

HEIDELBERG, SEPTEMBER 2017

Split Unit Gateway SUG/U 1.1

ABB i-bus® KNX

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Split Unit Gateway SUG/U 1.1

Introduction



Split Unit Gateway SUG/U 1.1

Overview of air-conditioning systems

An air-conditioning system produces and maintains a pleasant or required level of room air quality (temperature, humidity, purity and CO₂ content) independently of the weather, waste heat or human and technical emissions

The task of the air-conditioning system is to bring the air in a room into a certain condition and to maintain this condition (“conditioning”)

An air-conditioning system is often misunderstood to be merely an air-cooling system

However the functions of an air-conditioning system are:

1. changing the air temperature (heating or cooling),
2. changing the humidity (humidifying or dehumidifying),
3. removing air constituents (filtering or exchanging)

Many small air-conditioning systems do not perform all of these functions, but they are referred to as air-conditioning systems if they at least perform the cooling function

Air-conditioning systems produce a room climate that people perceive as pleasant. This climate is usually assumed to be a temperature of around 22 °C and a relative humidity value of around 50%

Source: WIKIPEDIA

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Overview of air-conditioning systems

Central building air-conditioning systems

With central air-conditioning systems, the air-treatment functions – air conveyance, filtering, temperature control, humidification and dehumidification – are performed in a central air supply and extraction device

Air ducts branch from this unit to the individual rooms

Central air-conditioning systems are considered to be proven solutions

Requirements regarding air quality, quiet operation, humidity, freedom from drafts, and temperature can be met

Source: WIKIPEDIA



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Overview of air-conditioning systems

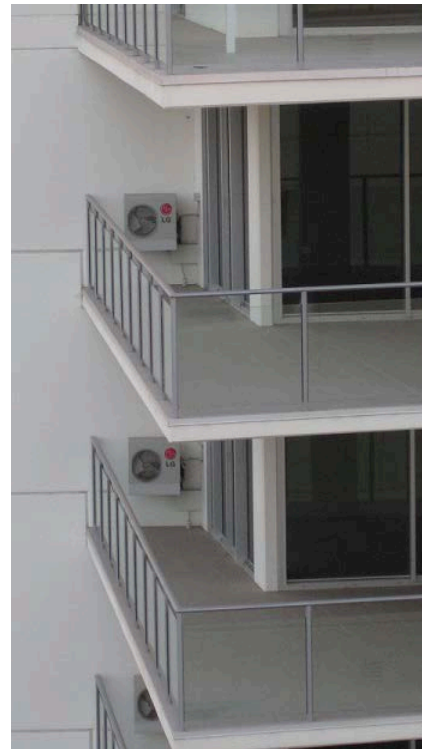
Decentralized building air-conditioning systems

Decentralized air-conditioning systems were developed by adding a ventilation and heating function to the window-mounted air conditioners commonly used in the hot regions of Asia and America

They are preferentially used for retrofitting in individual rooms (ceiling, wall or parapet)

Decentralized air-conditioning systems permit a custom scheme for flexible room utilization

Source: WIKIPEDIA



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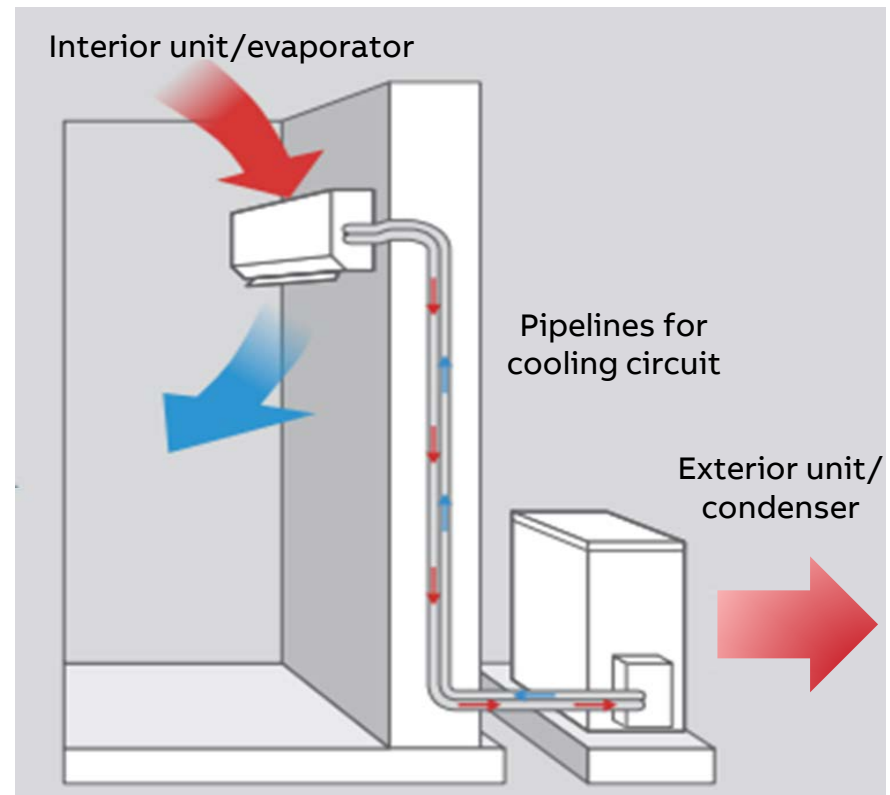
Overview of air-conditioning systems

Decentralized building air-conditioning systems

Split units

- With a decentralized air-conditioning system in the form of a split unit, the refrigerant is compressed outdoors, while the air-treatment processes (air conveyance, filtering and temperature control) are performed in the room to be cooled
- Many small units only recirculate the room air to cool it
- Some devices draw in a small amount of air ahead of the facade (independently of the building's orientation), blow it into the room and usually discharge the same quantity of exhaust air from the room to the outside

Source: WIKIPEDIA



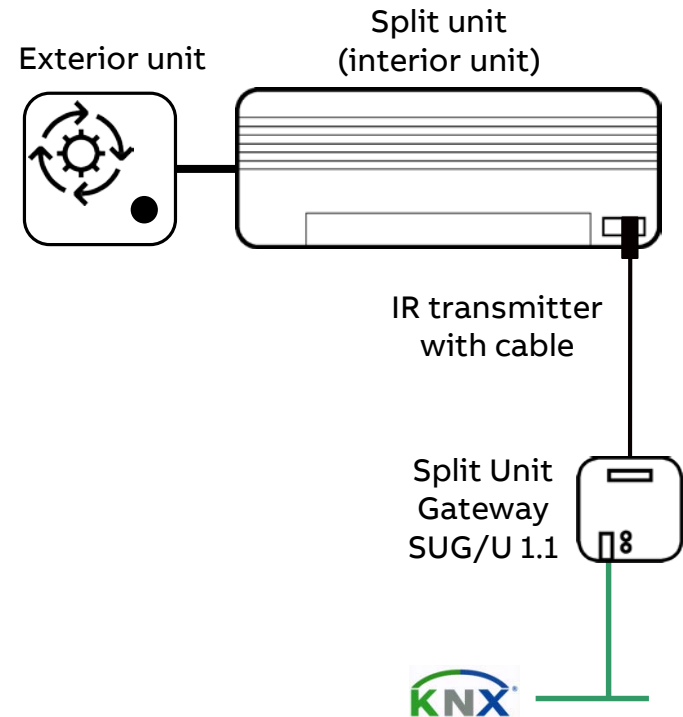
Split Unit Gateway SUG/U 1.1

What is a Split Unit Gateway?

Many manufacturers' air-conditioning units, so-called split units, are operated using an infrared remote control from the manufacturer. The Split Unit Gateway now replaces this remote control.

The Split Unit Gateway forms the interface between the KNX system and the air-conditioning systems from many manufacturers, also referred to as split units.

It allows users to integrate the split unit into a KNX system for convenient, energy efficient control.



Split Unit Gateway SUG/U 1.1

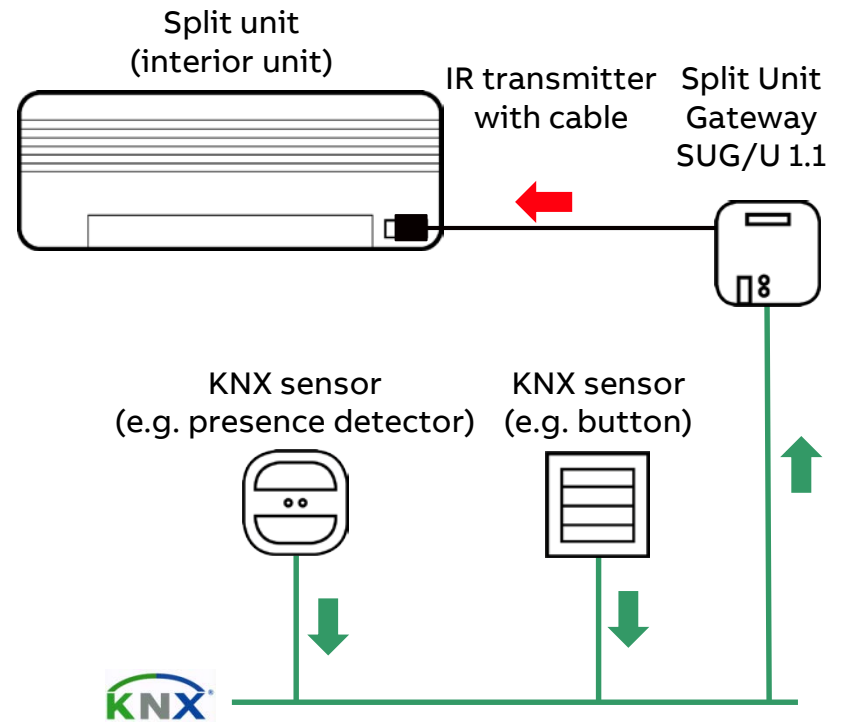
What is a Split Unit Gateway?

