C4-KNX-SUAC

SUG/U1.41 Split Unit Gateway, FM

Product Manual

Control4

C4-KNX-SUAC Split Unit Gateway, FM

Contents

This manual describes the function and configuration of the *Split Unit Gateway, FM.*

Split Unit Gateway, FM, SKU: C4-KNX-SUAC.
KNXPROD filename: SUG/U1.41, download: https://ctrl4.co/knx-suac
Use with the Control4® KNX Tool (download at https://ctrl4.co/knx-tool).

Subject to change.

Exclusion of liability:
Although the contents of this document have been checked to ensure that they are consistent with the hardware and software, deviations cannot be completely excluded.
We therefore cannot accept liability. Any necessary corrections will be incorporated in new versions of the manual.

Please inform us of any suggested improvements.

C4-KNX-SUAC Split Unit Gateway, FM

1 General

This manual provides detailed technical information concerning the Split Unit Gateway, FM, *SKU: C4-KNX-SUAC (KNXPROD File Name: SUG/U1.41)*.

KNXPROD filename: SUG/U1.41, download: https://ctrl4.co/knx-suac.
Use with the Control4® KNX Tool (download at https://ctrl4.co/knx-tool).

Split units are HVAC devices which are usually operated by an infrared remote control. The Split Unit Gateway is installed near the split unit and the transmitter of the supplied cable is bonded to the receiver of the unit itself. This makes it possible to control the split unit via KNX group commands. The Split Unit Gateway allows users to integrate the split unit in a KNX system for convenient, energy efficient control.

1.1 Using the product manual

This manual provides detailed technical information on the function, installation and programming of the Control4® KNX device. Explanations on how to use it are accompanied by examples.

This manual is divided into the following chapters:

Chapter 1	General
Chapter 2	Device technology
Chapter 3	Commissioning
Chapter A	Appendix

1.1.1 Notes

Notes and safety instructions are represented as follows in this manual:

Note
Tips for usage and operation

Examples
Application examples, installation examples, programming examples

Important
These safety instructions are used as soon as there is danger of a malfunction without risk of damage or injury.

Caution
These safety instructions are used as soon as there is danger of a malfunction without risk of damage or injury.

 **Danger**
These safety instructions are used if there is a danger to life and limb with inappropriate use.

 **Danger**
These safety instructions are used if there is an extreme danger to life with inappropriate use.

1.2 Overview of product and functions

The Split Unit Gateway forms the interface between the KNX system and climate control equipment from a wide range of manufacturers, also referred to as split units. The device converts KNX telegrams to infrared commands and sends them to the split unit.

The Split Unit Gateway is installed near the split unit and the transmitter of the supplied cable is bonded to the receiver of the unit itself. Thereafter, the climate control equipment no longer receives commands from a remote control but instead can be operated via any KNX sensors or via a visual display.

The split unit's functions can therefore be operated via KNX using any operating element. The available functions are as follows:

- On/Off
- Specify setpoint temperature including parametrizable setpoint temperature limits
- Set operating mode (Automatic, Heating, Cooling, Ventilation, Drying)
- Fan speed control
- Horizontal and vertical swing
- Activate Silent Mode

In addition, the following functions can be parametrized via KNX:

- Forced operation
- Window contact
- Presence
- Scene
- Boost function

1.2.1 Integration in the Control4® KNX Tool

The device possesses an interface to the Control4® KNX Tool.

The Control4® KNX Tool can be used to read out data and test functions on the connected device.

The Control4® KNX Tool can be downloaded free from (https://ctrl4.co/knx-tool).

ETS is not required for the Control4® KNX Tool tool.

Note
Not all of the device's functions can be operated using the Control4® KNX Tool. Priorities (Forced operation and Window contact) and the *Presence* function can only be activated/deactivated via the bus. If a priority is active, the device cannot be operated with the Control4® KNX Tool. If the connection drops between the device and the Control4® KNX Tool, the device maintains the last state that was set. In other words, commands from the Control4® KNX Tool and KNX telegrams have equal priority (exception: priorities).

C4-KNX-SUAC Split Unit Gateway, FM

2 Device technology

C4-KNX-SUAC

KNXPROD File Name: SUG/U1.41

The Split Unit Gateway converts KNX commands to infrared commands which are used to manage climate control equipment (split units).

The device is installed near the split unit in a flush-mounted or wall-mounted box. The transmission diode in the supplied cable is bonded to the receiver of the split unit itself.

The device is supplied with power via the KNX bus voltage; no additional power supply is required.

2.1 Technical data

Power supply	Supply voltage	Via Control4 ® KNX (21...31 V DC)
	Power loss P	Max. 0.4 W
	Current consumption	Max. 12 mA
Connections	KNX	Bus connection terminal, screwless
	IR cable connection socket	Plug-in terminal
	IR cable	Length 2 m
Operating and display elements	Red LED and button	For assignment of the physical address
Protection degree	IP 20 in the installed state	Compliant to EN 60 529
Protection class	III	To EN 61 140
Isolation category	Overvoltage category	III according to EN 60 664-1
	Pollution degree	2 to EN 60 664-1
KNX safety extra low voltage	SELV 30 V DC	
Temperature range	Operation	-5 °C…+45 °C
	Storage	-25…+55°C
	Transport	-25…+70 °C
Ambient conditions	Maximum air humidity	95 %, no condensation allowed
	Atmospheric pressure	Atmosphere up to 2,000 m
Design	Dimensions	39 x 40 x 12 mm (H x W x D)
Installation	In a wall box	Flush-mounted or wall-mounted
Mounting position	any	
Weight	0.02 kg	
Housing, color	Plastic, halogen free, gray	
Approvals	KNX to EN 50 090-1, -2	
CE marking	In accordance with the EMC directive and low voltage directive	

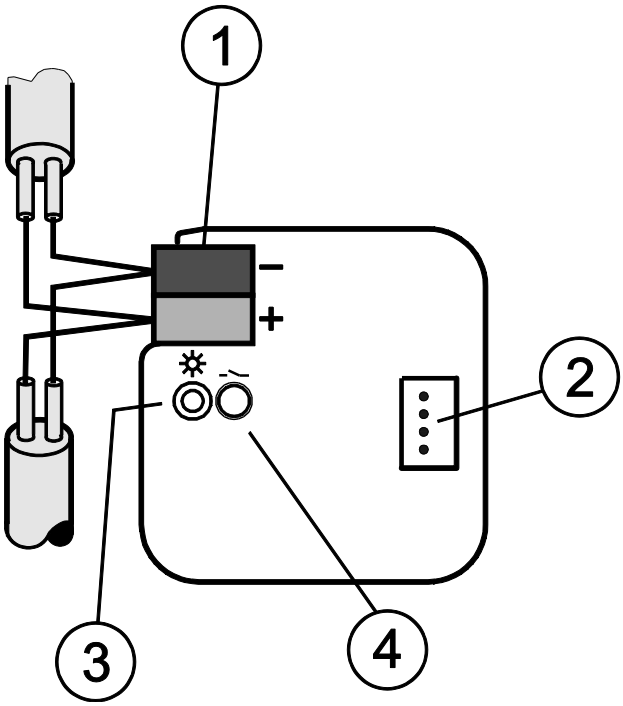
C4-KNX-SUAC Split Unit Gateway, FM

Device type	Application	Maximum number of group objects	Maximum number of group addresses	Maximum number of assignments
C4-KNX-SUAC *KNXPROD File Name: SUG/U1.41*	Split Unit Gateway/…*	30	255	255

* … = Current version number of the application. **Please refer to the software information on our website for this purpose.**

Note
The Engineering Tool Software, ETS, version 5.6.6 or later, and the current device application are required for programming. The current application is available for download at https://ctrl4.co/knx-suac along with the corresponding software information. After import into ETS it appears in the *Catalogs* window under *Manufacturers/Control4/Heating Ventilation Air conditioning.* The device does not support the locking function of a KNX device in ETS. Using a *BCU code* to inhibit access to all the project devices has no effect on this device. Data can still be read and programmed.

