect KNX Sonos.	→ Chapter 6.4.1
5	Setting *IP addresses* parameter: In this step, you inform the ise smart connect KNX Sonos of the IP addresses of the Sonos devices to be addressed or select the *"Auto Detect" setting*.	→ Chapter 6.4.2
6	Connect group addresses to group objects as usual.	→ Chapter 6.5
10	The ise smart connect KNX Sonos is now ready for operation via “Program ETS” and for function testing.	

6.1 Configuration step 1 − Create ise smart connect KNX Sonos as device in the ETS

If it has not yet been done, import the ETS device application to the ise smart connect KNX Sonos once in the device catalogue of the ETS, for example using the *Import Products* function on the start page of the ETS.

You can download the ETS application from our website under www.ise.de free of charge.

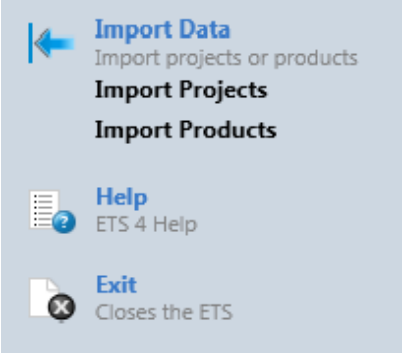


Figure 3: Product import via the ETS start page.

The other explanations in this document refer to

Hardware		Application software	
Device:	**ise smart connect KNX Sonos**	Application:	ise smart connect KNX Sonos
Manufacturer:	**ise GmbH**	Version**:**	**V2.1**
Order No.	**1-0001-002**		
Version:	**V1.0**		
Design:	**DRA (series installation)**		

If you already have an ETS project with a previous database entry, you can also update the application program. To do this, drag the new database entry to the project and then select the device with the old database entry. Now, in the device "Properties", select "Information" and then the "Application" (ETS 4.2) or "Application program" (ETS 5) tab.
Here, use the "Update application program" (ETS 4.2) or "Update" (ETS 5) button to replace the old database entry. Existing links with group addresss are not lost. The newly added device can now be deleted again.
In ETS 4.2, you require a special license for this. From ETS 5, this is possible with every license.

6.2 Configuration step 2 – Assigning a physical address

In the ETS, assign the device a physical address as usual corresponding to the KNX topology .

6.3 Configuration step 3 – Setting the IP address, subnet mask and address of the standard gateway

In addition to the physical address on the KNX network, the ise smart connect KNX Sonos must also be assigned an address on the IP data network. This includes the following information:

- IP address
- Subnet mask
- Address of the default gateway

This can occur in two ways, either

- automatically by obtaining the data from a DHCP server (e.g. Integrated into the data network route) or
- via manual setting in the ETS.

Proceed as follows for this purpose:

1. Select the device in the ETS.

2. Display the properties of the device in the sidebar of the ETS as shown in Figure 4.

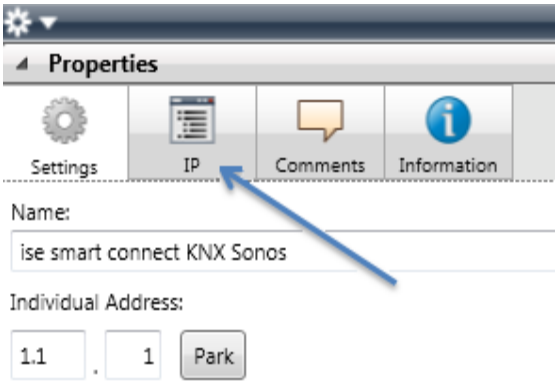


Figure 4: Device properties dialogue of the ETS

3. Select the "IP" tab as per Figure 5. Then select either

   ⊙ *Obtain an IP address automatically (default)*

   The address data are obtained automatically from a DHCP server on the data network.

   or

   ⊙ *Use the following address*

   and enter the data manually.
   You can usually obtain the permissible IP address range and the subnet mask and standard gateway from the router configuration interface.

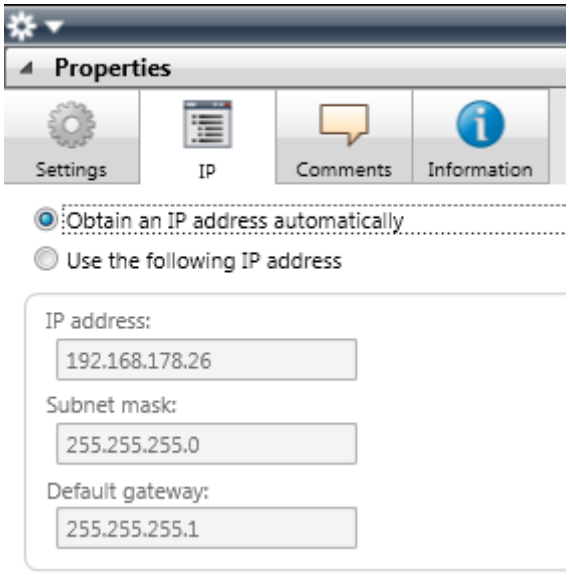


Figure 5: Setting of the IP address data of the device on the "IP" tab in the sidebar of the ETS

If the ⊙ *Obtain an IP address automatically* setting is used, a DHCP server must issue the ise smart connect KNX Sonos a valid IP address.

If a DHCP server is not available for this setting, the device starts up after a waiting time with an AutoIP address (address range from 169.254.1.0 to 169.254.254.255).

As soon as a DHCP server is available, the device is automatically assigned a new IP address.

6.4 Setting general parameters.

6.4.1 Parameter page *General*

The default value of each parameter is marked in **bold**.

Parameter	Entry/Selection	Remarks
Configuration of the master-slave groups	**Automatic detection (only a master without slaves)**	Any available Sonos device from the local network is selected automatically and used as a master of the first group. Do not use this mode if multiple Sonos devices are available on the local network. The selection can change at any time if another Sonos device is detected.
	1 group 2 groups 3 groups 4 groups 5 groups	Determines the number of groups for which communication objects are to be available. One master and up to five slaves can be entered for each group.
Support for dynamic group creation (master/slave)	**Yes** no	Select *Yes* to make the communication objects available for group volume and to activate the parameters for slave IP addresses. Select *No* if you only want to configure the masters and do not need slaves or communication objects for the group volume.
Text display speed	**Slow** Normal Fast	Controls the cycle rate at which group telegrams are sent for artist/track/album texts to create a ticker effect. Pay attention to the bus load here (cyclical telegrams with maximum data width). KNX TP can transmit up to 25 telegrams of this type per second. If in doubt, choose the *Slow* setting or deactivate cyclical transmission by selecting shortened display in the *Text wrap* parameter.
Text wrap	Ticker text	Artist/track/album texts which are longer than 14 characters are displayed as repeating sequences of 14-character telegrams. The text is run through from beginning to end. Each telegram begins one character further back in the text as the previous one. The speed of the ticker text can be set with *Text display speed*.

Parameter	Entry/Selection	Remarks
	Block-by-block	Artist/track/album texts which are longer than 14 characters are displayed as sequences of telegrams. Unlike ticker text, the increment is a full 14 characters, not just one character per telegram. The speed of the block-by-block display can be set with *Text display speed*.
	Shortened	If an artist/track/album title exceeds 14 characters, the rest is truncated and not displayed on the KNX. This mode generates the lowest bus load, as a telegram is only transmitted if the title actually changes.
Volume delay [ms]	50 100 250 **500** 750 1000	Sets the time delay between two steps of the relative volume control ("Dimmer").
'Empty List' display text	**Empty List**	Sets the value which accepts communication object 26, *Playlist name*, if there are no tracks for playback in the queue on the Sonos master.
'Unsaved List' display text	**Unsaved List**	Sets the value which is displayed if a track is selected in the queue that is not derived from a saved Sonos playlist.

6.4.2 Parameter tab Master-slave gruppe

There is a parameter page for the IP addresses of the master and slave devices for each active group.

Parameter	Entry/Selection	Remarks
Group #N - Master	The IP address of a Sonos device E.g. 192.178.168.20	This device can be controlled as the master. Only IPv4 addresses can be used. When you enter a fixed IP address for the Sonos master (in contrast to Auto-Discover), the full functionality of the ise smart connect KNX Sonos, including multi-master operation and dynamic group assignment, is available. (See also chapter 6.4.3 “Determining the IP addresses of the Sonos devices on the data network”.)
	0.0.0.0	Special case in group 1: Results in *Automatic detection* (comp. 6.4.1 Parameter page *General*); otherwise, the master is not available.
Group #N – Number of slaves	**None** 1 slave 2 slaves 3 slaves 4 slaves 5 slaves	Only available if *Support for dynamic group creation* (comp. 6.4.1 Parameter page *General*) is activated. Determines the number of slave addresses which can be set. A set of group objects is activated for each slave.
Group #N – Slave #M	The IP address of a Sonos device	The local IP address can be entered for each slave here. (See also chapter 6.4.3 “Determining the IP addresses of the Sonos devices on the data network”.)
	0.0.0.0	Special case: Slave not available.