The Split Unit Gateway is installed near the split unit, and the transmitter of the supplied cable is bonded directly to the receiver of the split unit

The device converts KNX telegrams to infrared commands and sends them to the split unit

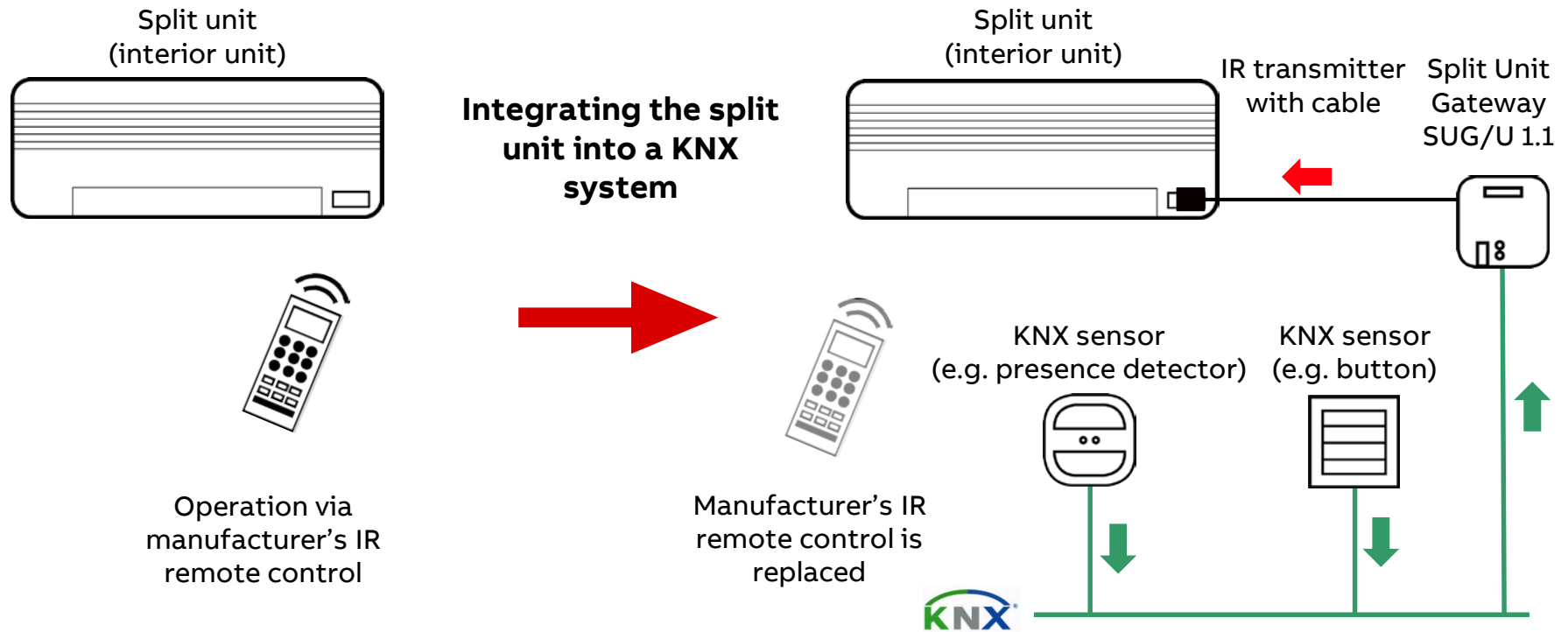
This makes it possible to control the split unit via KNX group commands

The air-conditioning system then no longer receives the commands from a remote control but instead can be operated via any KNX sensors or via a visual display



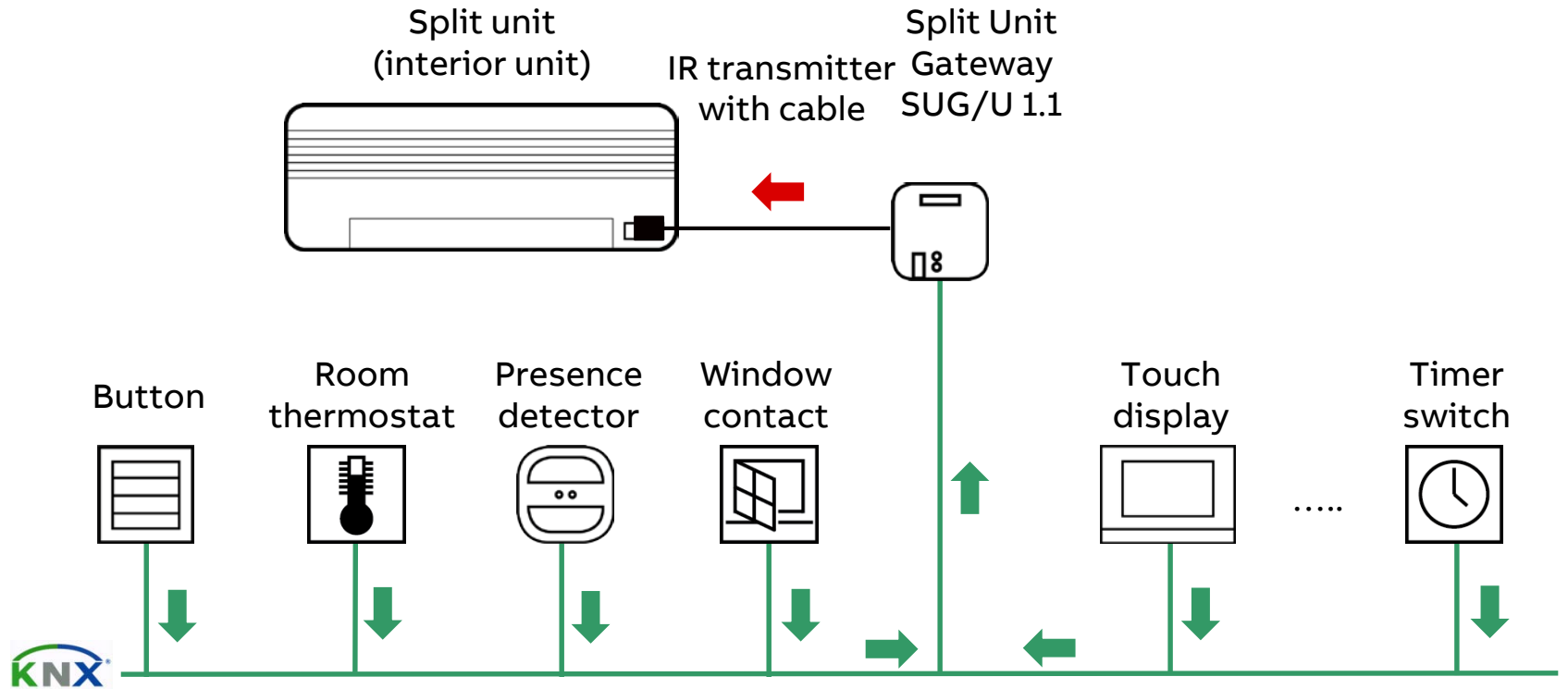
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What is a Split Unit Gateway?



Split Unit Gateway SUG/U 1.1

Overview



Split Unit Gateway SUG/U 1.1

Integration into the i-bus® Tool

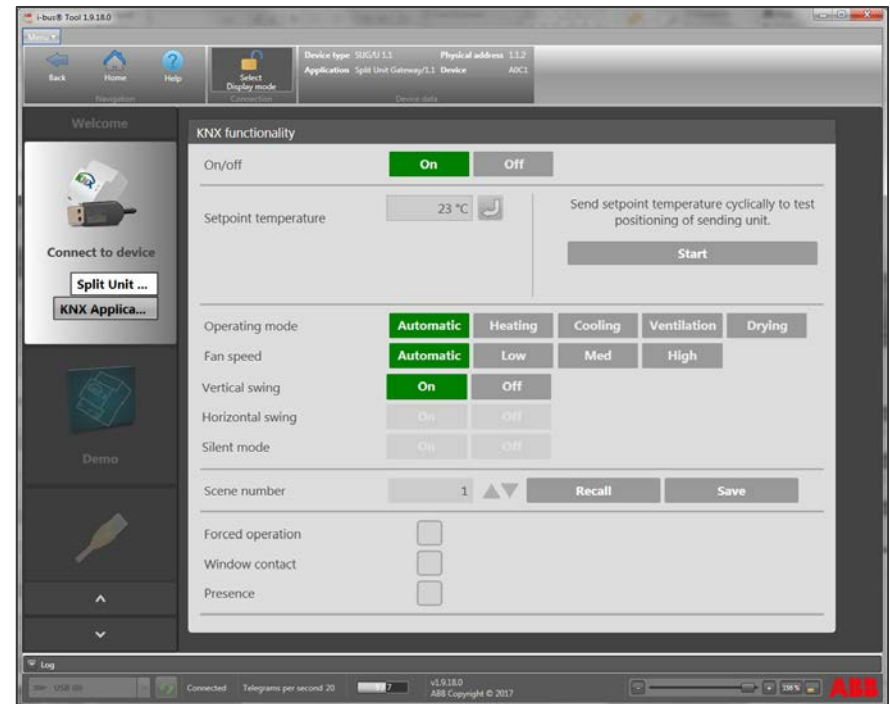
The device possesses an interface to the i-bus® Tool

The i-bus® Tool can be used to read out data and test functions on the connected device

The i-bus® Tool can be downloaded free from the ABB website (www.abb.com/knx)

ETS is not required for the software tool

A description of the functions is provided in the i-bus® Tool online help



Split Unit Gateway SUG/U 1.1

Product overview

Flush-mounted device for installation in a flush-mounted or surface box

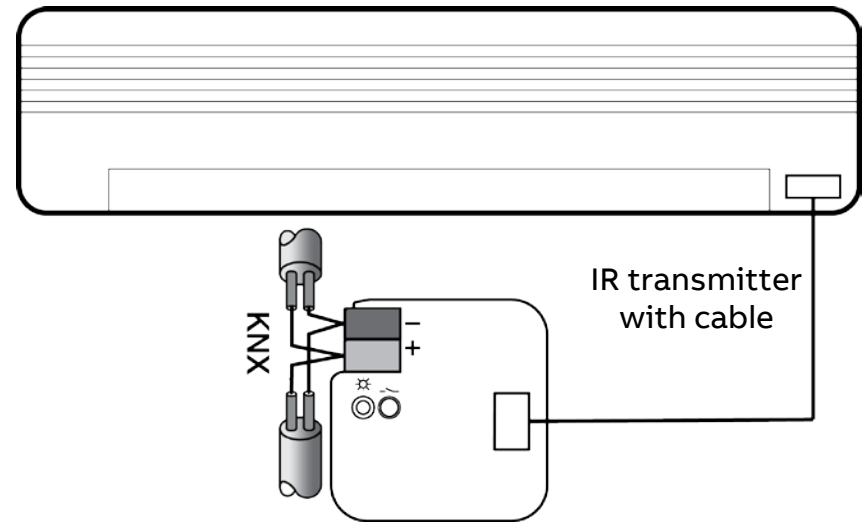
Dimensions 39 x 40 x 12 mm (H x W x D)