2.2 Connection diagram



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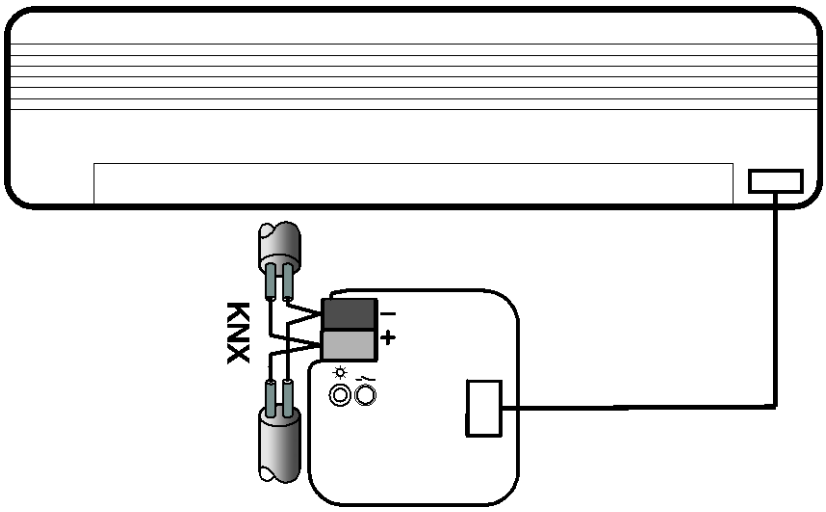
1 Bus connection terminal

2 IR cable connection socket

3 *Programming* LED

4 *Programming* button



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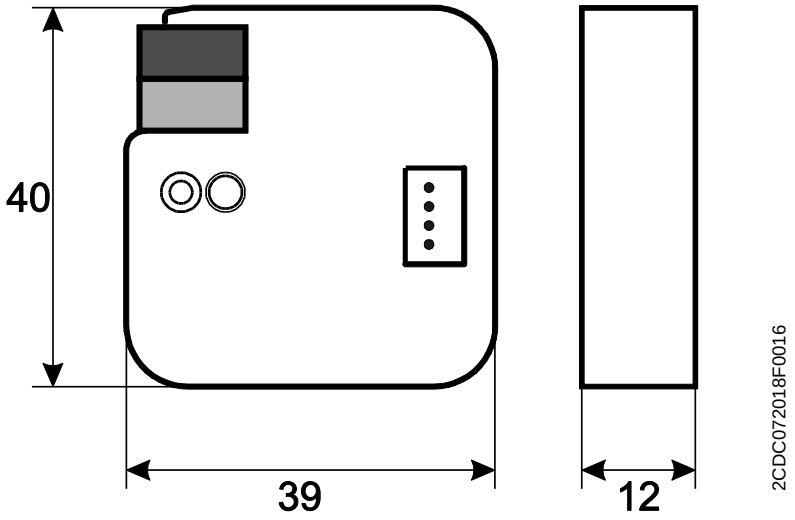
2.3 Dimension drawing



2.4 Mounting and installation

The device is suitable for installation in a flush-mounted or wall-mounted box.

The installation position can be selected as required.

The connection to the bus is implemented using the supplied bus connection terminal. The terminal assignment is located on the housing.

The device is ready for operation after connection to the bus voltage.

The device must be accessible for operation, testing, visual inspection, maintenance and repair in compliance with DIN VDE 0100-520.

Instructions for installing the supplied infrared cable are provided in the installation and operating manual.

Commissioning requirement

In order to commission the device, a PC with ETS (5.6.6 or higher), as well as a connection to the KNX bus,
e.g. via a KNX interface, is required.

The device is ready for operation after the bus voltage is applied. No auxiliary voltage is required.

Important
The maximum permissible current of a KNX line must not be exceeded. During planning and installation ensure that the KNX line is correctly dimensioned. The device features a maximum current consumption of 12 mA (Fan-In 1).

Mounting and commissioning may only be carried out by electrical specialists. The applicable standards, directives, regulations and specifications for the country in question must be observed when planning and setting up electrical installations and security systems for intrusion and fire detection.

- Protect the device from damp, dirt and damage during transport, storage and operation.
- Only operate the device within the specified technical data!
- The IR cable must be installed at least 6 mm away from 230 V power sources.
- The IR cable must not be kinked or strained.

Supplied state

The device is supplied with the physical address 15.15.255. The application is pre-installed. Hence, only group addresses and parameters need to be loaded during commissioning.

The complete application can be reloaded if required. Downloads may take longer after a change of application or a discharge.

Physical address allocation

The assignment and programming of the physical address are carried out in ETS (user version 5.6.6 or higher).

The device features a *Programming* button for assignment of the physical address. The red *Programming* LED ● lights up after the button has been pressed. It goes off as soon as ETS has assigned the physical address or the *Programming* button is pressed again.

Download response

Because of the complexity of the device, the progress bar for the download may take up to 90 seconds to appear depending on the PC used.

In certain cases the device may be inaccessible for up to 10 seconds after a download.

Cleaning

The voltage supply to the device must be switched off before cleaning. If devices become dirty, they can be cleaned using a dry cloth or a cloth dampened with a soapy solution. Never use corrosive agents or solutions.

Maintenance

The device is maintenance-free. In the event of damage (e.g. during transport and/or storage), do not carry out any repairs.

3 Commissioning

3.1 Overview

The *Split Unit Gateway/…* application is available for the Split Unit Gateway, FM, *SKU: C4-KNX-SUAC (KNXPROD File Name: SUG/U1.41, Download:* https://ctrl4.co/knx-suac).

Programming requires ETS 5.6.6 (or higher).

In addition to the ETS application you will require the "SUG/U 1.41" app for commissioning; this can be obtained free from the KNX Online Shop.

For use of the Control4® KNX Tool, see: Integration in the Control4® KNX Tool, p. 6.

The Split Unit Gateway forms the interface between the KNX system and climate control equipment from a wide range of manufacturers, also referred to as split units. The device converts KNX telegrams to infrared commands and sends them to the split unit. The split unit can therefore be operated via KNX using any operating element.

The following functions can be sent direct to the split unit:

- On/Off
  - Switches the split unit on or off. You can also parametrize a switching off delay.
- Specify setpoint temperature including parametrizable setpoint temperature limits
  - The setpoint is sent to the split unit. It is then regulated by the split unit itself.
  - The setpoint temperature can be sent direct (2 byte value) and/or regulated up/down by 1 bit.
- Set operating mode (Automatic, Heating, Cooling, Ventilation, Drying)
  - These are the standard operating modes for most split units.
- Fan speed control
  - Fan speeds can be controlled by a 1-byte value (with different codes) or regulated up/down by 1 bit.
- Horizontal and vertical swing
  - Slat movement can be activated/deactivated on many split units.
- Activate Silent Mode
  - Lots of new split units support this function. Activating this function reduces the output of the split unit's external unit. This reduces noise, e.g. at night.

The split unit's behavior can also be parametrized for a variety of events:

- Forced operation
  - Forced operation has the highest priority. When Forced operation is active, no other commands are executed.
- Window contact
  - When Window contact is activated, the split unit switches off after a (optional) delay.
- Presence
  - Presence = 0 or 1 behaviour can be parametrized.
- Scene

Please note:

Different split units sometimes have a different range of functions.

- Not all functions are available on every split unit. In other words, when parametrizing a unit using ETS 5.6.6 (or higher), you need to check whether it actually supports a particular function. Certain functions that are available in the ETS application (e.g. Silent Mode) may not be supported by the split unit. This in turn means that a group telegram to this object will have no effect.
- Not all split units have exactly 3 fan speeds. If a split unit has more than 3 fan speeds, only 3 speeds are mapped to Low/Med/High in the speeds available in ETS.
  For example: if a split unit has 5 fan speeds, speeds 1/3/5 are mapped to Low//Med/High.
- During parametrization you need to select the split unit manufacturer and the remote control type in ETS before performing the ETS download. To do this you will need the "SUG/U 1.41" ETS app and the Control4® KNX tool.

  Download information:

  Split Unit Gateway, KNXPROD filename: SUG/U1.41, download: https://ctrl4.co/knx-suac
  Control4® KNX Tool (download: https://ctrl4.co/knx-tool).

- The app also displays the range of functions on the split unit and, if applicable, which ones are mapped.
- Communication with the split unit is unidirectional. This means that the Split Unit Gateway sends commands to the split unit, but receives no status feedback from it. So if the split unit is being operated in parallel with a remote control, the (status) state of the gateway may differ from the actual state of the split unit. The same applies if the split unit is not ready to receive. If applicable, you first need to send a command via KNX to re-synchronize the status values.

The device is a flush-mounted device for installation in a flush-mounted box. It connects to the KNX bus via bus connection terminals. The device does not require auxiliary voltage. Physical address assignment and parametrization are carried out with the ETS Engineering Tool Software. (Use ETS 5.6.6 or higher).

3.2 Parameters

The ETS Engineering Tool Software is used to parametrize the device.
Use ETS 5.6.6 or higher.

The current application is available for download at https://ctrl4.co/knx-suac.
After import into ETS it appears in the Catalogs window under *Manufacturers/Control4/Heating Ventilation Air conditioning*.

In addition to the ETS application you will require the "SUG/U 1.41" app for commissioning.
Download information:

Split Unit Gateway, KNXPROD filename: SUG/U1.41, download: https://ctrl4.co/knx-suac

Control4® KNX Tool (download: https://ctrl4.co/knx-tool).