6.4.3 Determining the IP addresses of the Sonos devices on the data network

To determine the IP addresses of the Sonos devices, the Sonos PC software provides a quick support option.

Start the Sonos software for the PC and select the item Use my Sonos system in the Help menu. The display shown here appears, in which your Sonos devices and your names and the current IP addresses are listed, e.g.:

```
Linked ZP: 192.168.137.80
--------------------------------
PLAY:3: Guest room
Serial number: 00-0E-58-F1-7A-9C:C
Version: 5.0 (Build 26176230)
Hardware version: 1.8.1.2-2
IP address: 192.168.137.80
OTP:
--------------------------------
PLAY:5: Living room
Serial number: 00-0E-58-85-E3-18:D
Version: 5.0 (Build 26176230)
Hardware version: 1.16.4.1-2
IP address: 192.168.137.98
OTP: 1.1.1(1-16-4-zp5s-0.5)
```

If you are using DHCP for your Sonos devices, you should configure your router such that the same IP address is always assigned to a Sonos device so that the device can be addressed via the ise smart connect KNX Sonos. Please refer to your router's manual for information on how to configure this.

6.5 Connect group addresses to group objects.

The following group objects are available for the connection of group addresses at the ise smart connect KNX Sonos:

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
1 (group 1) 101 (group 2) 201 (group 3) 301 (group 4) 401 (group 5)	Play	Write	1 bit	1,010	C-W--
Rubric:	Playback	Data type:		Start/Stop	
Function:	Group 1/2/3/4/5 – Music playback				
Description:	1 = Play, 0 = Pause				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
2 (group 1) 102 (group 2) 202 (group 3) 302 (group 4) 402 (group 5)	Pause	Write	1 bit	1,003	C-W--
Rubric:	Playback	Data type:		Enable	
Function:	Group 1/2/3/4/5 – Pause music playback				
Description:	1 = Pause, 0 = Play				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
3 (group 1) 103 (group 2) 203 (group 3) 303 (group 4) 403 (group 5)	Stop	Write	1 bit	1,010	C-W--
Rubric:	Playback	Data type:		Start/Stop	
Function:	Group 1/2/3/4/5 – End music playback and unselect source				
Description:	1 = Stop, 0 = Play				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
4 (group 1) 104 (group 2) 204 (group 3) 304 (group 4) 404 (group 5)	Playback state	Read	1 bit	1,010	CR-T-

Rubric: Playback
Data type: Start/Stop

Function: Group 1/2/3/4/5 – Indicates whether music is being played or whether the music playback is paused or stopped

Description: 1 = Playback in progress, 0 = No playback active

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
5 (group 1) 105 (group 2) 205 (group 3) 305 (group 4) 405 (group 5)	Pause state	Read	1 bit	1,003	CR-T-

Rubric: Playback
Data type: Enable

Function: Group 1/2/3/4/5 – Indicates whether the music playback has been paused, music is being played or music playback has been stopped

Description: 1 = Playback paused, 0 = Playback in progress or stopped

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
6 (group 1) 106 (group 2) 206 (group 3) 306 (group 4) 406 (group 5)	Stop state	Read	1 bit	1,010	CR-T-

Rubric: Playback
Data type: Start/Stop

Function: Group 1/2/3/4/5 – Indicates whether the music playback has been stopped, music is being played or music playback has been paused

Description: 1 = Playback stopped, 0 = Playback in progress or paused

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
7 (group 1) 107 (group 2) 207 (group 3) 307 (group 4) 407 (group 5)	Volume control	Write	1 byte	5,001	C-W--
Rubric:	Volume	Data type:	Percent (0 to 100%)		
Function:	Group 1/2/3/4/5 – Set master volume (absolute)				
Description:	Enables setting of the volume over the bus: 0 corresponds to 0%, and 255 to 100% volume				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
8 (group 1) 108 (group 2) 208 (group 3) 308 (group 4) 408 (group 5)	Volume state	Read	1 byte	5,001	CR-T-
Rubric:	Volume	Data type:	Percent (0 to 100%)		
Function:	Group 1/2/3/4/5 – Current master volume				
Description:	Supplies the volume value over the bus: 0 corresponds to 0%, and 255 to 100% volume				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
9 (group 1) 109 (group 2) 209 (group 3) 309 (group 4) 409 (group 5)	Relative volume control	Write	4 bit	3,007	C-W--
Rubric:	Volume	Data type:	Dimmer step		
Function:	Group 1/2/3/4/5 – Increase or decrease master volume				
Description:	Enables louder or quieter relative volume adjustment over the bus. Suitable transmitters include push button sensors with the "Brighten/Dim" function, for example				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
10 (group 1) 110 (group 2) 210 (group 3) 310 (group 4) 410 (group 5)	Volume control louder/quieter	Write	1 bit	1,007	C-W--

Rubric: Volume
Data type: Step

Function: Group 1/2/3/4/5 – Increase or decrease master volume by 5%

Description: Enables relative volume adjustment louder/quieter in increments up to 5% via 1-bit group telegrams: 1 = 5% louder, 0 = 5% quieter.

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
11 (group 1) 111 (group 2) 211 (group 3) 311 (group 4) 411 (group 5)	Muting	Write	1 bit	1,003	C-W--

Rubric: Volume
Data type: Enable

Function: Group 1/2/3/4/5 – Mutes master music playback

Description: Muting: Switches the loudspeaker off (1) or on again (0) without changing the current volume value.

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
12 (group 1) 112 (group 2) 212 (group 3) 312 (group 4) 412 (group 5)	Muting state	Read	1 bit	1,003	CR-T-

Rubric: Volume
Data type: Enable

Function: Group 1/2/3/4/5 – Indicates whether the master playback device is muted

Description: Supplies the status of muting: 1 = Loudspeaker off, 0 = Loudspeaker on.

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
13 (group 1) 113 (group 2) 213 (group 3) 313 (group 4) 413 (group 5)	Next/previous track	Write	1 bit	1,007	C-W--

Rubric: Song
Data type: Step

Function: Group 1/2/3/4/5 – Skip to next or previous track

Description: Switches to the next (1) or previous (0) track.

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
14 (group 1) 114 (group 2) 214 (group 3) 314 (group 4) 414 (group 5)	Next/previous playlist	Write	1 bit	1,007	C-W--
Rubric:	Playlist	Data type:	Switch step		
Function:	Group 1/2/3/4/5 – Skip to next or previous playlist				
Description:	Switches to the next (1) or previous (0) playlist				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
15 (group 1) 115 (group 2) 215 (group 3) 315 (group 4) 415 (group 5)	Playlist selection	Write	1 byte	5,010	C-W--
Rubric:	Playlist	Data type:	Meter pulse (0 to 255)		
Function:	Group 1/2/3/4/5 – Starts playback of the selected playlist				
Description:	1..255 starts playback of the selected playlist, which can be configured on the website of the device (comp. 7.7). 0 stops the playback and deselects the current source. In addition it clears the playback queue.				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
16 (group 1) 116 (group 2) 216 (group 3) 316 (group 4) 416 (group 5)	Current playlist	Read	1 byte	5,010	CR-T-
Rubric:	Playlist	Data type:	Meter pulse (0 to 255)		
Function:	Group 1/2/3/4/5 – Number of the currently selected playlist				
Description:	Supplies the slot of the current playlist. It is 0 if no playlist has been selected or if the playlist used has not been saved. If a playlist is stored in multiple locations, behaviour will be ambiguous.[1]				

[1] A source is assigned to a fixed slot using the website of the ise smart connect KNX Sonos. The same source is assigned to multiple locations in a master-slave group. The Sonos device only transmits the source name which cannot be assigned to a unique slot. For this reason, a source should only be assigned to one slot per master-slave group.