Connection terminal for IR cable and KNX

The transmission diode of the supplied IR cable is bonded directly to the receiver of the split unit

Power supply is via the ABB i-bus® KNX; no additional auxiliary voltage is required

Red LED and button for assignment of the physical address



Split Unit Gateway SUG/U 1.1

Device functions – software

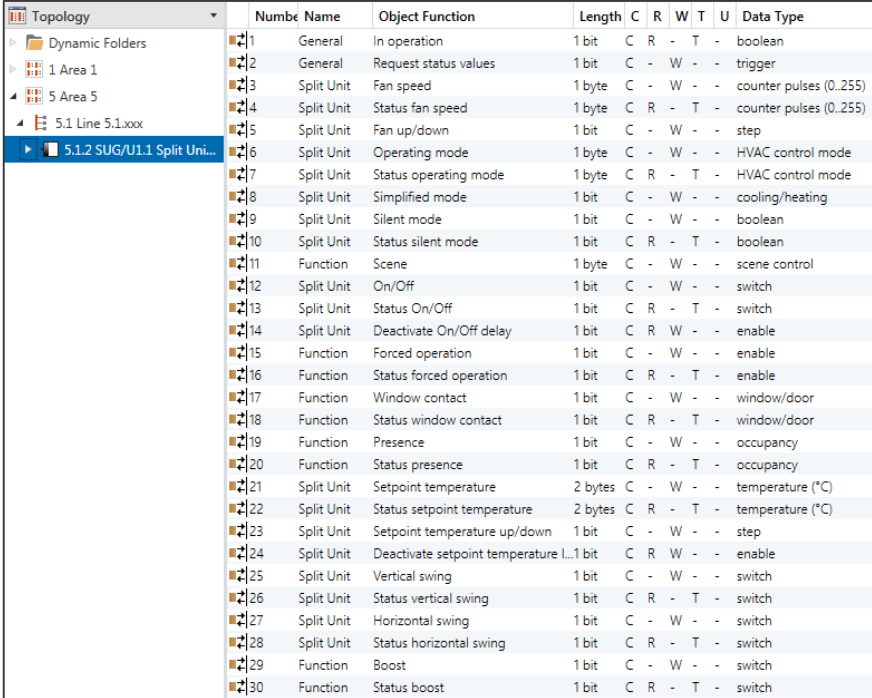
Parameterization is performed using the ETS4 or ETS5 software

The free “ABB SUG/U 1.1” ETS App available from the KNX Online Shop must also be installed

Further parameters* permit functions such as

- Fan speed control
- Horizontal and vertical swing
- Swing activation
- Specification of setpoint temperature and limitation
- Activation of Silent Mode
- Scene and boost function
- Status messages

* If the function is supported by the split unit device



Number	Name	Object Function	Length	C	R	W	T	U	Data Type
1	General	In operation	1 bit	C	R	-	T	-	boolean
2	General	Request status values	1 bit	C	-	W	-	-	trigger
3	Split Unit	Fan speed	1 byte	C	-	W	-	-	counter pulses (0..255)
4	Split Unit	Status fan speed	1 byte	C	R	-	T	-	counter pulses (0..255)
5	Split Unit	Fan up/down	1 bit	C	-	W	-	-	step
6	Split Unit	Operating mode	1 byte	C	-	W	-	-	HVAC control mode
7	Split Unit	Status operating mode	1 byte	C	R	-	T	-	HVAC control mode
8	Split Unit	Simplified mode	1 bit	C	-	W	-	-	cooling/heating
9	Split Unit	Silent mode	1 bit	C	-	W	-	-	boolean
10	Split Unit	Status silent mode	1 bit	C	R	-	T	-	boolean
11	Function	Scene	1 byte	C	-	W	-	-	scene control
12	Split Unit	On/Off	1 bit	C	-	W	-	-	switch
13	Split Unit	Status On/Off	1 bit	C	R	-	T	-	switch
14	Split Unit	Deactivate On/Off delay	1 bit	C	R	W	-	-	enable
15	Function	Forced operation	1 bit	C	-	W	-	-	enable
16	Function	Status forced operation	1 bit	C	R	-	T	-	enable
17	Function	Window contact	1 bit	C	-	W	-	-	window/door
18	Function	Status window contact	1 bit	C	R	-	T	-	window/door
19	Function	Presence	1 bit	C	-	W	-	-	occupancy
20	Function	Status presence	1 bit	C	R	-	T	-	occupancy
21	Split Unit	Setpoint temperature	2 bytes	C	-	W	-	-	temperature (°C)
22	Split Unit	Status setpoint temperature	2 bytes	C	R	-	T	-	temperature (°C)
23	Split Unit	Setpoint temperature up/down	1 bit	C	-	W	-	-	step
24	Split Unit	Deactivate setpoint temperature	1 bit	C	R	W	-	-	enable
25	Split Unit	Vertical swing	1 bit	C	-	W	-	-	switch
26	Split Unit	Status vertical swing	1 bit	C	R	-	T	-	switch
27	Split Unit	Horizontal swing	1 bit	C	-	W	-	-	switch
28	Split Unit	Status horizontal swing	1 bit	C	R	-	T	-	switch
29	Function	Boost	1 bit	C	-	W	-	-	switch
30	Function	Status boost	1 bit	C	R	-	T	-	switch

Split Unit Gateway **SUG/U 1.1**

Overview

	SUG/U 1.1
Design	Flush-mounted device
Order code	2CDG 110 207 R0011
List price	€180.00
Launch	available

Split Unit Gateway SUG/U 1.1

Product documentation

Product Manual
Technical datasheet
Installation and operating instructions
...

Training & Qualification Database

- Presentation slides
- Webinar slides
- Webinar Video recording (English)
(MP4 file on YouTube)



Split Unit Gateway SUG/U 1.1

Technical documents

www.abb.com/KNX

- Product category
 - Heating, Ventilation & Air Conditioning
 - Split Unit Gateway SUG/U 1.1
- ETS4 and ETS5 application software
- Product Manual
- Technical datasheet
- Installation and operating instructions
- Text for bid invitation
- Product information
- Presentation slides
- CE declaration of conformity
- . . .



Detailed information for: SUG/U 1.1

This page contains technical data sheet, documents library and links to offering related to this product. If you require any other information, please contact us using form located at the bottom of the page.

Print...
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Data Sheet Documentation

SUG/U 1.1

General Information

Extended Product Type: SUG/U 1.1

Product ID: 2CDS110207R0011

EAN: 4016779997362

Catalog Description: SUG/U 1.1 Split Unit Gateway, FM

Long Description: The Split Unit Gateway forms the interface between the KNX system and many manufacturers' air conditioners, so-called split units. The device converts the KNX telegrams into infrared commands and transmits them to the split unit. The transmitter of the supplied cable is bonded directly onto the split unit's receiver. The split unit then no longer receives the commands from a remote control. Instead, it can be operated via any KNX sensors or via a visual display system. The device is put into operation with the ETS, and a free ETS app is available to select the split unit model. Auxiliary voltage is not required.



Downloads

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Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 1

What is the purpose of a Split Unit Gateway SUG/U 1.1?

- A** The electric consumption values of split unit devices can be wirelessly transmitted to a KNX system.
- B** Commands can be conveniently sent to a KNX system using the remote controls of split unit devices.
- C** It allows air-conditioning systems (split units) from various manufacturers to be integrated into a KNX system for convenient and energy efficient control.

Split Unit Gateway SUG/U 1.1

Which answer is correct?

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What is the purpose of a Split Unit Gateway SUG/U 1.1?

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- B** Commands can be conveniently sent to a KNX system using the remote controls of split unit devices.
- C** It allows air-conditioning systems (split units) from various manufacturers to be integrated into a KNX system for convenient and energy efficient control.

Integration of air-conditioning systems into a KNX system

Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 2

How does the Split Unit Gateway communicate with the split unit device?

- A** Communication between the Split Unit Gateway and the split unit device takes place using wiring via an RS485 bus.
- B** An IR transmitter at the end of the Split Unit Gateway cable is bonded directly onto the split unit receiver and sends IR commands.
- C** The Split Unit Gateway transmits the commands to compatible split unit devices using the standardized “EnOcean” radio transmission protocol.

Split Unit Gateway SUG/U 1.1

Which answer is correct?

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Communication via IR signals

Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 3

How are split unit devices controlled via KNX?

A

A central Split Unit Gateway cyclically polls KNX sensors (e.g. buttons or presence detectors), converts the response telegrams into infrared commands and forwards them to all split unit devices.

B

A Split Unit Gateway receives the group telegrams sent by KNX sensors (e.g. buttons or presence detectors), converts them into infrared commands and forwards them to a split unit device.

C

The Split Unit Gateway can receive only 8-bit scene telegrams, decode them, convert them into infrared commands and forward them to a split unit device.

Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 3

How are split unit devices controlled via KNX?

- A** A central Split Unit Gateway cyclically polls KNX sensors (e.g. buttons or presence detectors), converts the response telegrams into infrared commands and forwards them to all split unit devices.
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- C** The Split Unit Gateway can receive only 8-bit scene telegrams, decode them, convert them into infrared commands and forward them to a split unit device.