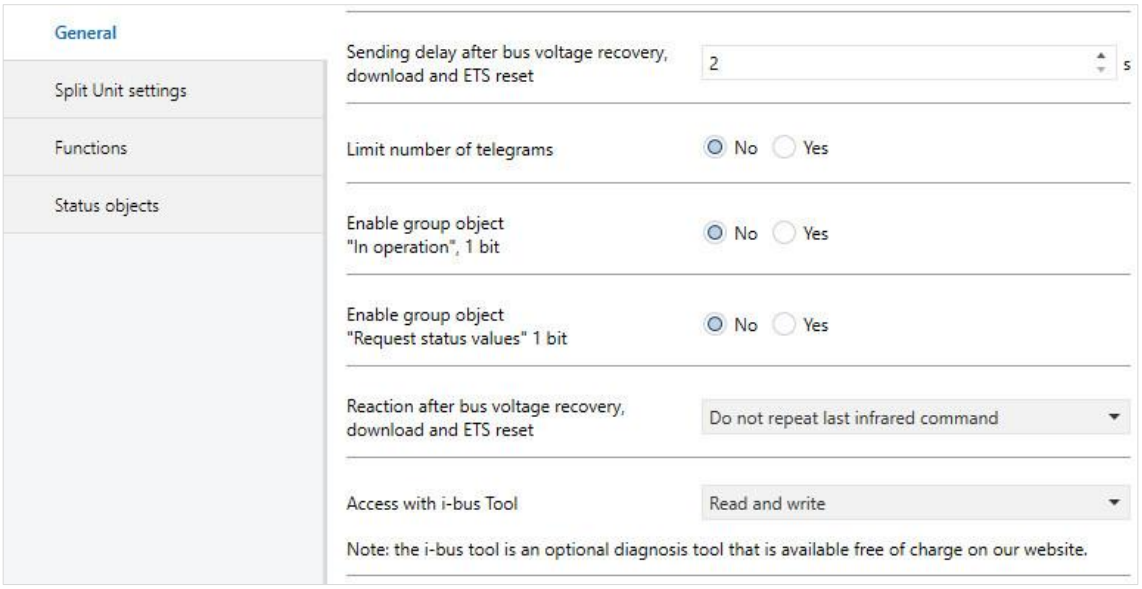
The following chapters describe the device parameters using the parameter windows. Parameter windows are structured dynamically so that further parameters are enabled depending on the parametrization and the function.

The default values of the parameters are underlined, e.g.:

Options: Yes
No

3.2.1 *General* parameter window

Setting top-level parameters:



Sending delay after bus voltage recovery, download and ETS reset

Options: 2…255 s

During the sending and switching delay, telegrams are only received. However, the telegrams are not processed and no commands are sent on the bus or to the split unit.

After the sending and switching delay time, telegrams are sent on the bus and the state of the split unit is set according to the parametrization or group object values.

An initialization time of about two seconds is included in the delay time. The initialization time is the time that the processor requires before it is ready to function.

How does the device react on bus voltage recovery?

After bus voltage recovery, the device always waits for the sending and switching delay time to expire before sending telegrams on the bus.

Limit number of telegrams

Options: No
Yes

This parameter limits the device-generated bus load. This limit relates to all telegrams sent by the device.

- *Yes:*

  Dependent parameters:

  Maximum number of sent telegrams

  Options: 1…20…255

  In period

  Options: 50 ms/100 ms…1 s…30 s/1 min

  This parameter defines the number of telegrams sent by the device within a certain period of time. The telegrams are sent as quickly as possible at the start of a period.

Note
The device counts the number of telegrams sent within the parametrized period. As soon as the maximum number of sent telegrams is reached, no further telegrams are sent on the KNX until the end of the period. A new period commences at the end of the previous period. The telegram counter is reset to zero, and sending of telegrams is allowed again. The current group object value at the time of sending is always sent. The first period (break time) is not precisely predefined. It can be anywhere between zero seconds and the parametrized time. The subsequent sending times correspond with the parametrized time.

Example
Maximum number of sent telegrams = 5, period = 5 s. 20 telegrams are ready to send. The device immediately sends 5 telegrams. The next 5 telegrams are sent after a maximum of 5 seconds. From this point, a further 5 telegrams are sent via KNX every 5 seconds.

Enable group object
"In operation", 1 bit

Options: No
Yes

- *Yes*: Enables the 1-bit group object *In operation*.

  Dependent parameters:

  Sending

  Options: Value 0
  Value 1

  Sending cycle time

  Options: 1…60…65,535 s

  The time interval at which the *In operation* group object cyclically sends a telegram is set here.

Note
After bus voltage recovery, the group object sends its value after the set sending and switching delay time.

Enable group object
"Request status values" 1 bit

Options: No
Yes

All status messages can be requested via this group object, provided they have been parametrized with the option *After a change or request*.

- *Yes*: Enables the 1-bit group object *Request status values*.

  Dependent parameter:

  Request with object value

  Options: 0
  1
  0 or 1

  - *0*: Sending status messages is requested with the value 0.
  - *1*: Sending status messages is requested with the value 1.
  - *0 or 1:* Sending status messages is requested with the values 0 or 1.

Reaction after bus voltage recovery, download and ETS reset

Options: Do not repeat last infrared command
Repeat last infrared command
User-defined

- *Do not repeat last infrared command*: The last command sent before bus voltage failure is not resent to the split unit. If the split unit was operated with a remote control during the bus voltage failure, it is possible (until the next command via KNX) that the status of the split unit will not match the KNX status.
- *Repeat last infrared command*: The last command sent before bus voltage failure is resent to the split unit. This ensures that the split unit is restored to the required state in the event that the unit was operated with a remote control during bus voltage failure.
- *User-defined:* The reaction can be individually parametrized for each function. (On/Off, Setpoint temperature, Operation mode, Fan speed, Swing, Silent Mode).

  Additional parameters will appear accordingly.

Access with Control4® KNX Tool

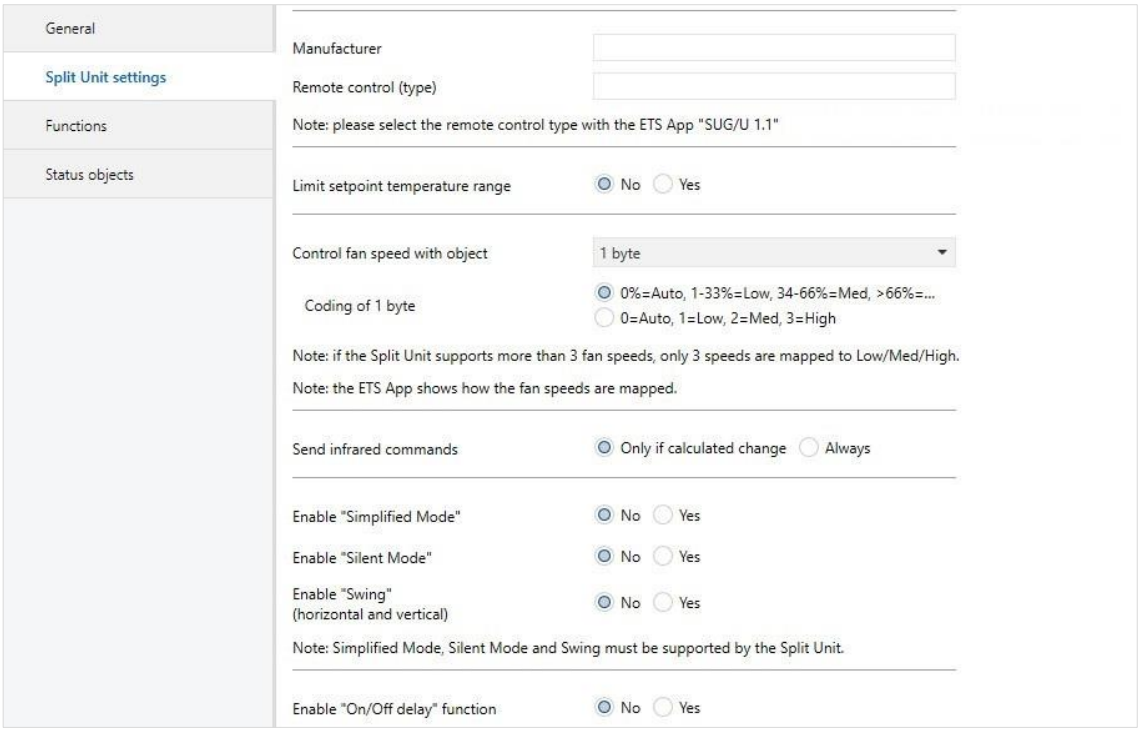
Options: Read and write
Read only request
Disabled

Note
The Control4® KNX Tool is an optional diagnosis tool that is available free of charge on our website.

- *Read and write:* The Control4® KNX Tool has full access to the device and all functions supported by the tool can be executed.
- *Read only request:* The Control4® KNX Tool only has read access; no commands can be sent to the device.
- *Disabled:* The tool has no access to the device.

3.2.2 *Split Unit settings* parameter window

This window is used to set specific parameters for the split unit:



Manufacturer

Options: *Manufacturer*

Remote control (type)

Options: *Remote control model*

These parameters indicate the manufacturer of the split unit and the remote control model.

Before ETS download, the split unit manufacturer and remote control model must be selected using the "SUG/U 1.41" ETS app which is available free from https://ctrl4.co/knx-suac or the KNX Online Shop. The app also displays the range of functions on the split unit and, if applicable, which ones are mapped.

Limit Setpoint temperature range

Options: No
Yes

- *Yes:* Enables the 1-bit group object *Deactivate setpoint temperature limit.*

Note
If you activate Setpoint temperature limit while the current setpoint temperature is outside the setpoint temperature range, the setpoint temperature will be set to the upper or lower limit of the range.

Note
The setpoint temperature limit is activated after the download.

Note
However, activating the priority (Forced operation) takes the setpoint temperature limit into account.

Dependent parameters:

Max. heating setpoint temperature

Options: 16…23…32°C

Min. cooling setpoint temperature

Options: 16…18…32°C

This parameter sets limits for heating and cooling. If a temperature above the *Max. heating setpoint temperature* or below the *Min. cooling setpoint temperature* is sent to the Split Unit Gateway, the highest/lowest permissible value respectively is sent to the unit. Status values are updated accordingly.