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
17 (group 1) 117 (group 2) 217 (group 3) 317 (group 4) 417 (group 5)	Random playback	Write	1 bit	1,003	C-W--

Rubric:	Playback mode	Data type:	Enable
Function:	Group 1/2/3/4/5 – Plays the track of the current playlist in random order		
Description:	Activates (1) or stops (0) the random playback of tracks in the current playlist (shuffle mode). 1 = Random order, 0 = Order of the playlist		

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
19 (group 1) 119 (group 2) 219 (group 3) 319 (group 4) 419 (group 5)	Repeat all	Write	1 bit	1,003	C-W--

Rubric:	Playback mode	Data type:	Enable
Function:	Group 1/2/3/4/5 – Repeats all tracks of the current playlist		
Description:	Activates (1) or stops (0) the repetition of all tracks in the current playlist (repeat mode).		

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
20 (group 1) 120 (group 2) 220 (group 3) 320 (group 4) 420 (group 5)	Random playback mode state	Read	1 bit	1,003	CR-T-

Rubric:	Playback mode	Data type:	Enable
Function:	Group 1/2/3/4/5 – Indicates whether playback occurs randomly		
Description:	1 = Random order, 0 = Order of the playlist		

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
22 (group 1) 122 (group 2) 222 (group 3) 322 (group 4) 422 (group 5)	'Repeat all' playback mode state	Read	1 bit	1,003	CR-T-
Rubric:	Playback mode	Data type:	Enable		
Function:	Group 1/2/3/4/5 – Indicates whether all tracks of the current playlist are repeated				
Description:	1 = Repetition on, 0 = Repetition off				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
23 (group 1) 123 (group 2) 223 (group 3) 323 (group 4) 423 (group 5)	Song title	Read	14 bytes	16,001	CR-T-
Rubric:	Song	Data type:	Character (ISO 8859-1)		
Function:	Group 1/2/3/4/5 – Title of the song currently being played				
Description:	Supplies the title of the current song as 14-byte text. The ticker behaviour can be influenced by the parameter settings of the ETS.				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
24 (group 1) 124 (group 2) 224 (group 3) 324 (group 4) 424 (group 5)	Artist	Read	14 bytes	16,001	CR-T-
Rubric:	Song	Data type:	Character (ISO 8859-1)		
Function:	Group 1/2/3/4/5 – Artist name of the song currently being played				
Description:	Supplies the artist name of the current song as 14-byte text. The ticker behaviour can be influenced by the parameter settings of the ETS.				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
25 (group 1) 125 (group 2) 225 (group 3) 325 (group 4) 425 (group 5)	Album	Read	14 bytes	16,001	CR-T-

Rubric:	Song	Data type:	Character (ISO 8859-1)
Function:	Group 1/2/3/4/5 – Album title of the song currently being played		
Description:	Supplies the album title of the current song as 14-byte text. The ticker behaviour can be influenced by the parameter settings of the ETS.		

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
26 (group 1) 126 (group 2) 226 (group 3) 326 (group 4) 426 (group 5)	Playlist name	Read	14 bytes	16,001	CR-T-

Rubric:	Playlist	Data type:	Character (ISO 8859-1)
Function:	Group 1/2/3/4/5 – Title of the selected playlist		
Description:	Supplies the clear text name of the playlist to which the currently selected track belongs as 14-character text. Supplies the parametrised character sequence from *'Empty List' display text* if no playlist is selected. Supplies the parametrised character sequence from *'Unsaved List' display text* if the track does not belong to any playlist.		

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
27 (group 1) 127 (group 2) 227 (group 3) 327 (group 4) 427 (group 5)	Playback device connected	Read	1 bit	1,002	CR-T-

Rubric:	Connections	Data type:	Boolean
Function:	Group 1/2/3/4/5 – Indicates a functional connection to the playback device.		
Description:	Supplies information on whether the playback device was found on the network. 1 = Found, 0 = Not found		

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
28 (group 1) 128 (group 2) 228 (group 3) 328 (group 4) 428 (group 5)	Last error	Read	1 byte	20.*	CR-T-

Rubric: Error diagnosis
Data type:

Function: Group 1/2/3/4/5 – The last error in communication with the playback device

Description: Supplies information on the last registered error:

0 = No error/Success

1 = Device has no connection to IP network

2 = UPnP network error (Sonos device not responding)

3 = UPnP protocol error (Sonos device responds with error or unexpected reply)

4 = Playlist not available

5 = Empty playlist slot

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
29 (group 1) 129 (group 2) 229 (group 3) 329 (group 4) 429 (group 5)	Last error	Read	14 bytes	16,001	CR-T-

Rubric: Error diagnosis
Data type: Character (ISO 8859-1)

Function: Group 1/2/3/4/5 – The last error as text in communication with the playback device

Description: Supplies information on the last registered error as 14-byte text:

"OK" = No error/Success

"no IP" = Device has no connection to IP network

"network err" = UPnP network error (Sonos device not responding)

"UPnP err" = UPnP protocol error (Sonos device responds with error or unexpected reply)

"playlist" = Playlist not available

"empty slot" = Empty playlist slot

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
30 (group 1) 130 (group 2) 230 (group 3) 330 (group 4) 430 (group 5)	Sonos group slave mode	Read	1 bit	1,001	CR-T-

Rubric: Error diagnosis
Data type: Switching

Function: Group 1/2/3/4/5 – Indicates whether the playback device is used as a slave in a Sonos group

Description: Supplies information on whether the playback device is used as a slave in a Sonos group. 1 = Is slave, 0 = Is not slave

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
31 (group 1) 131 (group 2) 231 (group 3) 331 (group 4) 431 (group 5)	Leave slave mode	Write	1 bit	1,017	C-W--

Rubric: Slave mode
Data type: Trigger

Function: Group 1/2/3/4/5 – Playback device becomes master if connected to a Sonos group as a slave

Description: Enables the playback device to be disconnected from a Sonos group and operated as a master device again.

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
32 (group 1) 132 (group 2) 232 (group 3) 332 (group 4) 432 (group 5)	Group volume control	Write	1 byte	5,001	C-W--

Rubric: Group volume
Data type: Percent (0 to 100%)

Function: Group 1/2/3/4/5 – Set group volume (absolute)

Description: Enables setting of the group volume over the bus: 0 corresponds to 0%, and 255 to 100% volume

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
33 (group 1) 133 (group 2) 233 (group 3) 333 (group 4) 433 (group 5)	Group volume state	Read	1 byte	5,001	CR-T-
Rubric:	Group volume	Data type:	Percent (0 to 100%)		
Function:	Group 1/2/3/4/5 – Current group volume				
Description:	Supplies the value of the group volume over the bus: 0 corresponds to 0%, and 255 to 100% volume				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
34 (group 1) 134 (group 2) 234 (group 3) 334 (group 4) 434 (group 5)	Relative group volume control	Write	4 bit	3,007	C-W--
Rubric:	Group volume	Data type:	Dimmer step		
Function:	Group 1/2/3/4/5 – Increase or decrease group volume				
Description:	Enables the relative adjustment (louder/quieter) of the group volume over the bus. Suitable transmitters include push button sensors with the "Brighten/Dim" function, for example.				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
35 (group 1) 135 (group 2) 235 (group 2) 335 (group 3) 435 (group 4)	Group volume control louder/quieter	Write	1 bit	1,007	C-W--
Rubric:	Group volume	Data type:	Step		
Function:	Group 1/2/3/4/5 – Increase or decrease group volume by 5%				
Description:	Enables relative adjustment (louder/quieter) of the group volume in increments up to 5% via 1-bit group telegrams: 1 = 5% louder, 0 = 5% quieter.				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
36 (group 1) 136 (group 2) 236 (group 3) 336 (group 4) 436 (group 5)	Group muting	Write	1 bit	1,003	C-W--
Rubric:	Group volume	Data type:	Enable		
Function:	Group 1/2/3/4/5 – Mutes music playback of the group				
Description:	Group muting: Switches the loudspeakers of the group off (1) or on again (0).				

Object	Name	Direction	Data width	DP type	Flags (CRWTU)
37 (group 1) 137 (group 2) 237 (group 3) 337 (group 4) 437 (group 5)	Group muting state	Read	1 bit	1,003	CR-T-
Rubric:	Group volume	Data type:	Enable		
Function:	Group 1/2/3/4/5 – Indicates whether all playback devices of this group are muted				
Description:	Supplies the status of group muting: 1 = Loudspeaker off, 0 = Loudspeaker on.				

Group objects 18 and 21 are reserved for future expansions.

6.6 KNX group objects for dynamic group creation

The ise smart connect KNX Sonos supports the dynamic group creation of the Sonos devices. You can influence the integration of individual Sonos slaves into a group with the group objects from the bus outward listed in the following.