Receiving and converting KNX telegrams and sending the IR signals

—

ABB

Split Unit Gateway SUG/U 1.1

Basis – planning



ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Planning

The appropriate standards, directives, regulations and specifications of the appropriate country should be observed when planning and setting up electrical installations

– KNX international standard: ISO/IEC 14543 and EN 50090

Operate the device only within the specified technical data

The maximum permissible current of a KNX line must not be exceeded

Ensure that the KNX line is correctly dimensioned

This device features a maximum current consumption of 12 mA (Fan-In 1)

The Split Unit Gateway is installed in a flush-mounted or surface box near (max. 2 m) the split unit and is connected to the split unit using the supplied IR cable

The IR cable is plugged into the designated socket of the Gateway, and the transmitter is affixed to the Split Unit's receiver using the double-sided adhesive tape

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Observations

The split unit devices differ in their scope of functions in some cases

- Not all functions are available on every split unit
 - In other words, when parameterizing the ETS application, you need to check whether the split unit 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 unit devices have exactly three fan speeds
 - If a split unit has more than three fan speeds, only three speeds are mapped to the Low/Medium/High speeds available in ETS
 - Example: If a split unit has five fan speeds, speeds 1/3/5 are mapped to Low/Medium/High

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Observations

The split unit devices differ in their scope of functions in some cases

- During parameterization 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 “ABB SUG/U Configuration” ETS App, which is available free from the KNX Online Shop
 - The app also displays the range of functions on the split unit and, if applicable, which ones were mapped
- Communication with the split unit device 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

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Technical data

Supply voltage: ABB i-bus KNX (21...31 V DC)

Current consumption: max. 12 mA

Power loss: max. 0.4 W

Connection terminal: plug-in terminal for IR cable (supplied)

IR cable: length 2 m

KNX connection: bus connection terminal

Dimensions: 39 x 40 x 12 mm (H x W x D)

Weight: 0.02 kg

Installation: in flush-mounted or surface box (near the split unit)

Temperature range in operation (Tu): -5 °C ... +45 °C

Type of protection: IP 20 in the installed state according to EN 60 529

Safety class: III according to DIN EN 61 140

Approvals: KNX according to EN 50 090-1, -2

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Software functions

The split unit's functions can therefore be operated via KNX using any operating elements

- On/Off
- Specify setpoint temperature including parameterizable setpoint temperature limits
- Set operating mode (Automatic, Heating, Cooling, Ventilation, Drying)
- Fan speed control (1-bit / 1-byte)
- Horizontal swing
- Vertical swing
- Silent Mode
- Simplified Mode

5.1.2 SUG/U1.1 Split Unit Gateway > Split Unit settings

General	Manufacturer	DAIKIN
Split Unit settings	Remote control (type)	U-DK1,2
Functions	Note: Please select the remote control type with the ETS App "ABB SUG/U 1.1" (available free of charge at our KNX online shop)	
Forced operation	Limit setpoint temperature range	<input type="radio"/> No <input checked="" type="radio"/> Yes
Window contact	Max. heating setpoint temperature	23 °C
Presence	Min. cooling setpoint temperature	18 °C
Scenes	Note: The setpoint temperature limit is activated after the download.	
Boost	Control fan speed with object	1 Bit up/down and 1 byte
Status objects	Coding of 1 byte	<input type="radio"/> 0%=Auto, 1-33%=Low, 34-66%=Med, >66%=... <input checked="" type="radio"/> 0=Auto, 1=Low, 2=Med, 3=High
	Note: If the Split Unit supports more than 3 fan speeds, only 3 speeds are mapped to Low/Med/High. Note: The ETS App shows how the fan speeds are mapped.	
	Send infrared commands	<input checked="" type="radio"/> Only if calculated change <input type="radio"/> Always
	Enable "Simplified mode"	<input type="radio"/> No <input checked="" type="radio"/> Yes (0=Cooling, 1=Heating)
	Enable "Silent mode"	<input type="radio"/> No <input checked="" type="radio"/> Yes
	Enable "Swing" (horizontal and vertical)	<input type="radio"/> No <input checked="" type="radio"/> Yes
	Note: Simplified mode, Silent mode and Swing must be supported by the Split Unit.	

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Software functions

On/Off

- Switching the split unit on or off. A switching ON/OFF delay can be optionally parameterized
- Specify setpoint temperature including parametrizable setpoint temperature limits
- The setpoint is sent to the split unit. Regulation is then performed by the split unit itself
- The setpoint temperature can be sent directly (2-byte value) or adjusted 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) and/or adjusted up/down by 1 bit

Horizontal and vertical swing

- Slat movement can be activated/deactivated on many split units

Activate Silent Mode

- The exterior unit of the split unit operates at reduced power (less noise)

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Software functions

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

- Reaction on ETS programming, bus voltage failure and recovery
- Access with i-bus® Tool
- Forced operation
- Window contact
- Presence
- Scene (8 bit)
- Boost
- Status objects

5.1.2 SUG/U1.1 Split Unit Gateway > Functions

General	Note: function priority
Split Unit settings	1) Forced operation
Functions	2) Window contact
Forced operation	3) Presence, scenes, boost and group objects without priority
Window contact	Enable "Forced operation" function <input type="radio"/> No <input checked="" type="radio"/> Yes
Presence	Enable "Window contact" function <input type="radio"/> No <input checked="" type="radio"/> Yes
Scenes	Enable "Presence" function <input type="radio"/> No <input checked="" type="radio"/> Yes
Boost	Enable "Scene" function <input type="radio"/> No <input checked="" type="radio"/> Yes
Status objects	Enable "Boost" function <input type="radio"/> No <input checked="" type="radio"/> Yes
	Enable "Boost" function <input type="radio"/> No <input checked="" type="radio"/> Yes

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Functional description of operation

The split unit can be operated via KNX using any operating elements (e.g. buttons, touch display)

The Split Unit Gateway sends the respective current status on the KNX

It can be indicated on the rocker switch LEDs

Example: button with four rocker switches

	Object function	Left	Right
Rocker switch 1	On/Off	On	Off
Rocker switch 2	Fan speed	Up	Down
Rocker switch 3	Setpoint temperature	19 °C	21 °C
Rocker switch 4	Setpoint temperature	23 °C	24 °C

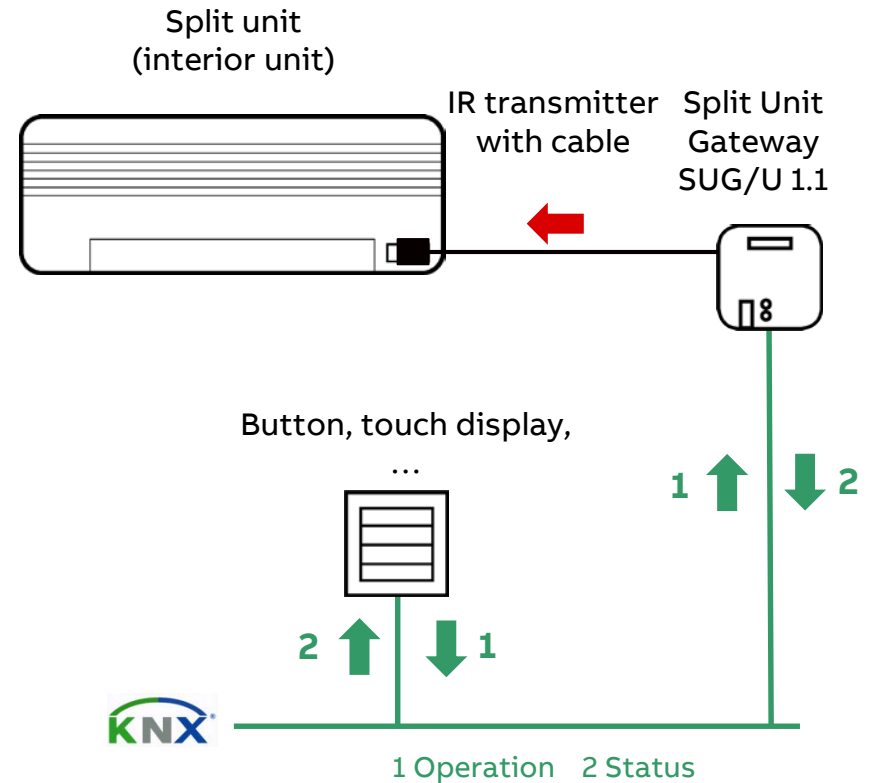


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Functional description of operation

The split unit can be operated via KNX using a room thermostat.

The rocker switches can change the setpoint temperature, switch on/off and increase/decrease the fan speed

	Object function	Left	Right
Rocker switch 1	On/Off	On	Off
Rocker switch 2	Setpoint adjustment	Up	Down
Rocker switch 3	Fan speed	Up	Down

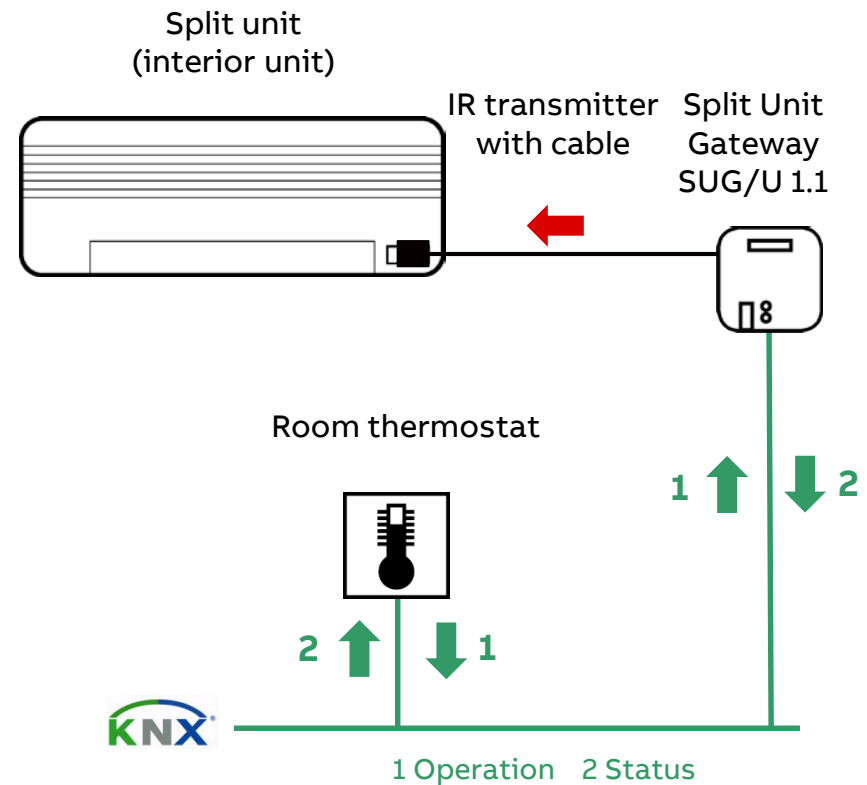


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Functional description of window contact

A window contact (magnetic contact) is connected to an input of a KNX Security Terminal and sends the open/closed state of the window to the Split Unit Gateway

When a window is open, the function “Window contact” is activated with a higher priority and the split unit is switched off (optional OFF delay)