Note
You need to check whether the split unit supports the required temperature range. You can read this in the ETS app or refer to the manufacturer documentation for the split unit.

Control fan speed with object

Options: 1 byte
1 bit up/down
1 bit up/down and 1 byte

Depending on the option you select, this enables the the by 1 byte *Fan speed* group object and/or the 1 bit *Fan up/down* group object.

Dependent parameter:

Coding of 1 byte

Options: 0%=Auto, 1-33%=Low, 34-66%=Med, >66%=High
0=Auto, 1=Low, 2=Med, 3=High

The Split Unit Gateway receives the fan speed from a KNX operating device via this object and sends it to the split unit.

If the split unit supports more than 3 fan speeds, only 3 speeds are mapped to Low/Med/High.

Example
If the split unit supports 5 fan speeds, speed 1 is mapped to Low, speed 3 to Med and speed 5 to High, in which case speeds 2 and 4 are not used.

Send infrared commands

Options: Only if calculated change
Always

- *Only if calculated change:* Commands are only sent to the split unit if a change occurs via KNX.
- *Always*: If the split unit is being operated in parallel with a remote control, the status of the gateway may differ from the status of the unit. To ensure that the split unit adopts the right status with every KNX command, select the *Always* option.

  However, this means that the split unit may emit more acknowledgment tones.

Enable "Simplified Mode"

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Simplified Mode*.

  Dependent parameter:

  (0=Cooling, 1=Heating)

Simplified Mode enables you to switch a unit's operating mode between heating and cooling via a 1 bit object. This makes sense if the other operating modes are not in use and the unit is simply switched with a pushbutton for example. It is also possible to select the operating mode with the 1 byte object *Operation mode*.

The value of the 1 bit status object *Status Operating mode* is updated.

Enable "Silent Mode"

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Silent Mode*.

Not all split units support *Silent Mode*. Where they do, it can be used to set the split unit to a low-noise operating mode, which can be useful at night for example.

Information on precisely how the split unit reacts in this mode is provided in the product manual for the unit.

Enable "Swing"
(horizontal and vertical)

Options: No
Yes

- *Yes:* Enables the 1-bit group objects *Horizontal Swing* and *Vertical Swing*.

Not all split units support swing. Where they do, it can be used to start and stop horizontal and/or vertical swing.

Note
Some split unit manufacturers use the terms "horizontal" and "vertical" differently. Some are referring to the airflow direction setting, and others to the slat position. The group objects "*Horizontal swing"* and "*Vertical swing"* can be used for either of these meanings (i.e. however it is worded in the project).

Enable "On/Off delay" function

Options: No
Yes

- *Yes:* Enables the 1-bit group object *Deactivate On/Off delay.*

Dependent parameter:

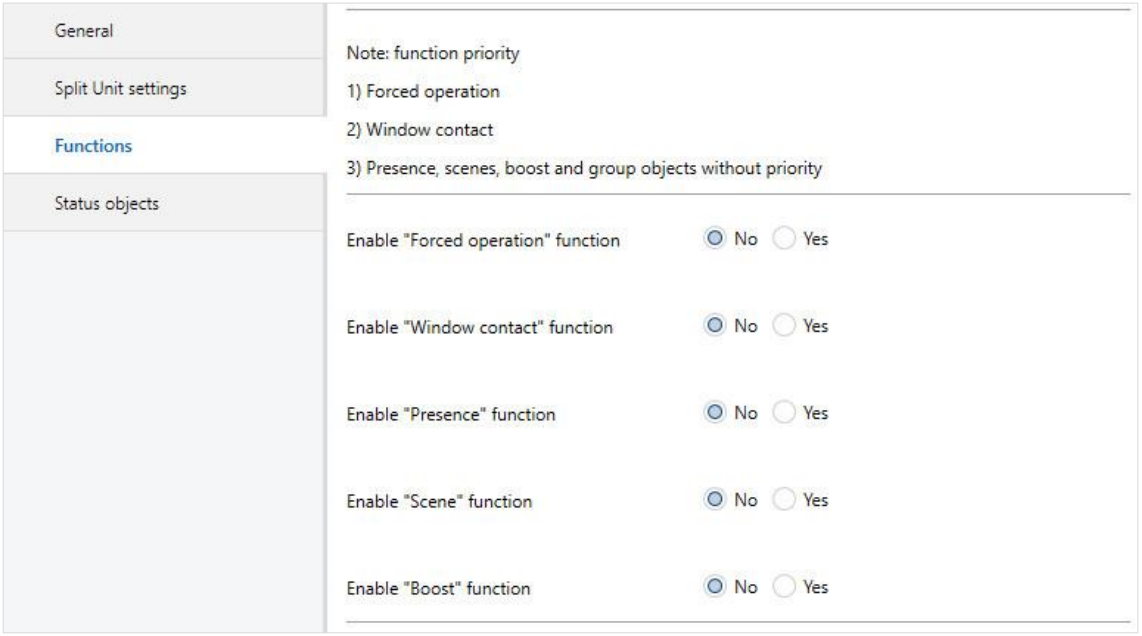
On/Off delay

Options: 1…10…255 min

Sending a telegram with the value 0 to the On/Off object delays switching off the split unit (i.e. sending the infrared command) by the parametrized time.

Note
The switching off delay is activated after the download.

3.2.3 *Functions* parameter window



Function priorities are as follows:

1) Forced operation
2) Window contact
3) Presence, scenes, boost and group objects without priority

If several priorities are activated at once, the highest priority is executed.

The lower priorities are updated in the background and only executed once the higher priority is deactivated.

While a priority is active, Presence and Scene are still evaluated, but Boost and other non-priority group objects are discarded.

Timers (switching off delay, monitoring time) start immediately.

Enable "Forced operation" function

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Forced operation*.

This enables the corresponding parameter window.

Enable "Window contact" function

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Window contact.*

This enables the corresponding parameter window.

Enable "Presence" function

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Presence*.

This enables the corresponding parameter window.

Enable "Scene" function

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Scene*.

This enables the corresponding parameter window.

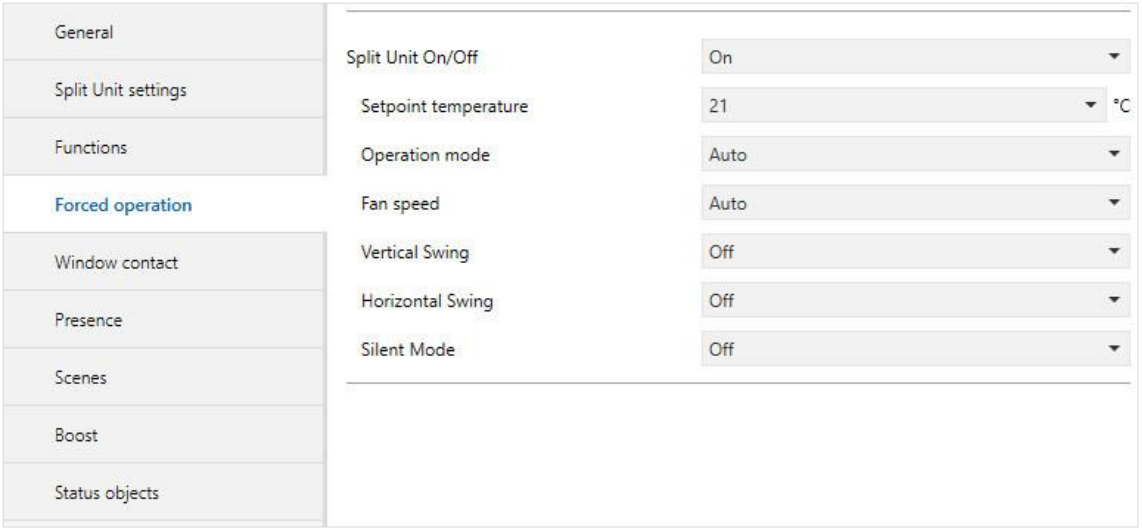
Enable "Boost" function

Options: No
Yes

- *Yes*: Enables the 1-bit group object *Boost*.

This enables the corresponding parameter window.

3.2.3.1 *Forced operation* parameter window

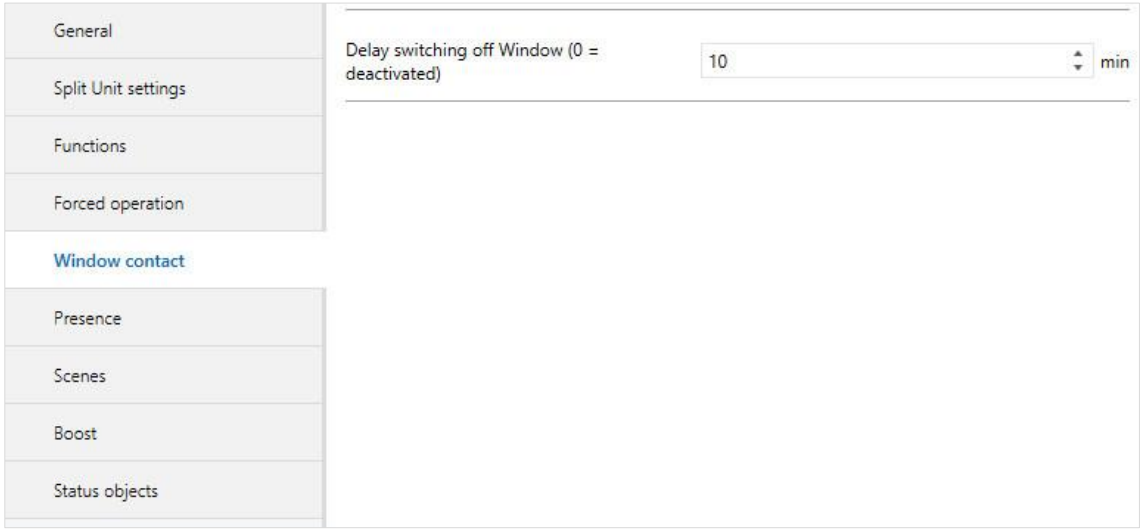


Activating the *Forced operation* function (sending a telegram with the value 1 on the object) sets the split unit to its parametrized state.