Notes:

- For each master, up to five slaves can be parametrised to form a master-slave group (MSG) (see 6.4.2) which can be assigned as a slave to the master dynamically via group objects/KNX group telegrams.
- The slaves can be connected to or disconnected from the zone individually via 1-bit group objects.
- The default volume control and status response are available for the master and each slave.
- The relative volume control of a group is implemented via the group volume.
- The state of the connection is saved only in the Sonos system. If the auxiliary voltage fails and then returns, the ise smart connect KNX Sonos reads the connection state from the Sonos system again via UPnP.
- To use group support, automatic detection (master IP address 0.0.0.0) cannot be parametrised.

The following KNX group objects are available for group support:

Object	Name	Direction	Data width	DP type	Flags
 40 (slave 1 – group 1) 50 (slave 2 – group 1) 60 (slave 3 – group 1) 70 (slave 4 – group 1) 80 (slave 5 – group 1) 140 (slave 1 – group 2) 150 (slave 2 – group 2) 160 (slave 3 – group 2) 170 (slave 4 – group 2) 180 (slave 5 – group 2) 240 (slave 1 – group 3) 250 (slave 2 – group 3) 260 (slave 3 – group 3) 270 (slave 4 – group 3) 280 (slave 5 – group 3) 340 (slave 1 – group 4) 350 (slave 2 – group 4) 360 (slave 3 – group 4) 370 (slave 4 – group 4) 380 (slave 5 – group 4) 440 (slave 1 – group 5) 450 (slave 2 – group 5) 460 (slave 3 – group 5) 470 (slave 4 – group 5) 480 (slave 5 – group 5)	Slave 1/2/3/4/5 – Switch group association	Write	1 bit	1,001	C-W--

Rubric:	Slave zone control	Data type:	Switching
Function:	Group 1/2/3/4/5 – Add slave 1/2/3/4/5 to this master-slave group or remove it from there		
Description:	Connects the Sonos slave to the master in a group (1) or terminates the group connection of the slave (0).		

Object	Name	Direction	Data width	DP type	Flags
41 (slave 1 – group 1) 51 (slave 2 – group 1) 61 (slave 3 – group 1) 71 (slave 4 – group 1) 81 (slave 5 – group 1) 141 (slave 1 – group 2) 151 (slave 2 – group 2) 161 (slave 3 – group 2) 171 (slave 4 – group 2) 181 (slave 5 – group 2) 241 (slave 1 – group 3) 251 (slave 2 – group 3) 261 (slave 3 – group 3) 271 (slave 4 – group 3) 281 (slave 5 – group 3) 341 (slave 1 – group 4) 351 (slave 2 – group 4) 361 (slave 3 – group 4) 371 (slave 4 – group 4) 381 (slave 5 – group 4) 441 (slave 1 – group 5) 451 (slave 2 – group 5) 461 (slave 3 – group 5) 471 (slave 4 – group 5) 481 (slave 5 – group 5)	Slave 1/2/3/4/5 – Group association	Read	1 bit	1,001	CR-T-

Rubric:	Slave zone control	Data type:	Switching
Function:	Group 1/2/3/4/5 – Indicates whether slave 1/2/3/4/5 has been added to this master-slave group		
Description:	Supplies information on whether the slave is linked to the master in a group (1) or not (0).		

Object	Name	Direction	Data width	DP type	Flags
42 (slave 1 – group 1) 52 (slave 2 – group 1) 62 (slave 3 – group 1) 72 (slave 4 – group 1) 82 (slave 5 – group 1) 142 (slave 1 – group 2) 152 (slave 2 – group 2) 162 (slave 3 – group 2) 172 (slave 4 – group 2) 182 (slave 5 – group 2) 242 (slave 1 – group 3) 252 (slave 2 – group 3) 262 (slave 3 – group 3) 272 (slave 4 – group 3) 282 (slave 5 – group 3) 342 (slave 1 – group 4) 352 (slave 2 – group 4) 362 (slave 3 – group 4) 372 (slave 4 – group 4) 382 (slave 5 – group 4) 442 (slave 1 – group 5) 452 (slave 2 – group 5) 462 (slave 3 – group 5) 472 (slave 4 – group 5) 482 (slave 5 – group 5)	Slave 1/2/3/4/4 – Volume control	Write	1 byte	5,001	C-W--

Rubric:	Slave zone control	Data type:	Percent (0 to 100%)
Function:	Group 1/2/3/4/5 – Set volume of slave 1/2/3/4/5 (absolute)		
Description:	Enables setting of the slave volume over the bus: 0 corresponds to 0%, and 255 to 100% volume.		

Object	Name	Direction	Data width	DP type	Flags
43 (slave 1 – group 1) 53 (slave 2 – group 1) 63 (slave 3 – group 1) 73 (slave 4 – group 1) 83 (slave 5 – group 1) 143 (slave 1 – group 2) 153 (slave 2 – group 2) 163 (slave 3 – group 2) 173 (slave 4 – group 2) 183 (slave 5 – group 2) 243 (slave 1 – group 3) 253 (slave 2 – group 3) 263 (slave 3 – group 3) 273 (slave 4 – group 3) 283 (slave 5 – group 3) 343 (slave 1 – group 4) 353 (slave 2 – group 4) 363 (slave 3 – group 4) 373 (slave 4 – group 4) 383 (slave 5 – group 4) 443 (slave 1 – group 5) 453 (slave 2 – group 5) 463 (slave 3 – group 5) 473 (slave 4 – group 5) 483 (slave 5 – group 5)	Slave 1/2/3/4/5 – Volume state	Read	1 byte	5,001	CR-T-

Rubric:	Slave zone control	Data type:	Percent (0 to 100%)
Function:	Group 1/2/3/4/5 – Current volume of slave 1/2/3/4/5		
Description:	Supplies the volume value of the slave over the bus: 0 corresponds to 0%, and 255 to 100% volume.		

Object	Name	Direction	Data width	DP type	Flags
44 (slave 1 – group 1) 54 (slave 2 – group 1) 64 (slave 3 – group 1) 74 (slave 4 – group 1) 84 (slave 5 – group 1) 144 (slave 1 – group 2) 154 (slave 2 – group 2) 164 (slave 3 – group 2) 174 (slave 4 – group 2) 184 (slave 5 – group 2) 244 (slave 1 – group 3) 254 (slave 2 – group 3) 264 (slave 3 – group 3) 274 (slave 4 – group 3) 284 (slave 5 – group 3) 344 (slave 1 – group 4) 354 (slave 2 – group 4) 364 (slave 3 – group 4) 374 (slave 4 – group 4) 384 (slave 5 – group 4) 444 (slave 1 – group 5) 454 (slave 2 – group 5) 464 (slave 3 – group 5) 474 (slave 4 – group 5) 484 (slave 5 – group 5)	Slave 1/2/3/4/5 – Relative volume control	Write	4 bit	3,007	C-W--

Rubric:	Slave zone control	Data type:	Dimmer step
Function:	Group 1/2/3/4/5 – Increase or decrease volume of slave 1/2/3/4/5		
Description:	Enables relative volume adjustment (louder/quieter) of the group over the bus. Suitable transmitters include push button sensors with the "Brighten/Dim" function, for example.		

Object	Name	Direction	Data width	DP type	Flags
45 (slave 1 – group 1) 55 (slave 2 – group 1) 65 (slave 3 – group 1) 75 (slave 4 – group 1) 85 (slave 5 – group 1) 145 (slave 1 – group 2) 155 (slave 2 – group 2) 165 (slave 3 – group 2) 175 (slave 4 – group 2) 185 (slave 5 – group 2) 245 (slave 1 – group 3) 255 (slave 2 – group 3) 265 (slave 3 – group 3) 275 (slave 4 – group 3) 285 (slave 5 – group 3) 345 (slave 1 – group 4) 355 (slave 2 – group 4) 365 (slave 3 – group 4) 375 (slave 4 – group 4) 385 (slave 5 – group 4) 445 (slave 1 – group 5) 455 (slave 2 – group 5) 465 (slave 3 – group 5) 475 (slave 4 – group 5) 485 (slave 5 – group 5)	Slave 1/2/3/4/5 – Volume control louder/quieter	Write	1 bit	1,007	C-W--

Rubric:	Slave zone control	Data type:	Step
Function:	Group 1/2/3/4/5 – Increase or decrease volume of slave 1/2/3/4/5 by 5%		
Description:	Enables relative volume adjustment (louder/quieter) of the group in increments up to 5% via 1-bit group telegrams: 1 = 5% louder, 0 = 5% quieter.		