Closing the window deactivates the function, and the split unit can be operated again

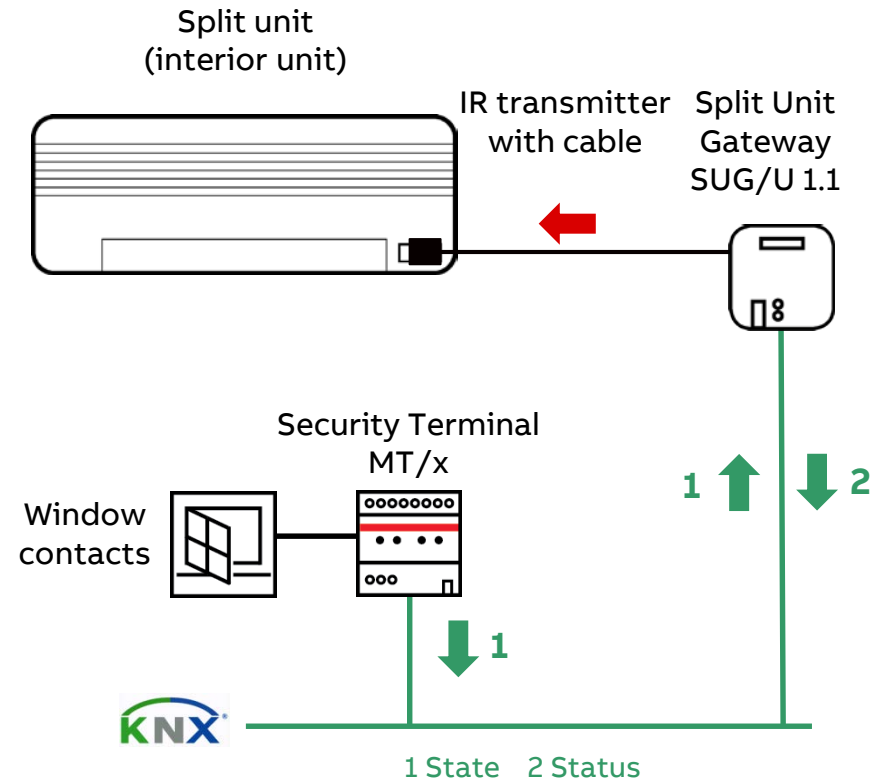


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

Functional description of presence

A presence detector automatically detects a person in the room, activates the function “Presence” and the parameterized state is established, e.g.

- Split unit ON, AUTO mode, setpoint temperature 22 °C, fan speed AUTO, ...

After the room is left (including a run-on time), the function “Presence” can be deactivated and the parameterized state is established

- Split Unit ON/OFF/unchanged

The function “Presence” can also be activated and deactivated via a card reader (e.g. hotel room)

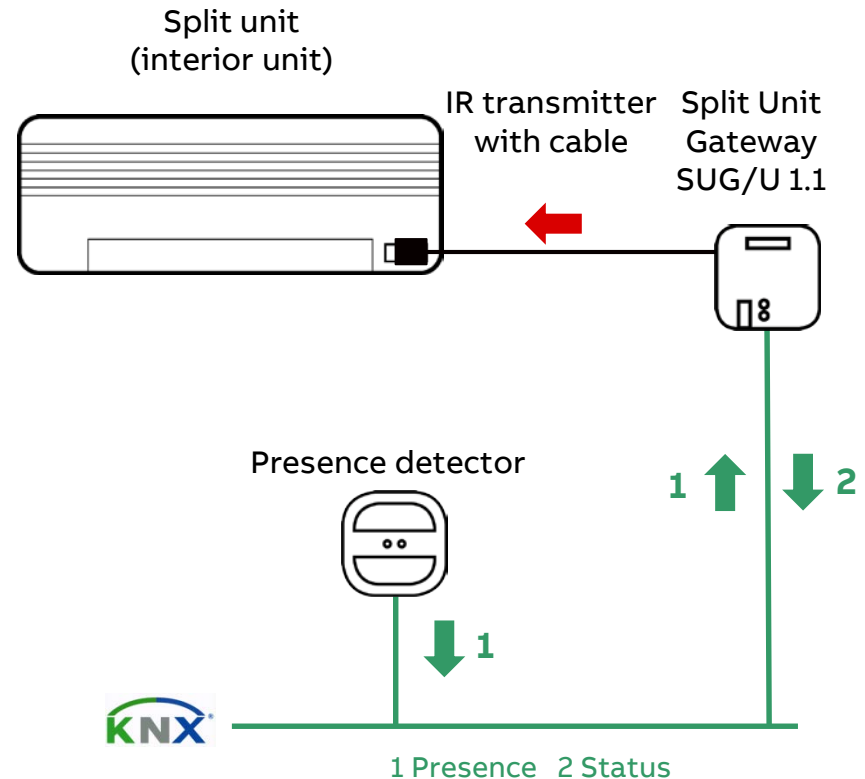


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Basis – planning

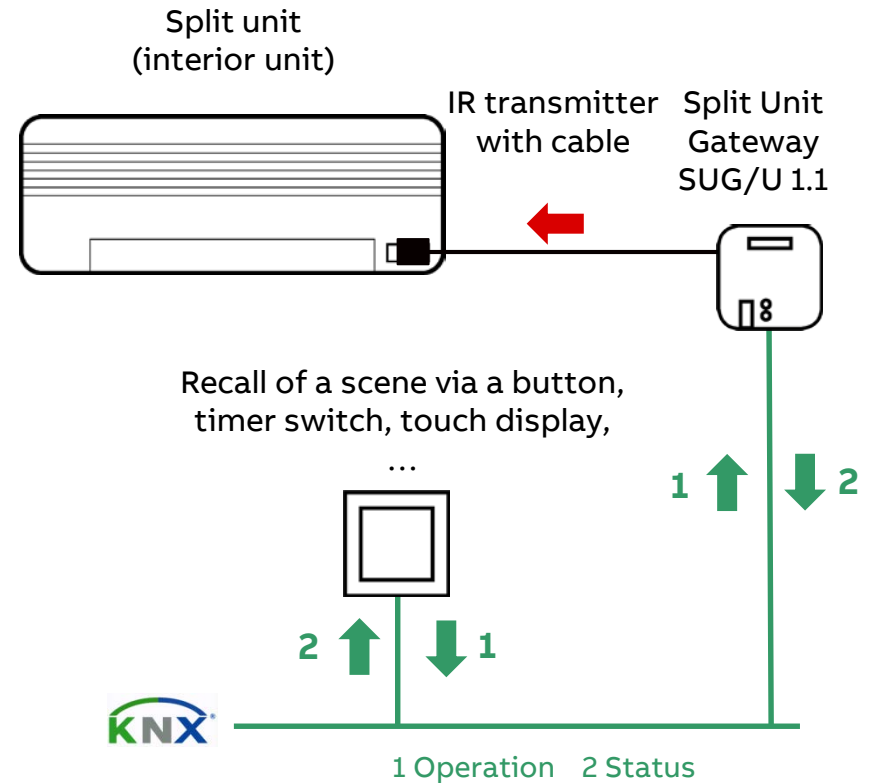
Functional description of scenes

The function “Scenes” can be used for convenient recall of various scenes, e.g. in a conference/training room

- Welcome scene
- Presentation scene
- Break scene

The parameterized state is established as soon as the corresponding scene is recalled

Scene	Welcome	Presenta- tion	Pause	End
Split unit	On	On	Unchan.	Off
Setpoint temp.	21 °C	21 °C	22 °C	-
Operat. mode	Auto	Auto	Ventilat.	-
Fan speed	Low	Auto	High	-
Slat adjustment	Start	Unchan.	Start	-



Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 1

What auxiliary voltage does the Split Unit Gateway require?

- A** 12...24 V DC
- B** 100...240 V AC
- C** No auxiliary voltage required

Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 1

What auxiliary voltage does the Split Unit Gateway require?

- A 12...24 V DC
- B 100...240 V AC
- C No auxiliary voltage required

Supply voltage via ABB i-bus KNX

Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 2

What connections does the Split Unit Gateway have?

- A** EnOcean radio module and RS485 bus
- B** KNX bus connection terminal, plug-in terminal for the IR cable and EnOcean radio module
- C** KNX bus connection terminal and plug-in terminal for the IR cable

Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 2

What connections does the Split Unit Gateway have?

- A EnOcean radio module and RS485 bus
- B KNX bus connection terminal, plug-in terminal for the IR cable and EnOcean radio module
- C KNX bus connection terminal and plug-in terminal for the IR cable**

KNX and IR cable

Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 3

Which additional functions does the Split Unit Gateway offer?

A Scenes, forced operation and presence

B Forced operation, binary input and power measurement

C Pulse counting, LED activation and scenes

Split Unit Gateway SUG/U 1.1

Basis – planning: Which answer is correct?

Question 3

Which additional functions does the Split Unit Gateway offer?