This also disables operation of the split unit with lower-priority objects.

However, activating the *Forced operation* function takes the setpoint temperature limit into account.

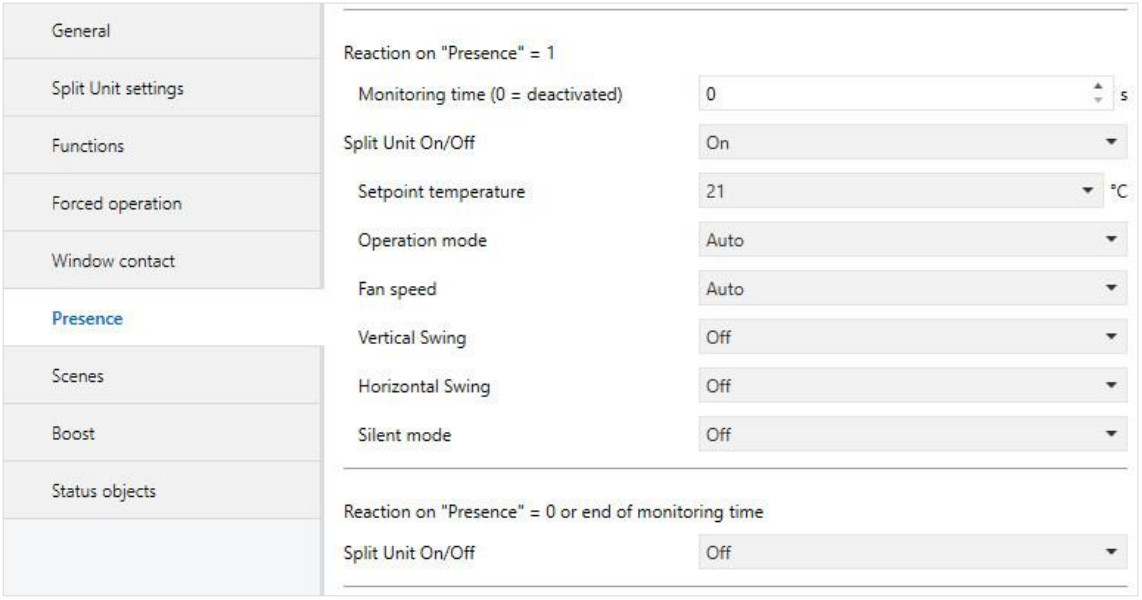
3.2.3.2 *Window contact* parameter window



Activating the *Window contact* function (sending a telegram with the value 1 on the object) switches the split unit off.

You can also parametrize a switching off delay.

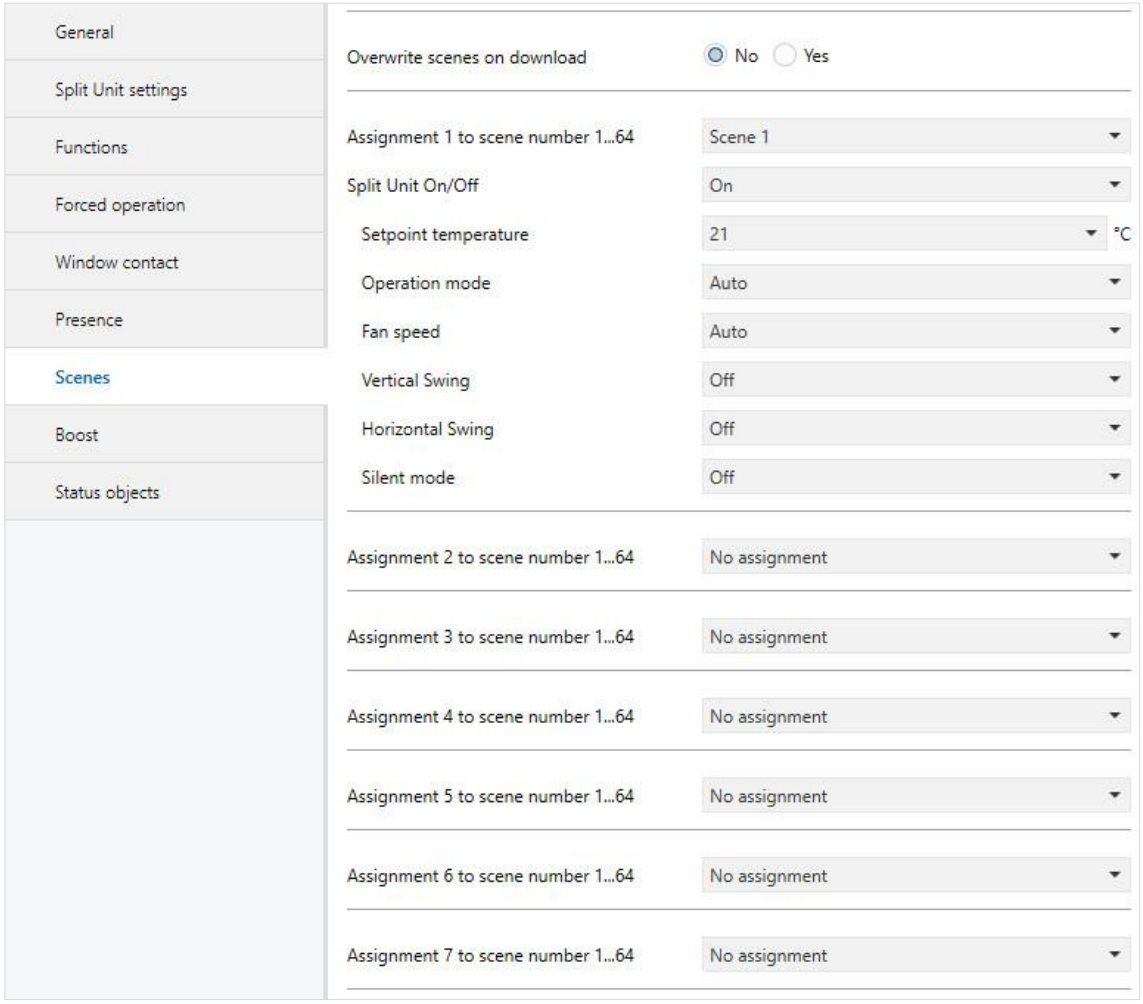
3.2.3.3 *Presence* parameter window



Activating the *Presence* function (sending a telegram with the value 1 on the object) sets the split unit to its parametrized state for Presence = 1.

After the (optional) parametrizable onitoring time or on deactivating the *Presence* function (sending a telegram with the value 0 on the object) the split unit is set to its parametrized state for Presence = 0.

3.2.3.4 *Scenes* parameter window



There are 7 possible scene assignments.

Overwrite scenes on download

Options: No
Yes

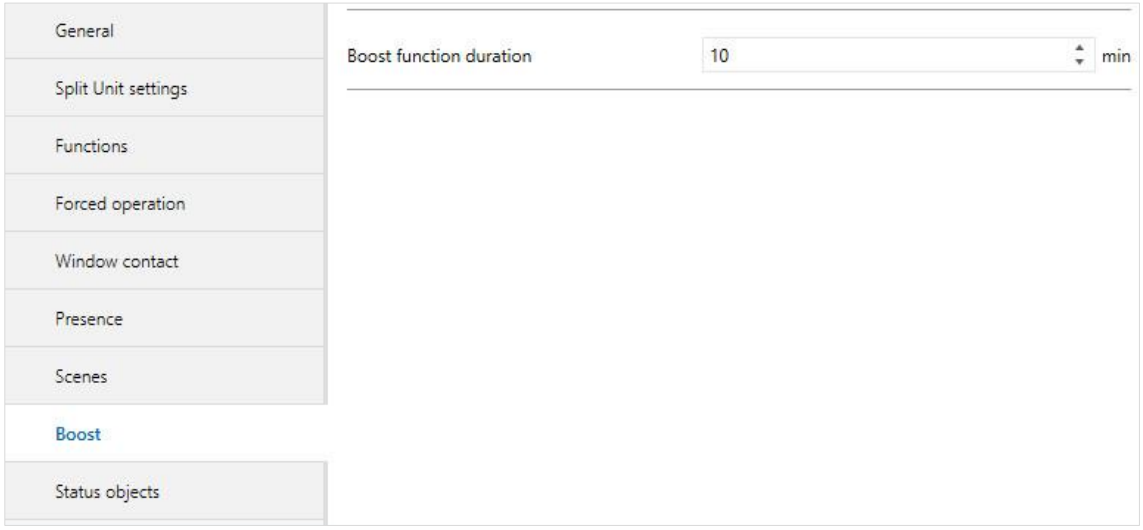
- *No:* After a download, scene values are not overwritten by the assignments parametrized in ETS.
- *Yes:* After a download, scene values are overwritten by the assignments parametrized in ETS.