Object	Name	Direction	Data width	DP type	Flags
46 (slave 1 – group 1) 56 (slave 2 – group 1) 66 (slave 3 – group 1) 76 (slave 4 – group 1) 86 (slave 5 – group 1) 146 (slave 1 – group 2) 156 (slave 2 – group 2) 166 (slave 3 – group 2) 176 (slave 4 – group 2) 186 (slave 5 – group 2) 246 (slave 1 – group 3) 256 (slave 2 – group 3) 266 (slave 3 – group 3) 276 (slave 4 – group 3) 286 (slave 5 – group 3) 346 (slave 1 – group 4) 356 (slave 2 – group 4) 366 (slave 3 – group 4) 376 (slave 4 – group 4) 386 (slave 5 – group 4) 446 (slave 1 – group 5) 456 (slave 2 – group 5) 466 (slave 3 – group 5) 476 (slave 4 – group 5) 486 (slave 5 – group 5)	Slave 1/2/3/4/5 – Muting	Write	1 bit	1,003	C-W--

Rubric:	Slave zone control	Data type:	Enable
Function:	Group 1/2/3/4/5 – Mutes music playback of slave 1/2/3/4/5		
Description:	Slave muting: Switches the loudspeaker of the slave off (1) or on again (0).		

Object	Name	Direction	Data width	DP type	Flags
47 (slave 1 – group 1) 57 (slave 2 – group 1) 67 (slave 3 – group 1) 77 (slave 4 – group 1) 87 (slave 5 – group 1) 147 (slave 1 – group 2) 157 (slave 2 – group 2) 167 (slave 3 – group 2) 177 (slave 4 – group 2) 187 (slave 5 – group 2) 247 (slave 1 – group 3) 257 (slave 2 – group 3) 267 (slave 3 – group 3) 277 (slave 4 – group 3) 287 (slave 5 – group 3) 347 (slave 1 – group 4) 357 (slave 2 – group 4) 367 (slave 3 – group 4) 377 (slave 4 – group 4) 387 (slave 5 – group 4) 447 (slave 1 – group 5) 457 (slave 2 – group 5) 467 (slave 3 – group 5) 477 (slave 4 – group 5) 487 (slave 5 – group 5)	Slave 1/2/3/4/5 – Muting state	Read	1 bit	1,003	CR-T-

Rubric:	Slave zone control	Data type:	Enable
Function:	Group 1/2/3/4/5 – Indicates whether slave 1/2/3/4/5 is muted		
Description:	Supplies the state of slave muting: 1 = Loudspeaker off, 0 = Loudspeaker on.		

Object	Name	Direction	Data width	DP type	Flags
48 (slave 1 – group 1) 58 (slave 2 – group 1) 68 (slave 3 – group 1) 78 (slave 4 – group 1) 88 (slave 5 – group 1) 148 (slave 1 – group 2) 158 (slave 2 – group 2) 168 (slave 3 – group 2) 178 (slave 4 – group 2) 188 (slave 5 – group 2) 248 (slave 1 – group 3) 258 (slave 2 – group 3) 268 (slave 3 – group 3) 278 (slave 4 – group 3) 288 (slave 5 – group 3) 348 (slave 1 – group 4) 358 (slave 2 – group 4) 368 (slave 3 – group 4) 378 (slave 4 – group 4) 388 (slave 5 – group 4) 448 (slave 1 – group 5) 458 (slave 2 – group 5) 468 (slave 3 – group 5) 478 (slave 4 – group 5) 488 (slave 5 – group 5)	Slave 1/2/3/4/5 – Playback device connected	Read	1 bit	1,002	CR-T-

Rubric:	Connections	Data type:	Boolean
Function:	Group 1/2/3/4/5 – Indicates a functional connection to the playback device of slave 1/2/3/4/5		
Description:	Supplies information on whether the playback device was found on the network. 1 = Found, 0 = Not found		

7 Commissioning

7.1 Operation

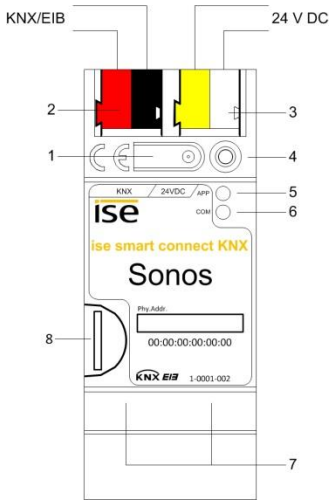


Figure 6: ise smart connect KNX Sonos.

1	Programming button for KNX	Switches to the device in the ETS programming mode or vice versa.
2	KNX connection (twisted pair)	On left: (+ / red) On right: (– / black)
3	Connection Power supply	DC 24...30 V, 2 W (at 24 V) On left: (+ / yellow) On right: (– / white)
4	KNX programming LED (red)	Red: Device is in ETS programming mode Yellow: For start or diagnosis code, see 7.2.1 / 7.2.2
5	LED *APP* (green)	Green: Normal operation Off / Flashing: For start or diagnosis code, see 7.2.1 / 7.2.2
6	LED *COM* (yellow)	Yellow: Normal operation (brief dark phases indicate KNX telegram traffic) Off / Flashing: For start or diagnosis codes, see 7.2.1 / 7.2.2
7	Ethernet connection	LED 10/100 speed (green) On: 100 Mbit/s Off: 10 Mbit/s LED link/ACT (orange) On: Connection to IP network Off: No connection Flashing: Data reception on IP
8	MicroSD card holder	As optional network authorisation (network drive) for audio files for playback by Sonos components Media size: Up to 32 GB microSDHC Format: FAT32

7.2 LED status displays

The device features three status LEDs on the upper housing side and four status LEDs on the network connections.
The LED displays have **different meanings**

- while the device is starting and
- during operation.

7.2.1 LED status display upon device start-up

After the power supply (DC 24 V on the yellow-white connection terminal) is switched on or after a return in voltage occurs, the device indicates its status through the following LED combinations:

LED "APP" (green)	LED "*COM*" (yellow)	Meaning	
○ **Off**	○ Off	No power supply: Please check connections and power supply.	✘
○ **Off**	● Yellow	Device starting up.	✓
● **Green**	○ Off	Error – KNX not connected.	✘
○……● **Green** **Flash slowly**	● Yellow	The application is not yet configured, e.g. not yet loaded with the ETS.	✘
● **Green**	● Yellow	Device booted up and ready for operation.	✓
○……● **Green** **Flash quickly**	○ Off	Error – Please contact support. The firmware cannot be started.	✘
●…○…●…○…●… **Green** ○…●…○…●…○… **Yellow** **Flash slowly in an alternating fashion**		Error – Please contact support. The newly loaded firmware cannot be started. The system is trying to activate the previous firmware (invalid firmware).	✘

7.2.2 LED status display in operation

Once device start-up is complete, the meaning of the LEDs is as follows:

LED "*APP*" (green)	Meaning
Green	Normal operation
Off	Device in start-up procedure or out of operation: Wait until the start-up procedure is complete or check the power supply
Flashes at approx. 1 Hz	Error: Application is not parametrised or not fully parametrised. Check the device parametrisation in the ETS and carry out an application download to the device.
Three slow flashes followed by a 2 s pause	Note: At present, not all configured Sonos devices can be reached. If devices are switched off to save power, an error is not in effect

LED "*COM*" (yellow)	Meaning
Yellow	Normal operation: KNX connection is established, no KNX telegram traffic.
Yellow with brief dark phases	Normal operation: KNX connection is established, KNX telegram traffic.
Off	Error: Connection to KNX is interrupted. Check the bus connection

7.3 Accelerate transfer: Select transfer path *KNX-TP* or *IP*

Programming (transfer from the ETS to the device) occurs in the programming environment of the ETS. An additional KNX data interface is not required for transfer (bus connection via bus connection terminal). The ETS can reach the device from both the IP side and the KNX-TP side.

Due to considerably shorter transfer times, download over the IP side of the device is recommended.

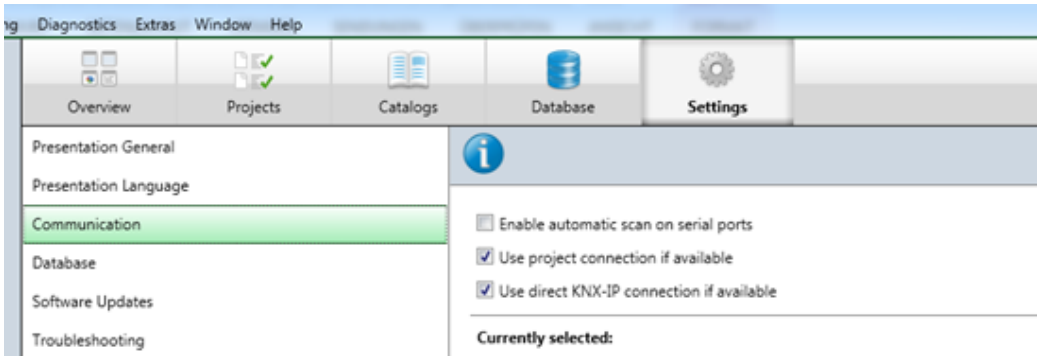


Figure 7: The setting "*Use direct KNX-IP connection if available*" accelerates the transfer from the ETS to the device.