A Scenes, forced operation and presence

B Forced operation, binary input and power measurement

C Pulse counting, LED activation and scenes

Forced operation – presence – window contact – scene – boost

—

ABB

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Installation

Attention! Hazardous voltage! Mounting and commissioning may be carried out only by electrical specialists

The appropriate standards, directives, regulations and specifications of the appropriate country should be observed when planning and setting up electrical installations

The device must not be operated outside the specified technical data

Refer to the product manual or the installation and operating instructions for a detailed description of installation and commissioning

Montage- und Betriebsanleitung
Installation and Operating Instructions
Mode d'emploi
Instrucciones de montaje de servicio
Istruzioni per l'uso
Montage- en bedieningshandleiding
Instrukcja montażu i eksploatacji
Руководство по монтажу и эксплуатации
安装和操作手册

SUG/U 1.1

-  SUG/U1.1 Split Unit Gateway
-  SUG/U1.1 Split Unit Gateway
-  SUG/U1.1 Unité de pilotage de Split
-  SUG/U1.1 Gateway Split KNX
-  SUG/U1.1 Gateway Unità Split
-  SUG/U1.1 Split unit gateway
-  SUG/U1.1 KNX-Split-Bramka IR
-  SUG/U1.1 Интерфейс кондиционеров
-  SUG/U1.1 空调红外接口

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Scope of delivery

Split Unit Gateway SUG/U 1.1 with

- Installation and operating instructions
- Bus connection terminal
- IR cable (2m) with transmitter and double-sided adhesive tape

The device is supplied with the physical address 15.15.255 and a preloaded application



Montage- und Betriebsanleitung
Installation and Operating Instructions
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- ☐ SUG/U1.1 Интерфейс кондиционеров
- ☐ SUG/U1.1 空调红外接口

ABB i-bus® KNX
2CDG941183P0001



ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Connection diagram, controls/indicators

- (1) KNX connection
- (2) IR cable connection
- (3) Programming LED (red)
LED lights up when the programming button is pressed, in order to assign a physical address to the bus device
- (4) Programming button
For assignment of the physical address

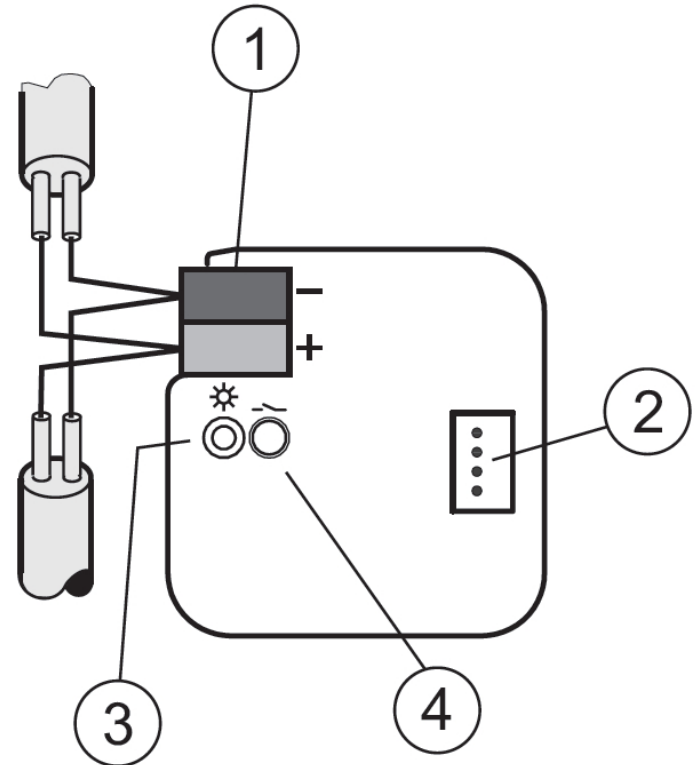


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Mounting and installation

The device is suitable for mounting in a flush-mounted or surface box

Maintain a distance of max. 2 m from the split unit device

The Gateway can be installed in any position

Accessibility of the device for the purpose of operation, testing, visual inspection, maintenance and repair must be provided compliant to DIN VDE 0100-520

The connection to the KNX 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

Refer to the installation and operating instructions for more information about installation

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Mounting the infrared cable

The Split Unit Gateway is connected to the split unit using the supplied IR cable

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

The IR cable is plugged into the designated socket of the Gateway

Strain relief must be provided

The IR transmitter is affixed to the split unit's receiver using the double-sided adhesive tape

The correct position can be determined using the i-bus® Tool
(see commissioning – “i-bus® Tool: transmitter positioning”)

Important

- The bonding surface for the transmitter must be dry, clean and free from grease
- Processing must take place at room temperature (at least 10 °C)
- Press firmly into place
- The final adhesive force is reached after 24 h

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Installation steps

All poles must be disconnected when expanding or modifying the electrical connections

Connecting the line for KNX

Plug the IR cable into the designated socket of the Gateway and affix the IR transmitter to the split unit's receiver using the double-sided adhesive tape

Mounting the Gateway in a flush-mounted/surface housing

Connecting the bus voltage

- Starting the device
- The Split Unit Gateway is ready for operation and can be put into operation using the ETS

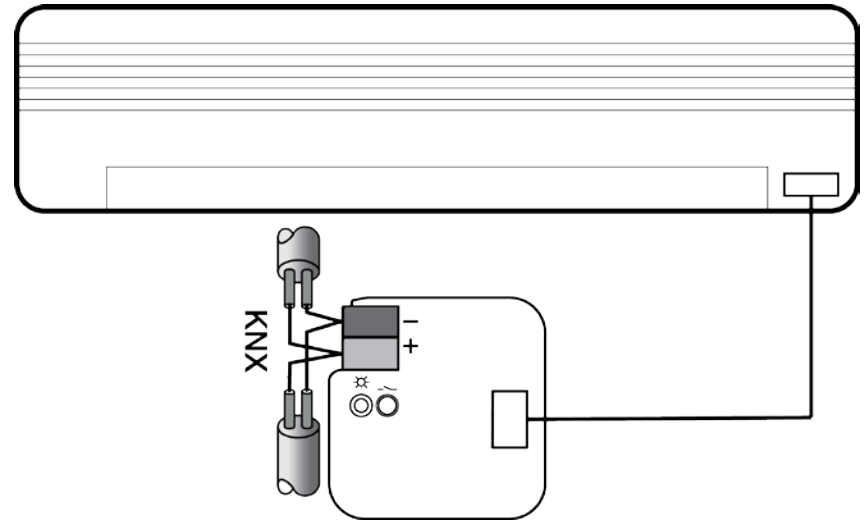


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing and troubleshooting

Test of the KNX bus voltage

- Press the programming button (4)
 - “Programming” LED lights up red: KNX is available; press the button again to switch off the LED
 - “Programming” LED (3) does not light up: KNX is not available
Check whether KNX is available (e.g. use a measuring instrument to measure the bus voltage between the red and black wires, 20-29 V DC)

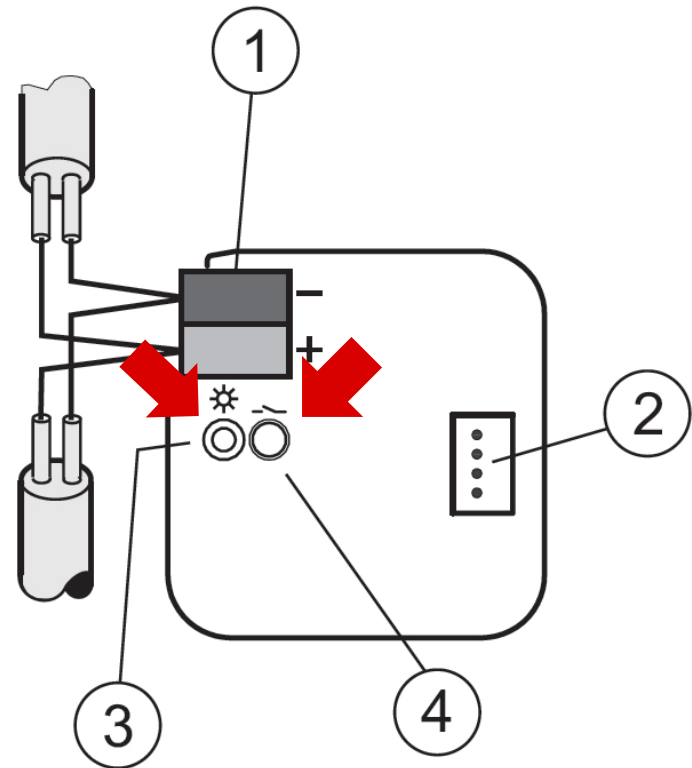


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 1

The Split Unit Gateway is suitable for installation

- A** In a flush-mounted or surface box
- B** In distributors on 35 mm mounting rail
- C** As plug-in module in Room Controller RC/A

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 1

The Split Unit Gateway is suitable for installation

- A In a flush-mounted or surface box
- B In distributors on 35 mm mounting rail
- C As plug-in module in Room Controller RC/A

Flush-mounted or surface box

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 2

How can operational readiness be checked?

- A** Press the “Manual operation” button for longer than 2 seconds. The “Programming” LED flashes green (slowly)
- B** After bus voltage recovery, the “Programming” LED flashes green until the device has been programmed for the first time
- C** The “Programming” LED lights up red when the programming button is pressed

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 2

How can operational readiness be checked?

- A Press the “Manual operation” button for longer than 2 seconds. The “Programming” LED flashes green (slowly)
- B After bus voltage recovery, the “Programming” LED flashes green until the device has been programmed for the first time
- C The “Programming” LED lights up red when the programming button is pressed

Press the programming button → LED lights up red

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 3

How is the Split Unit Gateway connected to the split unit device?

- A** The cable is plugged onto the analog slot of the main printed circuit board in the split unit
- B** The IR transmitter of the cable is affixed to the split unit's receiver using the double-sided adhesive tape
- C** The IR transmitter can be installed anywhere in the room (e.g. on the ceiling), and it can send IR commands to the split unit from up to 15 m away

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 3

How is the Split Unit Gateway connected to the split unit device?

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- C The IR transmitter can be installed anywhere in the room (e.g. on the ceiling), and it can send IR commands to the split unit from up to 15 m away

Affix the IR transmitter onto the split unit's receiver



ABB

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Commissioning

ETS4 or ETS5 and the current application of the device are required for programming

Ensure that the latest ETS application is used.
Download from www.abb.com/knx

In addition to the ETS application, you will require the “ABB SUG/U 1.1 Configuration” app for commissioning; this can be obtained free from the KNX Online Shop

The device possesses an interface to the i-bus® Tool (reading out data and checking functions)

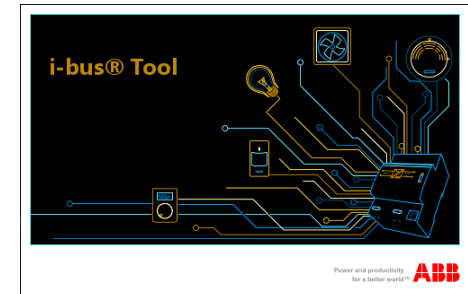
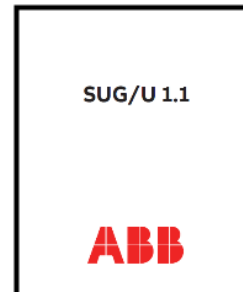


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS App “ABB SUG/U 1.1 Configuration”

Download the ETS App (ABBSUG.etsapp) and the license file (*.license) from the KNX Online Shop

In the ETS:

- Install the app
- Add license

The app appears in the menu “Extras” → “ABB” → “ABB SUG/U Configuration”

The IR databases of the split unit devices are also installed during this process

The IR database files are updated online in the app

The image contains two screenshots from the ETS software interface. The top screenshot shows the 'Apps' and 'Licenses' windows. In the 'Apps' window, a red box highlights the 'Install App' button, labeled with a circled '1'. Below it is a table of installed and available apps. In the 'Licenses' window, a red box highlights the 'Add a license' button, labeled with a circled '2'. The bottom screenshot shows the 'Extras' menu, labeled with a circled '3'. A red box highlights the 'ABB' sub-menu, labeled with a circled '4'. A further red box highlights the 'ABB SUG/U1.1 Configuration App' option, labeled with a circled '5'.