Assignment *n* to scene number 1...64

Options: No assignment
Scene 1
…
Scene 64

This parameter assigns the output of a scene number (1…64). When the device receives a telegram with this scene number via the *8-bit scene* group object, it recalls the corresponding scene.

3.2.3.5 *Boost* parameter window



Boost function duration

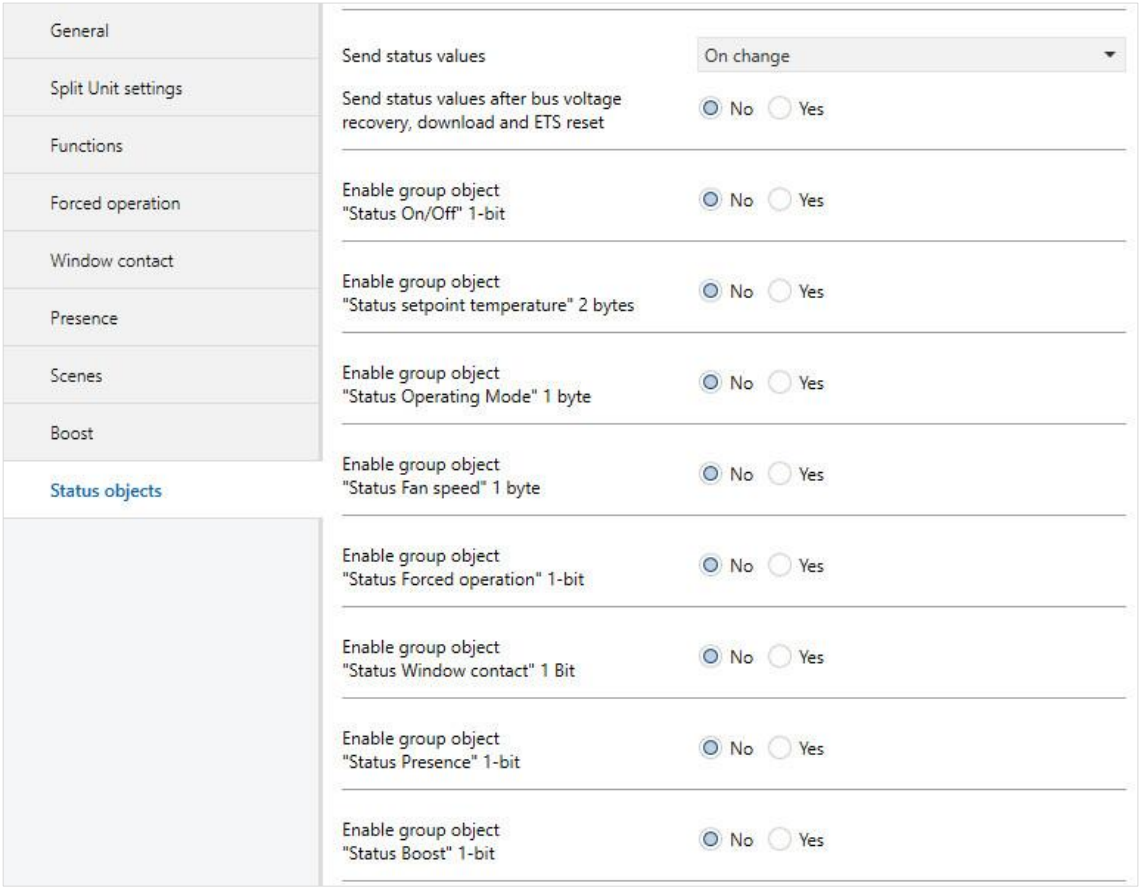
Options: 1…10…255 min

The Boost function allows you to bring a room to the required setpoint temperature very quickly.

Activating the function via the "Boost" object switches the split unit to the highest fan speed and activates swing.

After the parametrized duration, the split unit returns to its original state.

3.2.4 *Status objects* parameter window



Send status values

Options: No (update only)
On change
After request
After a change or request

- *No (update only):* The status is updated but not sent.
- *On change*: The status is sent when a change occurs.
- *After request*: The status is sent when a request occurs.
- *After a change or request*: The status is sent when a change or request occurs.

Send status values after bus voltage recovery, download and ETS reset

Options: No
Yes

- *Yes:* Sends all status values to the bus after a bus voltage recovery, download or ETS reset regardless of the parametrization of *Send status value*s. Sending delays parametrized in the *General* parameter window are taken into account.

Note
Status objects can only be enabled if the corresponding function is enabled on the *Functions* page.

3.3 Group objects

3.3.1 Summary of group objects

No.	Function	Name	Data Point Type (DPT)	Length	Flags				
					C	L	W	T	R
1	In operation	General	1.002	1 bit	x	x		x	
2	Request Status values	General	1.017	1 bit	x		x		
3	Fan speed	Split unit	5.001 5.010	1 byte	x		x		
4	Status Fan speed	Split unit	5.001 5.010	1 byte	x	x		x	
5	Fan up/down	Split unit	1.007	1 bit	x		x		
6	Operation mode	Split unit	20.105	1 byte	x		x		
7	Status Operating mode	Split unit	20.105	1 byte	x	x		x	
8	Simplified Mode	Split unit	1,100	1 bit	x		x		
9	Silent Mode	Split unit	1.002	1 bit	x		x		
10	Status Silent Mode	Split unit	1.002	1 bit	x	x		x	
11	Scene	Function	18.001	1 byte	x		x		
12	On/Off	Split unit	1.001	1 bit	x		x		
13	Status On/Off	Split unit	1.001	1 bit	x	x		x	
14	Deactivate On/Off delay	Split unit	1.003	1 bit	x		x		
15	Forced operation	Function	1.003	1 bit	x		x		
16	Status Forced operation	Function	1.003	1 bit	x	x		x	
17	Window contact	Function	1.019	1 bit	x		x		
18	Status Window contact	Function	1.019	1 bit	x	x		x	
19	Presence	Function	1.018	1 bit	x		x		
20	Status Presence	Function	1.018	1 bit	x	x		x	
21	Setpoint temperature	Split unit	9.001	2 byte	x		x		
22	Status Setpoint temperature	Split unit	9.001	2 byte	x	x		x	
23	Setpoint temperature up/down	Split unit	1.007	1 bit	x		x		
24	Deactivate Setpoint temperature limit	Split unit	1.003	1 bit	x		x		
25	Vertical Swing	Split unit	1.001	1 bit	x		x		
26	Status Vertical swing	Split unit	1.001	1 bit	x	x		x	
27	Horizontal Swing	Split unit	1.001	1 bit	x		x		
28	Status Horizontal swing	Split unit	1.001	1 bit	x	x		x	
29	Boost	Function	1.001	1 bit	x		x		
30	Status Boost	Function	1.001	1 bit	x	x		x	

3.3.2 Group objects

No.	Function	Group object name	Data type	Flags
1	**In operation**	**General**	**1 bit** **DPT 1.002**	**C, R, T**
	Dependent on parameter	Enable group object "In operation", 1 bit		
In order to regularly monitor the presence of the device on the KNX bus, an In operation monitoring telegram can be sent cyclically on the bus. As long as the group object is activated, it sends an In operation telegram. Telegram value 1 = system in operation with option *Send value 1 cyclically* 0 = system in operation with option *Send value 0 cyclically*				
2	**Request Status values**	**General**	**1 bit** **DPT 1.017**	**C, W**
	Dependent on parameter	Enable group object "Request status values" 1 bit		
If this group object receives a telegram with the value x (x = 0/1/0 or 1), all enabled *Status* group objects are sent on the bus, provided they have not been parametrized with the option *After request* or *After a change or request*. Option x = 1 produces the following function: Telegram value 1 = All enabled status messages are sent 0 = No status values sent, no function Option x = 0 produces the following function: Telegram value 1 = No status values sent, no function 0 = All enabled status messages are sent Option x = 0 or 1 produces the following function: Telegram value 0 or 1 = All enabled status messages are sent				
3	**Fan speed**	**Split unit**	**1 byte** **DPT 5.001**	**C, W**
	Dependent on parameter	Control fan speed with object		
The Split Unit Gateway receives the fan speed from a KNX operating device via this object and sends it to the split unit. You can select the coding via the *Coding of 1 byte* parameter. 0%=Auto; 1-33%=Low, 34-66%=Medium, >66%=High				
3	**Fan speed**	**Split unit**	**1 byte** **DPT 5.010**	**C, W**
	Dependent on parameter	Control fan speed with object		
The Split Unit Gateway receives the fan speed from a KNX operating device via this object and sends it to the split unit. You can select the coding via the *Coding of 1 byte* parameter. 0=Auto, 1=Low, 2=Med, 3=High				