For transfer of the ETS over the IP side, set the setting

☑ ***Use direct KNX-IP connection if available*.**

on the ETS start page, → *Settings* tab → *Communication* entry.

7.4 Programming the physical address of the device

- Ensure that the device and bus voltage are switched on.
- Ensure that the programming LED (4) is not illuminated.
- Briefly press the programming button (1) – the programming LED (4) illuminates red.
- Program physical address using the ETS.

After a successful programming procedure,

- LED (4) will go out.
- The ETS shows the completed transfer with a green marking under *History* in the sidebar (normally at the right-hand window edge).
- The ETS sets the commissioning tick on the device for "Adr" and "Cfg".

You can now note down the physical address on the device.

7.5 Transferring application programs and configuration data

After programming the physical address, the application program, parameter settings and group address connections can be transferred to the device.

A connection to the device can be further established via IP or KNX for this purpose.

- For this purpose, select "*Programming application program*". The download lasts approx. 15 seconds with a direct IP connection or about 2 minutes if using TP.
- After the download, please wait approx. 15 seconds while the device copies the data and installs the application.
- Commissioning is complete.

7.6 Factory reset

The following physical KNX address is factory pre-set: 15.15.255
Following the factory reset, the device behaves as in the state of delivery. The device is unconfigured. This can be recognized after starting up the device from the slowly flashing green APP LED (5).

7.6.1 Using the programming button on the device

The device can be reset to the factory settings through a sequence during start-up.

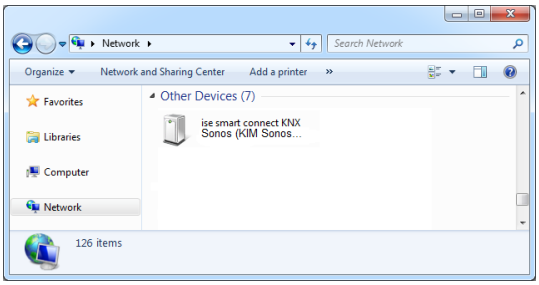
- Make sure that the device is switched off.
- Press and hold programming button (1) and switch on the device.
- Press and hold programming button (1) until the programming LED (4), the RUN LED (5) and the KNX LED (6) flash slowly simultaneously.
- Briefly release the programming button (1), then press and hold it again until the programming LED (4), the RUN LED (5) and the KNX LED (6) flash quickly simultaneously.
- The factory reset is being carried out; release programming button.
- The device need not be restarted following a factory reset.

The factory reset can be cancelled at any time by interrupting the sequence.

7.6.2 Using the website of the device

The factory reset can also be triggered from the website of the device.

- Call up the website of the device. For this purpose, double-click the icon of the device in the *Other Devices* area in the network environment.



- Alternatively, you can also enter the IP address of the device in your browser.
- Select *Device Status* in the upper menu bar on the website.
- Select *Factory Reset* in the upper menu bar on the status page.
- Confirm the factory reset when the security prompt appears.
- The next displayed page, *Factory Reset*, indicates that the factory reset is being carried out. As soon as this is complete, the start page is loaded again.

7.7 Configuration of playlists using the website

With the ise smart connect KNX Sonos, you can save some default settings for each master-slave group. This enables direct selection of potential playback sources without always having to search through the entire list of all available Sonos sources.

The selection is made using the website of the device. Calling up the website is described in Section 7.6.2 – Using the website of the device.

The start page of the device always shows the configuration of the playlist for the first group.

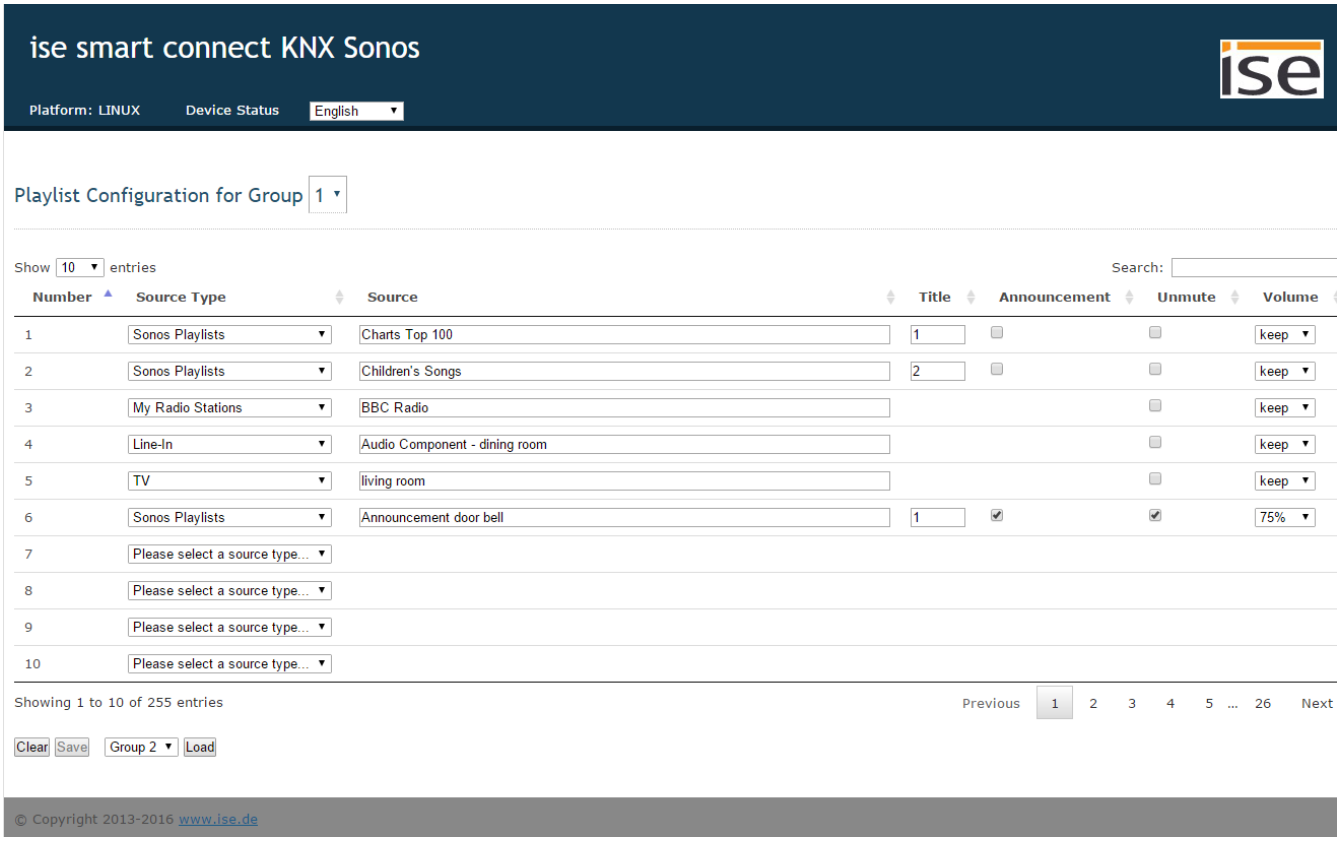


Figure 8: Device website for configuration of the playlist.
Initial display with the available Sonos sources (see 7.7.1).

The start page is divided into two sections. The header with a blue background contains the device name and menu bar. The device name is linked to the start page on each website. The menu bar contains a link to the status page (*Device Status*), which serves only for diagnostic purposes and language selection for the configuration page.

The next section of the page begins with the header line, which contains the configuration for the first group as the starting value. Another group can be selected at the end of the header line via the selection list. The current configuration of the music sources for the selected group is made for the selected group in the form of a table. The operating elements for deleting, saving and loading a configuration complete the page.

7.7.1 Initial display

If the device is properly configured and the master of the first ise smart connect KNX Sonos group is accessible, the start page displays the available sources. The device loads the sources from the *Sonos playlists* and *My Radio Stations* configured with the Sonos software, and the existing external source types is applicable. Here, all playlists are displayed first, followed by all stations, in alphabetical order.