Name	Manufacturer	Version	License
ABB KNX Bus Update	ABB	1.0.37.0	
Compatibility Mode /	KNX Association	5.5.952.23148	
Device Reader	KNX Association		
EibLibIP	KNX Association		
Extended Copy	KNX Association		
IPPDataExchange	Busch Jaeger Elektro		
Label Creator	KNX Association		
Long Term Recorder	KNX Association		
My Products	KNX Association		
My TrainingscenterTo	KNX Association		
Online Catalog	KNX Association		

Name	Manufacturer	Version	License
KNX-F6002			
ETS App Device Reader			
ETS App Training Centre Tool			
ETS5 Professional			
Export for IP-Project			
Extended Copy			
KNX Bus Update			
Labels			
Long-term Recorder			

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS App “ABB SUG/U 1.1 Configuration”

The screenshot shows the ABB KNX website interface. At the top, there is a navigation bar with 'Shop', 'Support', 'My account', and 'Downloads'. Below this, the breadcrumb trail reads 'Homepage / Shop / ETS Apps'. The main content area displays the product 'ABB SUG/U 1.1 Configuration by ABB Stotz-Kontakt GmbH'. The product description states: 'This App is needed for configuration of the ABB SUG/U 1.1 Split Unit Gateway. The manufacturer of the split unit and the model of the remote are loaded into the ETS application. All SUG/U 1.1 in the project can be processed at the same time. The download into the device is done by normal ETS download.' The price is listed as 'TC Certified ISO Price €0', with 'VAT exclusive' and 'Plus shipping' noted. A 'Buy' button is visible at the bottom right of the product card. The ABB logo is prominently displayed at the bottom of the product image area.

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

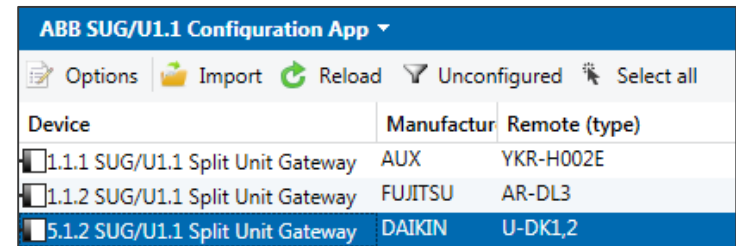
Commissioning

Add the Split Unit Gateway to the building or topology view

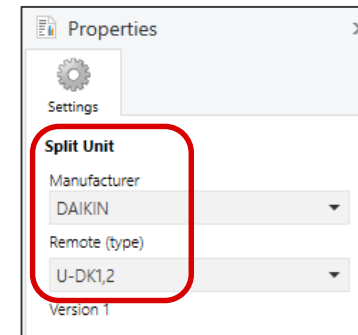
Click on the Gateway and start the app (menu “Extras” → “ABB” → “ABB SUG/U Configuration”)

Click the Gateway in the window of the “ABB SUG/U Configuration” app and select the remote control manufacturer and type in the “Properties” window

The functions supported by the split unit are displayed, and the IR codes of the selected remote control are adopted in the ETS application and parameters



Device	Manufacturer	Remote (type)
1.1.1 SUG/U1.1 Split Unit Gateway	AUX	YKR-H002E
1.1.2 SUG/U1.1 Split Unit Gateway	FUJITSU	AR-DL3
5.1.2 SUG/U1.1 Split Unit Gateway	DAIKIN	U-DK1,2



Properties

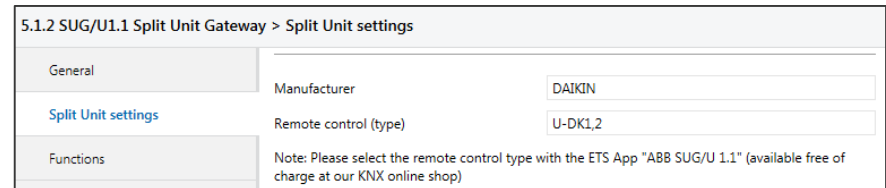
Settings

Split Unit

Manufacturer
DAIKIN

Remote (type)
U-DK1,2

Version 1



5.1.2 SUG/U1.1 Split Unit Gateway > Split Unit settings

General	Manufacturer	DAIKIN
Split Unit settings	Remote control (type)	U-DK1,2
Functions	Note: Please select the remote control type with the ETS App "ABB SUG/U 1.1" (available free of charge at our KNX online shop)	

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS App “ABB SUG/U 1.1 Configuration”

The screenshot shows the ETS software interface for configuring an ABB SUG/U 1.1 Split Unit Gateway. The configuration is divided into several sections:

- (1)** Topology tree: Shows the device being configured.
- (2)** ABB SUG/U 1.1 Configuration App: A sub-window for detailed configuration.
- (3)** Configuration Table: A table listing installed devices.
- (4)** Properties Panel: Shows the configuration for the selected device, including Manufacturer (DAIKIN) and Remote control type (U-DK1,2).
- (5)** Remote control type: A dropdown menu showing the selected type.
- (6)** Operating modes: A section for configuring operating modes and fan speeds.
- (7)** Split Unit settings: A section for configuring split unit settings.

On the right side, there are two lists of manufacturers and their corresponding remote control types:

BLUESTAR	APGS02
CANDOR	ARC433A24
CARRIER	ARC433A25
CHIGO	ARC433A46
DAIKIN	ARC433A73
FUJITSU	ARC433B71
HITACHI	ARC470A12
IFB	ARC470A25
LG	ARC479A20
MITSUBISHI	ECGS01-i
OGENERAL	NOMODEL_1
PANASONIC	U-DK1,2
SAMSUNG	U-DK3,4,5
SANYO	U-DK-6
TOSHIBA	U-DK-7
VIDEOCON	U-DK8
VOLAS	U-DK9

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Commissioning

Set the parameters as required depending on the supported split unit functions (see “Parameters” window)

Create group addresses and link with the objects

Program the physical address and load the application

Test the

- Settings and parameters in the Split Unit Gateway (i-bus® Tool)
- Functional implementation
Control element/sensor – Split Unit Gateway
– split unit device

5.1.2 SUG/U1.1 Split Unit Gateway > General	
General	
Split Unit settings	Sending delay after bus voltage recovery, download and ETS reset: 2 s
Functions	Limit number of telegrams: <input checked="" type="radio"/> No <input type="radio"/> Yes
Forced operation	Enable group object "In operation", 1 bit: <input checked="" type="radio"/> No <input type="radio"/> Yes
Window contact	

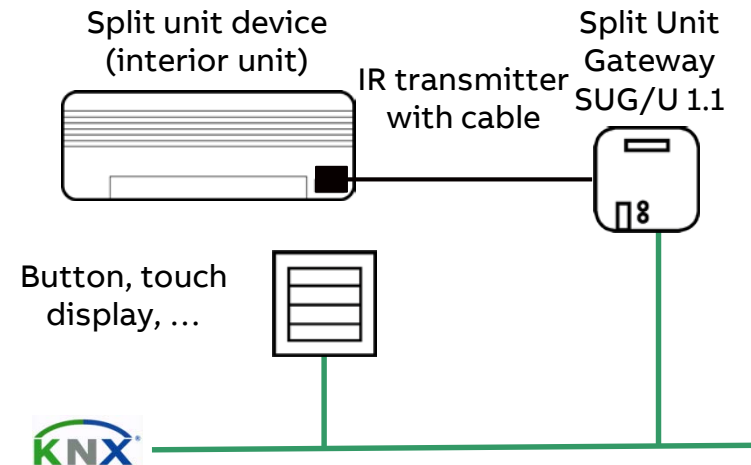


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – General

5.1.2 SUG/U1.1 Split Unit Gateway > General

General

Split Unit settings

Functions

Forced operation

Window contact

Presence

Scenes

Boost

Status objects

Sending delay after bus voltage recovery, download and ETS reset: 2 s

Limit number of telegrams: No Yes

Enable group object "In operation", 1 bit: No Yes

Sending: Value 0 Value 1

Sending cycle time: 60 s

Enable group object "Request status values" 1 bit: No Yes

Request with object value: 1

Reaction after bus voltage recovery, download and ETS reset: Do not repeat last infrared command

Access with i-bus Tool: Read and write

Note: The i-bus tool is an optional diagnosis tool that is available free of charge on our website.

Do not repeat last infrared command

Repeat last infrared command

User-defined

Disabled

Read only request

Read and write

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Split unit settings

5.1.2 SUG/U1.1 Split Unit Gateway > Split Unit settings

General	Manufacturer	DAIKIN
Split Unit settings	Remote control (type)	U-DK1,2
Functions	Note: Please select the remote control type with the ETS App "ABB SUG/U 1.1" (available free of charge at our KNX online shop)	
Forced operation	Limit setpoint temperature range	<input checked="" type="radio"/> No <input type="radio"/> Yes
Window contact	Control fan speed with object	1 Bit up/down and 1 byte
Presence	Coding of 1 byte	<input type="radio"/> 0%=Auto, 1-33%=Low, 34-66%=Med, >66%=... <input checked="" type="radio"/> 0=Auto, 1=Low, 2=Med, 3=High
Scenes	Note: If the Split Unit supports more than 3 fan speeds, only 3 speeds are mapped to Low/Med/High.	
Boost	Note: The ETS App shows how the fan speeds are mapped.	
Status objects	Send infrared commands	<input checked="" type="radio"/> Only if calculated change <input type="radio"/> Always
	Enable "Simplified mode"	<input checked="" type="radio"/> No <input type="radio"/> Yes
	Enable "Silent mode"	<input checked="" type="radio"/> No <input type="radio"/> Yes
	Enable "Swing" (horizontal and vertical)	<input checked="" type="radio"/> No <input type="radio"/> Yes
	Note: Simplified mode, Silent mode and Swing must be supported by the Split Unit.	
	Enable "On/Off delay" function	<input type="radio"/> No <input checked="" type="radio"/> Yes
	On/Off delay	10 min