No.	Function	Group object name	Data type	Flags
4	**Status Fan speed**	**Split unit**	**1 byte** **DPT 5.001**	**C, R, T**
	Dependent on parameter	Enable group object "Status Fan speed" 1 byte		
The fan speed status is always shown by the 1 byte object, even if Control fan speed with object parameter is set to *1 bit up/down* on the *Split Unit settings* page. The coding of the status object is dependent on the setting in the *Coding of 1 byte* parameter. 0%=Auto; 33%=Low, 66%=Medium, 100%=High				
4	**Status Fan speed**	**Split unit**	**1 byte** **DPT 5.010**	**C, R, T**
	Dependent on parameter	Enable group object "Status Fan speed" 1 byte		
The fan speed status is always shown by the 1 byte object, even if Control fan speed with object parameter is set to *1 bit up/down* on the *Split Unit settings* page. The coding of the status object is dependent on the setting in the *Coding of 1 byte* parameter. 0=Auto, 1=Low, 2=Med, 3=High				
5	**Fan up/down**	**Split unit**	**1 bit** **DPT 1.007**	**C, W**
	Dependent on parameter	Control fan speed with object		
When a telegram is received on this object, the fan speed reduces or increases by one speed. Value 1: Increases fan speed Value 0: Reduces fan speed Available fan speeds are: Automatic, Low, Medium, High If the fan reaches High, a further telegram with the value 1 has no effect. If the fan is set to Automatic, a further telegram with the value 0 has no effect.				
6	**Operation mode**	**Split unit**	**1 byte** **DPT 20.105**	**C, W**
	Dependent on parameter	Always visible		
This object sets the operating mode for the split unit. The operating modes set on receipt of a corresponding value are as follows: 0=Auto 1=Heating 3=Cooling 9=Ventilation 14=Drying All other values are discarded.				

No.	Function	Group object name	Data type	Flags
7	**Status Operating mode**	**Split unit**	**1 byte** **DPT 20.105**	**C, R, T**
	Dependent on parameter	Always visible		
This object indicates the operating mode status for the split unit. 0=Auto 1=Heating 3=Cooling 9=Ventilation 14=Drying				
8	**Simplified Mode**	**Split unit**	**1 bit** **DPT 1.100**	**C, W**
	Dependent on parameter	Enable "Simplified Mode"		
This object switches between heating and cooling for basic applications. 1=Heating 0=Cooling It is possible to operate the unit in parallel using object 6. The operating mode status (object 7) is updated.				
9	**Silent Mode**	**Split unit**	**1 bit** **DPT 1.002**	**C, W**
	Dependent on parameter	Enable "Silent Mode"		
This object activates Silent Mode, provided the split unit supports it. 1=Activate Silent Mode 0=Deactivate Silent Mode				
10	**Status Silent Mode**	**Split unit**	**1 bit** **DPT 1.002**	**C, R, T**
	Dependent on parameter	Enable "Silent Mode" and Enable group object "Status Silent Mode" 1-bit		
This object indicates the status of Silent Mode. 1=Silent Mode activated 0=Silent Mode deactivated				
11	**Scene**	**General**	**1 byte** **DPT 18.001**	**C, W**
	Dependent on parameter	Enable "Scene" function		
Using this 8-bit group object, a Scene telegram can be sent using a coded telegram. The telegram contains the number of the scene concerned as well as the information on whether the scene is to be recalled or stored. The coding for this object is provided in Appendix 1.				

No.	Function	Group object name	Data type	Flags
12	**On/Off**	**Split unit**	**1 bit** **DPT 1.001**	**C, W**
	Dependent on parameter	Always visible		
This object switches the split unit on and off. 1 = split unit switches on 0 = split unit switches off If a switching off delay is parametrized and activated, the split unit only switches off after the specified delay.				
13	**Status On/Off**	**Split unit**	**1 bit** **DPT 1.001**	**C, R, T**
	Dependent on parameter	Enable group object "Status On/Off" 1-bit		
This object indicates the status of the *On/Off* function. 1 = split unit is on 0 = split unit is off If a switching off delay has been specified, the unit is not switched off until this has elapsed.				
14	**Deactivate On/Off delay**	**Split unit**	**1 bit** **DPT 1.003**	**C, W**
	Dependent on parameter	Enable "On/Off delay" function		
The *On/Off delay* function delays switching off the split unit (i.e. sending the infrared command) by the parametrized time. Receipt of a telegram with the value 1 on the "Deactivate On/Off delay" object deactivates the switching off delay. Telegram value 1 = Deactivates switching off delay 0 = Activates switching off delay				
15	**Forced operation**	**Function**	**1 bit** **DPT 1.003**	**C, W**
	Dependent on parameter	Enable "Forced operation" function		
Activating the *Forced operation* function (sending a telegram with the value 1 on the object) sets the split unit to its parametrized state for forced operation. When the *Forced operation* function is deactivated (telegram with the value 0 on the object), the lower-priority function (Window contact) is evaluated, provided it is enabled. If the *Window contact* function is not enabled or activated, the last non-priority command received via the KNX bus is executed.				

No.	Function	Group object name	Data type	Flags
16	**Status Forced operation**	**Function**	**1 bit** **DPT 1.003**	**C, R, T**
	Dependent on parameters	Enable "Forced operation" function and Enable group object "Status Forced operation" 1-bit		
This object indicates the status of Forced operation. 1 = Forced operation is activated 0 = Forced operation is deactivated				
17	**Window contact**	**Function**	**1 bit** **DPT 1.019**	**C, W**
	Dependent on parameter	Enable "Window contact" function		
When a telegram with the value 1 is received on this object, the split unit switches off. No switching off delay can be parametrized. On receipt of a telegram with the value 0, the unit is restored to the state it was in before being switched off.				
18	**Status Window contact**	**Function**	**1 bit** **DPT 1.019**	**C, R, T**
	Dependent on parameters	Enable "Window contact" function and Enable group object "Status Window contact" 1 bit		
This object indicates the status of the *Window contact* function. 1 = *Window contact* function is activated 0 = *Window contact* function is deactivated				
19	**Presence**	**Function**	**1 bit** **DPT 1.018**	**C, W**
	Dependent on parameter	Enable "Presence" function		
Activating the *Presence* function (sending a telegram with the value 1 on the object) sets the split unit to its parametrized state for Presence = 1. After the (optional) parametrizable monitoring time or on deactivating the *Presence* function (sending a telegram with the value 0 on the object) the split unit is set to its parametrized state for Presence = 0.				
20	**Status Presence**	**Function**	**1 bit** **DPT 1.018**	**C, R, T**
	Dependent on parameters	Enable "Presence" function and Enable group object "Status Presence" 1 bit		
The value of this group object indicates the state of the Presence object.				

No.	Function	Group object name	Data type	Flags
21	**Setpoint temperature**	**Split unit**	**2 byte** **DPT 9.001**	**C, W**
	Dependent on parameters	Always visible		
The Split Unit Gateway receives the setpoint value via this group object. If when the Setpoint temperature limit is parametrized and activated the gateway receives setpoint values outside the parametrized range, it sets the setpoint temperature to the upper or lower limit of the range. If you activate Setpoint temperature limit while the current setpoint temperature is outside the setpoint temperature range, the setpoint temperature will be set to the upper or lower limit of the range.				
22	**Status Setpoint temperature**	**Split unit**	**2 byte** **DPT 9.001**	**C, R, T**
	Dependent on parameter	Enable group object "Status setpoint temperature" 2 bytes		
This object indicates the current setpoint value.				
23	**Setpoint temperature up/down**	**Split unit**	**1 bit** **DPT 1.007**	**C, W**
	Dependent on parameter	Always visible		
This object increases or reduces the setpoint temperature by intervals of 1 kelvin. 1 = Setpoint temperature increases 0 = Setpoint temperature decreases If the temperature reaches the upper or lower setpoint temperature limit, further telegrams have no effect.				
24	**Deactivate Setpoint temperature limit**	**Split unit**	**1 bit** **DPT 1.003**	**C, W**
	Dependent on parameter	Limit Setpoint temperature range		
This object activates/deactivates the setpoint temperature limit 1 = Setpoint temperature limit deactivated 0 = Setpoint temperature limit activated If you activate Setpoint temperature limit while the current setpoint temperature is outside the setpoint temperature range, the setpoint temperature will be set to the upper or lower limit of the range. The setpoint temperature limit is activated after download. However, activating the Forced operation priority takes the setpoint temperature limit into account.				

No.	Function	Group object name	Data type	Flags
25	**Vertical Swing**	**Split unit**	**1 bit** **DPT 1.001**	**C, W**
	Dependent on parameter	Enable "Swing" See Enable "Swing" (horizontal and vertical), p. 24		

This object starts and stops horizontal and/or vertical swing.

1 = vertical swing starts
0 = vertical swing stops

Note
On certain split units, the slats move to a specific position when swing is stopped.

26	**Status Vertical swing**	**Split unit**	**1 bit** **DPT 1.001**	**C, R, T**
	Dependent on parameters	Enable "Swing" and Enable group object "Status Swing" 1 bit See Enable "Swing" (horizontal and vertical), p. 24		

This object indicates the status of vertical swing.

1 = vertical swing started
0 = vertical swing stopped

27	**Horizontal Swing**	**Split unit**	**1 bit** **DPT 1.001**	**C, W**
	Dependent on parameter	Enable "Swing" See Enable "Swing" (horizontal and vertical), p. 24		

This object starts and stops horizontal swing.

1 = starts horizontal swing
0 = stops horizontal swing

Note
On certain split units, the slats move to a specific position when swing is stopped.