7.7.2 Saving the configuration

The button to *Save* the configuration is only active if the displayed configuration of the respective group has not yet been saved.
This is also the initial state of the first commissioning of each group. This means that, for example, the positions of the radio stations can change if a *Sonos Playlist* is added with the Sonos software. Only saving the configuration ensures that a certain music source can always be reached using the issued number.

7.7.3 Deleting and creating a separate list

The *Clear* button clears the current list. If this cleared list is saved, the page again displays the available sources after reloading.
To create a user-defined list, a source type can be selected for each of the available 255 storage locations. Possible source types are *Sonos playlists*, *My Radio Stations*, and*Line In*[1] and *TV*[2]. The name of the source can then be entered under Source. If the source exists in the Sonos application, it is displayed in the selection list. The selection list is limited to 2000 entries on the display. A source not displayed in the selection list can easily be assigned by entering its name, however. Naturally, it is possible to build up an internal system (e.g. through the use of number ranges) by "omitting" individual numbers.

Further options are available per entry: Setting the starting track number (only with *Sonos playlists*), announcement mode, un-muting and setting group volume level. If a starting track number (Track) has been selected, this track will be played when the source is played.

The announcement mode is only available for Sonos playlists. It restores the previous playback after the announced Sonos playlist has ended. If the random playback or repeat mode is activated, the announcement deactivates these modes for the duration of the announcement. Announcements made up of several track will therefore always be played back in the normal order and end after the last track. When the announcement is interrupted by selecting a different source or by stopping, the ise smart connect KNX Sonos does not restore the mode before the announcement. Pausing the announcement does, however, activate immediate return to the previous playback mode. The announcement mode does not have any influence on the group creation and only functions like all sources when the player configured as master is not currently being used as a slave.

If the checkbox “*never mute*” is active, the ise smart connect KNX Sonos will cancel a possible muting when this source entry is selected via KNX. After an announcement, the muting will be restored if it was active [3].

If a group volume is selected in percent in the selection list, it will be set in the Sonos group when the source is played. After an announcement, the original volume is restored[3].

To delete a default setting, it is sufficient to set the source type of the corresponding number to the *Please select a source type* placeholder and save the configuration.

[1] Only available with Sonos CONNECT / CONNECT AMP

[2] Only available with Sonos PLAYBAR

[3] The restoration of the muting and volume after an announcement is currently only possible for the group master.

Note: The groups can also be configured without a connection to the Sonos system to be used later on. It is thus possible for the end user to do this before using the ise smart connect KNX Sonos. The requirement here, however, is that the sources to be saved with the respective number be entered with their future name (using the proper notation used in the Sonos system). The naming conventions of the Sonos system (e.g. number of characters) are to be observed here. Please also note that when you are using the same source in multiple slots, skipping to the next slot may not start playback of the expected source, for example. The reason for this is that the slot number is determined from the source name, which is no longer unique in this case. This is why we recommend using a certain source only once in the configuration in a master-slave group.

7.7.4 Loading a different configuration

If the configuration of two ise smart connect KNX Sonos groups deviates only minimally, the configuration for group 1 can be set first, for example. Group 1 is now selected on the configuration page for group 2 in the selection list next to the *Load* button, and *Load* is then pressed. The configuration of group 1 is copied as the result. This can now be changed and set with *Save*.

7.7.5 Possible problems

If a source name is written incorrectly or if the source is removed with a Sonos application, the source can still be selected, but the ise smart connect KNX Sonos device reports error *4: playlist* via the corresponding KNX group object at play time in this case, however.

An empty position can also be selected, which leads to KNX error message *5: empty slot*.

If the ise smart connect KNX Sonos device was just restarted, the start page does not display a configuration, but rather the following messages: *The SonosApp is not active. Please use the ETS to configure the device* or *The SonosApp is not active.* This is normal during the initialisation phase – After about 2 minutes, the device should display the correct state.

If the Sonos system has significantly more than 300 saved Sonos playlists or radio stations, the playback commands may not work on the KNX. In this case, there are also no suggestions for source names on the website. If possible, delete any lists or radio stations you no longer require or contact support@ise.de with details of the amount of playlists and radio stations you use.
The *TV* source type can only be played if a Sonos PLAYBAR is in the group. If the source is played and the PLAYBAR is not the master of the group, it automatically becomes the master. This leads to an inconsistency concerning the KNX group parametrisation. Please therefore select a PLAYBAR as master in the KNX group parametrisation if you wish to use its TV input.

7.8 Using the microSD card for music playback

The microSD card holder of the device can accept memory cards with a capacity of up to 32 GB. The FAT32 file system is supported, and authorisation is read-only.

As soon as a microSD card is inserted into the ise smart connect KNX Sonos, the contents can be read via the Windows network authorisation. For this purpose, enter the IP address of the device, followed by the directory data, e.g. *\\192.168.137.109\data*, in the Windows File Manager.

To access the authorisation with the Sonos devices, please use the original Sonos application under menu item *Manage→Music library settings*. Enter the URL above under the *Folder* item there without specifying the user name and password.

The music files of the microSD card are now available under the *Music Library* item of the Sonos application. If you have saved *MP3* playlists on the microSD card, you can find them under *Music Library→Imported playlists*. To use the MP3 playlists with the ise smart connect KNX Sonos, they must first be converted into a *Sonos playlist* with the Sonos application.

If you remove the microSD card later on to load new music, you may need to update the music library in the Sonos application after reinserting the microSD card.

8 Technical data

KNX medium	TP
Commissioning mode	S mode (ETS)
KNX supply	DC 21 to 30 V SELV
KNX connection	Bus connection terminal
External supply	
Voltage	DC 24 to 30 V ±10%
Connection	Bus connection terminal, preferably yellow (+)/white (–)
Power consumption	Typically 2 W (at DC 24 V, two Ethernet lines connected)
IP communication	Ethernet 10/100 BaseT (10/100 Mbit/s)
IP connection	2 x RJ45
Supported protocols	ARP, ICMP, IGMP, UDP/IP, DHCP, AutoIP KNXnet/IP as per KNX system specification: Core, Device Management
microSD card	Max. 32 GB microSDHC
Ambient temperature	0 °C to +45 °C
Storage temperature	-25 °C to +70 °C
Installation width	36 mm (2 HP)
Installation height	90 mm
Installation depth	74 mm
Protection type	IP20 (compliant with EN60529)
Protection class	III (compliant with IEC 61140)
Test marks	KNX, CE

9 Frequently asked questions (FAQ)

- **How do I find out the IP address of my ise smart connect KNX Sonos?**
  Please read about this in Chapter 7.6.2 – Using the website of the device.

- **How do I find the IP address of a Sonos device?**
  You can read out the IP address using the official Sonos application. A description can be found in Chapter 6.4.3 – Determining the IP addresses of the Sonos devices on the data network.

- **Can I still operate my Sonos devices with other apps, e.g. from my iPhone?**
  Yes. Use of the ise smart connect KNX Sonos does not limit the operation of your Sonos devices. Changes, for example those you make using your smartphone, are forwarded to the KNX accordingly wherever possible.

- **Which actions of the Sonos software cannot be simulated with KNX or are not understood by KNX?**
  - Dynamic group creation with the Sonos software can only be understood to the degree to which it can be simulated in the parametrisation of the master-slave groups.
  - Continuation of streaming after disconnection of a group is only possible for the previous slaves using separate logic. Normally, these rooms are “muted” (see Chapter 2.1 – Door contact enables dynamic group creation).

- **How can I rename a playlist?**
  For this purpose, use your Sonos software (e.g. your app). Please note that this renaming does not automatically lead to updating of your KNX controller. For this reason, it is imperative that you select the renamed playlist as described in Chapter 7.7 – Configuration of playlists using the website and replace the previous name under the same number with it.

- **Why do my KNX operating devices not generate the normal response of my Sonos devices?**
  If the Sonos devices can be operated without any problems using the official Sonos application, please check the LED display of your ise smart connect KNX Sonos on the device to rule out a fault (see Chapter 7.2.2 – LED status display in operation).

- **Why can my Sonos device no longer be operated via KNX after a period of time?**
  The ise smart connect KNX Sonos uses fixed IP addresses for the Sonos devices. If you use DHCP for the assignment of the IP addresses for your Sonos devices, please couple the issued IP addresses to the MAC address of the respective Sonos device.

- **Why can I not select my playlist with KNX, even though it works with my Sonos app?**
  Check whether the names of the playlist are identical with the ise smart connect KNX Sonos and in the Sonos software (e.g. your app). Deviations can arise from renaming or a faulty entry. Information on this can be found in Chapter 7.7 – Configuration of playlists using the website.

- **How can I integrate Spotify and Napster into my system?**
  Create corresponding playlists with your Sonos software. Integration into KNX is described in Chapter 7.7 – Configuration of playlists using the website.

- **Why doesn’t my Radio/Line-In start again on a Play after a Stopp?**
  The group object “Stopp” does not only stops the playback but also unselects the current source. To preserve the current source please use the group object “Pause”.

- **Can I address sources other than *Sonos Playlists* and *My Radio Stations* via KNX?**
  Yes, in addition to *Sonos playlists* and *My Radio Stations*, *LineIn* inputs in the Sonos CONNECT series and the *TV* input in the Sonos PLAYBAR can currently be controlled via KNX. Music files of the microSD card are supported via *Sonos Playlists*.

- **Can a Sonos device be multiple masters or slaves?**
  Yes. In fact, this is required for dynamic group creation with KNX. Relevant examples can be found in Chapter 4 – Dynamic group creation.

- **Does a microSD card have to be inserted in the ise smart connect KNX Sonos?**
  No. The SD card is optional and enables streaming of the audio files saved on it. More information on this can be found in Chapter 7.8 – Using the microSD card for music playback.

- **Why doesn't the website work?**
  - Is the software restarting?
    After the ETS application program is downloaded, it can take up to 3 minutes until the website is available again. Try to reload the page after a few minutes.
  - Is Javascript activated, and are cookies allowed?
    The playlist website requires Javascript and cookies. Allow the execution of Javascript and the saving of cookies in the options of your web browser if necessary.
  - Are you using an up-to-date, supported web browser?
    The answer to the next question contains a list of browsers which will always work.

- **Which web browsers are supported ise smart connect KNX Sonos?**
  The website was successfully tested with the following browsers in Windows 7:

  - Mozilla Firefox 31
  - Google Chrome 36
  - Internet Explorer 11

- **What can I do if no playlists can be found or played?**
  In rare cases, the ise smart connect KNX Sonos may not be able to call up the playlists of your Sonos devices. This means that the playlist website does not offer playlists for selection. The selection of playlists also does not work via KNX.

  Have a Sonos device known to your ise smart connect KNX Sonos play a playlist with an official Sonos application. In most cases, the website will be able to offer you all the playlists as expected after being reloaded. Playing via KNX will now work as well.

  We are working on a better solution to this problem which does not require the user to take any action.

- **Why does it take a very long time for a radio station to be played via KNX?**
  With some radio stations, it takes a very long time until a connection with the radio server is established. This has nothing to do with the ise smart connect KNX Sonos. You can check this behaviour with a direct selection of the radio station from the official Sonos application. Should the radio station not work at all, the URL may be invalid. If available, you can add a valid or updated URL by selecting the *Manage→Add Radio Station* menu item in the Sonos application.
- **Are there software updates for my ise smart connect KNX Sonos device?**
  Available software updates can be found on the firmware website. Please visit www.ise.de for more information.

- **Is the website of my ise smart connect KNX Sonos accessible using an ise smart connect Secure?**
  Yes, these products from ise are compatible with one another.

ise smart connect Secure is a remote access solution which enables access to local device websites from any location as long as an Internet connection is available.

- **Why does the ETS report the error that a protected area cannot be written to when downloading the application program?**
  Please ensure that your ETS version is up to date. The ise smart connect KNX Sonos requires ETS version 4.2 or 5.0.2 or higher.

- **Why can't I restart web radio or Line-In with *Play* after a *Stop*?**
  The group object *Stop* deselects the current source entirely. To stop playback while keeping the source selected, use *Pause*.

10 Troubleshooting and support

If you have a problem with your ise smart connect KNX Sonos and require support, please send an e-mail with a detailed error description and the log file created after the error occurred to support@ise.de. For information on how to download the log files from your ise smart connect KNX Sonos, please refer to Chapter 10.1 – Downloading log files if a problem occurs.

10.1 Downloading log files if a problem occurs

If a problem occurs, the log files are required for providing support. They can be downloaded via the website of the device (see Chapter 7.6.2). To do so, proceed as follows:

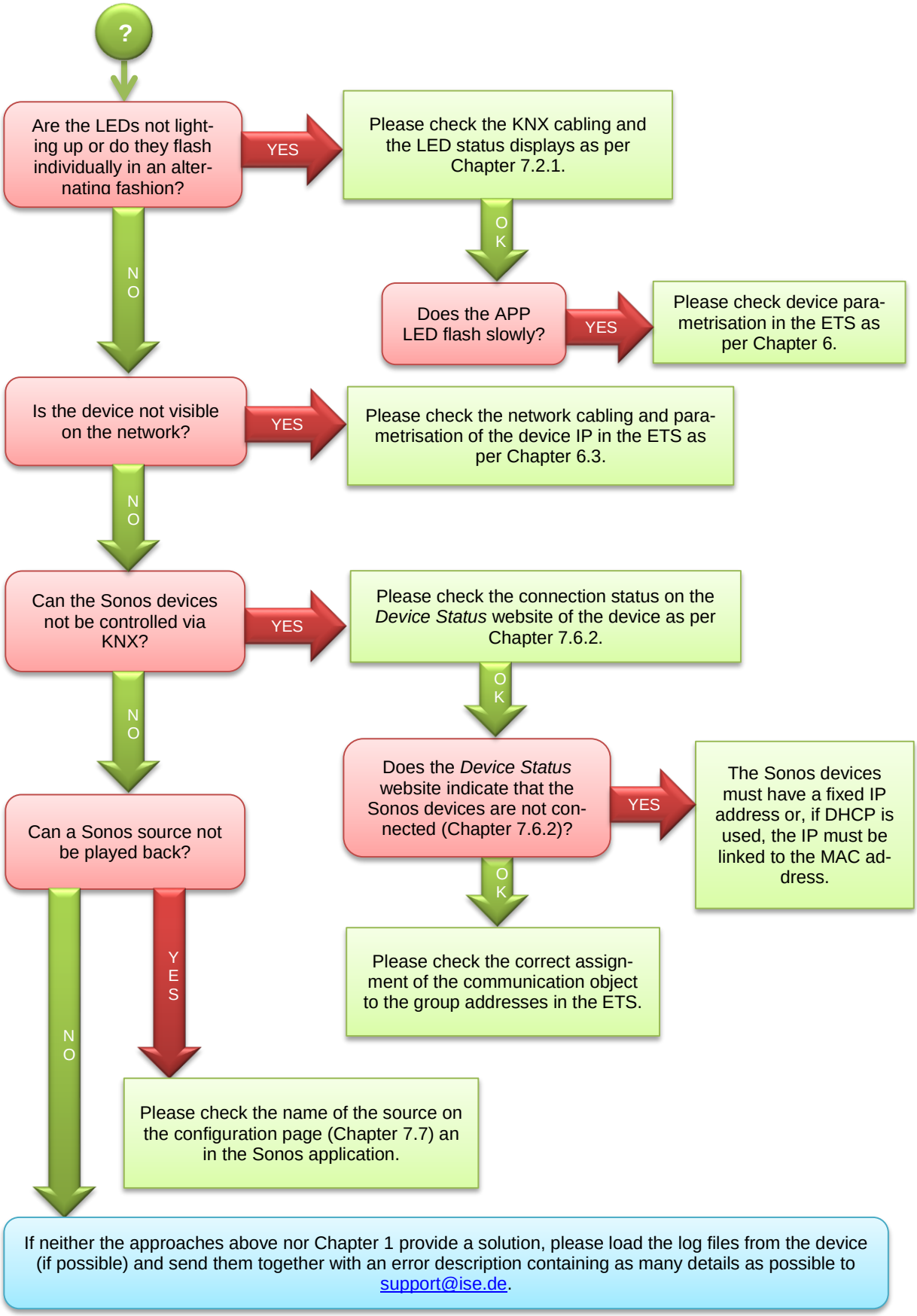
- Call up the website of the device. For this purpose, double-click the icon of the device in the *Multimedia* area in the network environment.
- Select *Device Status* in the upper menu bar on the website.
- Select *Download Log File* in the upper menu bar on the status page.
- The page which opens begins downloading the log files. If this does not occur, the provided link can be used.

10.2 Status page of the ise smart connect KNX Sonos

You can call up the device status on the website of the ise smart connect KNX Sonos (see Chapter 7.6.2). Among other things, it displays the installed software version and the configuration and connection status of the Sonos devices in the ise smart connect KNX Sonos. Should an error occur, please send us a screen shot of the status page.

10.3 The ise smart connect KNX Sonos does not work

The following error tree is intended to solve the most common problems. Should this be unsuccessful, please contact us at support@ise.de.



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Version 2, June 1991

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