No.	Function	Group object name	Data type	Flags
28	**Status Horizontal swing**	**Split unit**	**1 bit** **DPT 1.003**	**C, R, T**
	Dependent on parameters	Enable "Swing" and Enable group object "Status Swing" 1 bit See Enable "Swing" (horizontal and vertical), p. 24		
This object indicates the status of horizontal swing. 1 = horizontal swing started 0 = horizontal swing stopped				
29	**Boost**	**Function**	**1 bit** **DPT 1.001**	**C, W**
	Dependent on parameter	Enable "Boost" function		
Receipt of a telegram with the value 1 on this object activates the *Boost* function. The split unit switches to the highest fan speed and swing is activated. After the parametrized duration the split unit returns to its original state.				
30	**Status Boost**	**Function**	**1 bit** **DPT 1.001**	**C, R, T**
	Dependent on parameters	Enable "Boost" function and Enable group object "Status Boost" 1 bit		
This object indicates the status of the *Boost* function. 1 = *Boost* function is activated 0 = *Boost* function is deactivated				

3.4 Special operating states

3.4.1 Reaction on bus voltage failure

In the event of a bus voltage failure, the Split Unit Gateway sends no infrared commands.

3.4.2 Reaction on bus voltage recovery

Input objects are initialized at 0.

Status objects are sent according to the "Send status values after bus voltage recovery, download and ETS reset" parameter on the "Status objects" page.
Sending delays parametrized on the "General" parameter page are taken into account.

IR commands to the split unit are sent according to the "Reaction on bus voltage recovery, download and ETS reset" parameter on the "General" page.

Priorities are not active.

Timers (On/Off delay, window switching off delay, presence monitoring time, boost function duration) are reset and the action set to occur when the timer has finished is executed.

3.4.3 Reaction on ETS download

Input objects are initialized at 0. This excludes the input objects On/Off delay, Temperature limit, Forced operation, Window contact, Presence and Boost. These are initialized according to the operating state before the download.

Status objects are sent according to the "Send status values after bus voltage recovery, download and ETS reset" parameter on the "Status objects" page.
Sending delays parametrized on the "General" parameter page are taken into account.

IR commands to the split unit are sent according to the "Reaction on bus voltage recovery, download and ETS reset" parameter on the "General" page.

Priorities remain unchanged (for more information, see: chapter 3.2.3, page 26).

Timers (On/Off delay, window switching off delay, presence monitoring time, boost function duration) restart if they were active before the download.

3.4.4 Reaction on ETS reset

Input objects are initialized at 0. Exception: the object "Setpoint temperature" is initialized at 18 °C. The value can differ from this if setpoint temperature limitation is active.

Status objects are sent according to the "Send status values after bus voltage recovery, download and ETS reset" parameter on the "Status objects" page.
Sending delays parametrized on the "General" parameter page are taken into account.

IR commands to the split unit are always sent with the initialized values, irrespective of the parameter "Reaction on bus voltage recovery, download and ETS reset".

Priorities are not active.

Timers (On/Off delay, window switching off delay, presence monitoring time, boost function duration) are reset and the action set to occur when the timer has finished is executed.

A Appendix

A.1 Code table, 8 bit scene

Bit No.		7	6	5	4	3	2	1	0		
8-bit value	Hexadecimal	Recall 0 Save 1	Not defined	Binary number codes	Binary number codes	Binary number codes	Binary number codes	Binary number codes	Binary number codes	Scene number	Recall R Save S No reaction –
0	00	0								1	R
1	01	0							■	2	R
2	02	0						■		3	R
3	03	0						■	■	4	R
4	04	0					■			5	R
5	05	0					■		■	6	R
6	06	0					■	■		7	R
7	07	0					■	■	■	8	R
8	08	0				■				9	R
9	09	0				■			■	10	R
10	0A	0				■		■		11	R
11	0B	0				■		■	■	12	R
12	0C	0				■	■			13	R
13	0D	0				■	■		■	14	R
14	0E	0				■	■	■		15	R
15	0F	0				■	■	■	■	16	R
16	10	0			■					17	R
17	11	0			■				■	18	R
18	12	0			■			■		19	R
19	13	0			■			■	■	20	R
20	14	0			■		■			21	R
21	15	0			■		■		■	22	R
22	16	0			■		■	■		23	R
23	17	0			■		■	■	■	24	R
24	18	0			■	■				25	R
25	19	0			■	■			■	26	R
26	1A	0			■	■		■		27	R
27	1B	0			■	■		■	■	28	R
28	1C	0			■	■	■			29	R
29	1D	0			■	■	■		■	30	R
30	1E	0			■	■	■	■		31	R
31	1F	0			■	■	■	■	■	32	R
32	20	0		■						33	R
33	21	0		■					■	34	R
34	22	0		■				■		35	R
35	23	0		■				■	■	36	R
36	24	0		■			■			37	R
37	25	0		■			■		■	38	R
38	26	0		■			■	■		39	R
39	27	0		■			■	■	■	40	R
40	28	0		■		■				41	R
41	29	0		■		■			■	42	R
42	2A	0		■		■		■		43	R
43	2B	0		■		■		■	■	44	R
44	2C	0		■		■	■			45	R
45	2D	0		■		■	■		■	46	R
46	2E	0		■		■	■	■		47	R
47	2F	0		■		■	■	■	■	48	R
48	30	0		■	■					49	R
49	31	0		■	■				■	50	R
50	32	0		■	■			■		51	R
51	33	0		■	■			■	■	52	R
52	34	0		■	■		■			53	R
53	35	0		■	■		■		■	54	R
54	36	0		■	■		■	■		55	R
55	37	0		■	■		■	■	■	56	R
56	38	0		■	■	■				57	R
57	39	0		■	■	■			■	58	R
58	3A	0		■	■	■		■		59	R
59	3B	0		■	■	■		■	■	60	R
60	3C	0		■	■	■	■			61	R
61	3D	0		■	■	■	■		■	62	R
62	3E	0		■	■	■	■	■		63	R
63	3F	0		■	■	■	■	■	■	64	R

Bit No.		7	6	5	4	3	2	1	0		
8-bit value	Hexadecimal	Recall 0 Save 1	Not defined	Binary number codes	Binary number codes	Binary number codes	Binary number codes	Binary number codes	Binary number codes	Scene number	Recall R Save S No reaction –
128	80	1								1	S
129	81	1							■	2	S
130	82	1						■		3	S
131	83	1						■	■	4	S
132	84	1					■			5	S
133	85	1					■		■	6	S
134	86	1					■	■		7	S
135	87	1					■	■	■	8	S
136	88	1				■				9	S
137	89	1				■			■	10	S
138	8A	1				■		■		11	S
139	8B	1				■		■	■	12	S
140	8C	1				■	■			13	S
141	8D	1				■	■		■	14	S
142	8E	1				■	■	■		15	S
143	8F	1				■	■	■	■	16	S
144	90	1			■					17	S
145	91	1			■				■	18	S
146	92	1			■			■		19	S
147	93	1			■			■	■	20	S
148	94	1			■		■			21	S
149	95	1			■		■		■	22	S
150	96	1			■		■	■		23	S
151	97	1			■		■	■	■	24	S
152	98	1			■	■				25	S
153	99	1			■	■			■	26	S
154	9A	1			■	■		■		27	S
155	9B	1			■	■		■	■	28	S
156	9C	1			■	■	■			29	S
157	9D	1			■	■	■		■	30	S
158	9E	1			■	■	■	■		31	S
159	9F	1			■	■	■	■	■	32	S
160	O0	1		■						33	S
161	O1	1		■					■	34	S
162	O2	1		■				■		35	S
163	O3	1		■				■	■	36	S
164	O4	1		■			■			37	S
165	O5	1		■			■		■	38	S
166	O6	1		■			■	■		39	S
167	O7	1		■			■	■	■	40	S
168	O8	1		■		■				41	S
169	O9	1		■		■			■	42	S
170	AA	1		■		■		■		43	S
171	DOW	1		■		■		■	■	44	S
172	AC	1		■		■	■			45	S
173	AD	1		■		■	■		■	46	S
174	AE	1		■		■	■	■		47	S
175	AF	1		■		■	■	■	■	48	S
176	W0	1		■	■					49	S
177	W1	1		■	■				■	50	S
178	W2	1		■	■			■		51	S
179	W3	1		■	■			■	■	52	S
180	W4	1		■	■		■			53	S
181	W5	1		■	■		■		■	54	S
182	W6	1		■	■		■	■		55	S
183	W7	1		■	■		■	■	■	56	S
184	W8	1		■	■	■				57	S
185	W9	1		■	■	■			■	58	S
186	BA	1		■	■	■		■		59	S
187	BB	1		■	■	■		■	■	60	S
188	BC	1		■	■	■	■			61	S
189	BD	1		■	■	■	■		■	62	S
190	BE	1		■	■	■	■	■		63	S
191	BF	1		■	■	■	■	■	■	64	S

Empty = Value 0

■ = Value 1, applicable

C4-KNX-SUAC Split Unit Gateway, FM

A.2 Ordering details

Device type	Product Name	Weight 1 pcs. [kg]	Packaging [pcs.]
C4-KNX-SUAC *KNXPROD File Name: SUG/U1.41*	Split Unit Gateway, FM	0.02	1

A.3 Open source components

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A.4 Notes

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