1 Bit up/down
1 byte
1 Bit up/down and 1 byte

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Functions

5.1.2 SUG/U1.1 Split Unit Gateway > Functions

General	
Split Unit settings	
Functions	
Forced operation	
Window contact	
Presence	
Scenes	
Boost	
Status objects	

Note: function priority

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

Enable "Forced operation" function	<input type="radio"/> No	<input checked="" type="radio"/> Yes
Enable "Window contact" function	<input type="radio"/> No	<input checked="" type="radio"/> Yes
Enable "Presence" function	<input type="radio"/> No	<input checked="" type="radio"/> Yes
Enable "Scene" function	<input type="radio"/> No	<input checked="" type="radio"/> Yes
Enable "Boost" function	<input type="radio"/> No	<input checked="" type="radio"/> Yes

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Forced operation

5.1.2 SUG/U1.1 Split Unit Gateway > Forced operation

General	Split Unit On/Off	On
Split Unit settings	Setpoint temperature	21 °C
Functions	Operation mode	Auto
Forced operation	Fan speed	Auto
Window contact	Vertical Swing	Off
Presence	Horizontal Swing	Off
Scenes	Silent Mode	Off
Boost		
Status objects		

Off
On
Unchanged

Auto
Heating
Cooling
Fan
Drying
Unchanged

Auto
Low
Medium
High
Unchanged

Off
On
Unchanged

21
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
Unchanged

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Window contact

5.1.2 SUG/U1.1 Split Unit Gateway > Window contact

General	
Split Unit settings	
Functions	
Forced operation	
Window contact	
Presence	
Scenes	
Boost	
Status objects	

Delay switching off window (0 = deactivated) 10 min

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Presence

5.1.2 SUG/U1.1 Split Unit Gateway > Presence

General	Reaction on "Presence" = 1		
Split Unit settings	Monitoring time (0 = deactivated)	60	s
Functions	Split Unit On/Off	On	Off On Unchanged
Forced operation	Setpoint temperature	21	21
Window contact	Operation mode	Auto	Auto Heating Cooling Fan Drying Unchanged
Presence	Fan speed	Auto	Auto Low Medium High Unchanged
Scenes	Vertical Swing	Off	Off On Unchanged
Boost	Horizontal Swing	Off	
Status objects	Silent mode	Off	
	Reaction on "Presence" = 0 or end of monitoring time		
	Split Unit On/Off	Off	

21
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
Unchanged

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Scenes

5.1.2 SUG/U1.1 Split Unit Gateway > Scenes

General	Overwrite scenes on download <input type="radio"/> No <input checked="" type="radio"/> Yes
Split Unit settings	
Functions	Assignment 1 to scene number 1...64 <input type="text" value="Scene 2"/>
Forced operation	Split Unit On/Off <input type="text" value="On"/>
Window contact	Setpoint temperature <input type="text" value="21"/> °C
Presence	Operation mode <input type="text" value="Auto"/>
Scenes	Fan speed <input type="text" value="Auto"/>
Boost	Vertical Swing <input type="text" value="Off"/>
Status objects	Horizontal Swing <input type="text" value="Off"/>
	Silent mode <input type="text" value="Off"/>
	Assignment 2 to scene number 1...64 <input type="text" value="Scene 9"/>
	Split Unit On/Off <input type="text" value="On"/>
	Setpoint temperature <input type="text" value="19"/> °C
	Operation mode <input type="text" value="Cooling"/>

Scene 1
Scene 2
Scene 3
Scene
Scene 62
Scene 63
Scene 64

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Boost

5.1.2 SUG/U1.1 Split Unit Gateway > Boost

General	
Split Unit settings	
Functions	
Forced operation	
Window contact	
Presence	
Scenes	
Boost	
Status objects	

Boost function duration min

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

ETS parameters – Status objects

5.1.2 SUG/U1.1 Split Unit Gateway > Status objects

General	Send status values	On change
Split Unit settings	Send status values after bus voltage recovery, download and ETS reset	<input type="radio"/> No <input checked="" type="radio"/> Yes
Functions	Enable group object "Status On/Off" 1-bit	<input type="radio"/> No <input checked="" type="radio"/> Yes
Forced operation	Enable group object "Status setpoint temperature" 2 bytes	<input type="radio"/> No <input checked="" type="radio"/> Yes
Window contact	Enable group object "Status operating mode" 1 byte	<input type="radio"/> No <input checked="" type="radio"/> Yes
Presence	Enable group object "Status fan speed" 1 byte	<input type="radio"/> No <input checked="" type="radio"/> Yes
Scenes	Enable group object "Status forced operation" 1-bit	<input type="radio"/> No <input checked="" type="radio"/> Yes
Boost	Enable group object "Status window contact" 1 Bit	<input type="radio"/> No <input checked="" type="radio"/> Yes
Status objects	Enable group object "Status presence" 1-bit	<input type="radio"/> No <input checked="" type="radio"/> Yes
	Enable group object "Status boost" 1-bit	<input type="radio"/> No <input checked="" type="radio"/> Yes

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

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

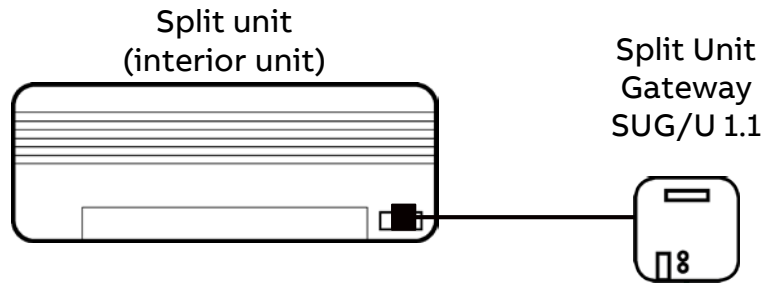
ETS group objects

Number	Name	Object Function	Length	C	R	W	T	U	Data Type
1	General	In operation	1 bit	C	R	-	T	-	boolean
2	General	Request status values	1 bit	C	-	W	-	-	trigger
3	Split Unit	Fan speed	1 byte	C	-	W	-	-	counter pulses (0..255)
4	Split Unit	Status fan speed	1 byte	C	R	-	T	-	counter pulses (0..255)
5	Split Unit	Fan up/down	1 bit	C	-	W	-	-	step
6	Split Unit	Operating mode	1 byte	C	-	W	-	-	HVAC control mode
7	Split Unit	Status operating mode	1 byte	C	R	-	T	-	HVAC control mode
8	Split Unit	Simplified mode	1 bit	C	-	W	-	-	cooling/heating
9	Split Unit	Silent mode	1 bit	C	-	W	-	-	boolean
10	Split Unit	Status silent mode	1 bit	C	R	-	T	-	boolean
11	Function	Scene	1 byte	C	-	W	-	-	scene control
12	Split Unit	On/Off	1 bit	C	-	W	-	-	switch
13	Split Unit	Status On/Off	1 bit	C	R	-	T	-	switch
14	Split Unit	Deactivate On/Off delay	1 bit	C	R	W	-	-	enable
15	Function	Forced operation	1 bit	C	-	W	-	-	enable
16	Function	Status forced operation	1 bit	C	R	-	T	-	enable
17	Function	Window contact	1 bit	C	-	W	-	-	window/door
18	Function	Status window contact	1 bit	C	R	-	T	-	window/door
19	Function	Presence	1 bit	C	-	W	-	-	occupancy
20	Function	Status presence	1 bit	C	R	-	T	-	occupancy
21	Split Unit	Setpoint temperature	2 bytes	C	-	W	-	-	temperature (°C)
22	Split Unit	Status setpoint temperature	2 bytes	C	R	-	T	-	temperature (°C)
23	Split Unit	Setpoint temperature up/down	1 bit	C	-	W	-	-	step
24	Split Unit	Deactivate setpoint temperature L...	1 bit	C	R	W	-	-	enable
25	Split Unit	Vertical swing	1 bit	C	-	W	-	-	switch
26	Split Unit	Status vertical swing	1 bit	C	R	-	T	-	switch
27	Split Unit	Horizontal swing	1 bit	C	-	W	-	-	switch
28	Split Unit	Status horizontal swing	1 bit	C	R	-	T	-	switch
29	Function	Boost	1 bit	C	-	W	-	-	switch
30	Function	Status boost	1 bit	C	R	-	T	-	switch

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Functional description of operation

Rocker switch 1	On/Off
Rocker switch 2	Fan up/down
Rocker switch 3	Setpoint temp. 19 °C and 21 °C
Rocker switch 4	Setpoint temp. 23 °C and 25 °C



Number	Group	Name	Object Function	Length
1	4212	S1.1: Switching	Input / output	1 bit
5	4213	LED1.1: Status	Input	1 bit
10	4213	LED1.2: Status	Input	1 bit
15	4205	S2.1: Switching	Input / output	1 bit
29	4221	S3.1: Value switching	Input / output	2 bytes
43	4221	S4.1: Value switching	Input / output	2 bytes

Button,
touch display, ...



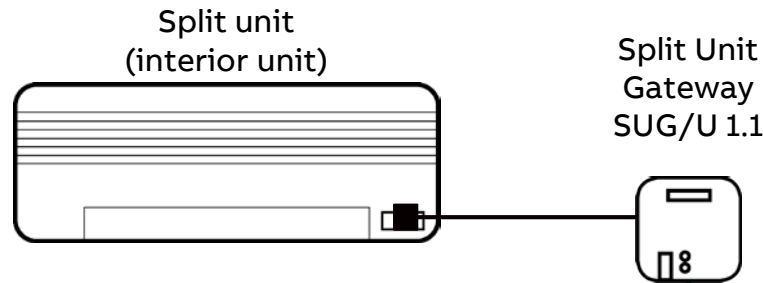
Number	Group	Name	Object Function	Length
5	4205	Split Unit	Fan up/down	1 bit
6		Split Unit	Operating mode	1 byte
12	4212	Split Unit	On/Off	1 bit
13	4213	Split Unit	Status On/Off	1 bit
21	4221	Split Unit	Setpoint temperature	2 bytes
23		Split Unit	Setpoint temperature up/down	1 bit



ABB i-bus KNX Split Unit Gateway SUG/U 1.1

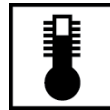
Functional description of operation

Rocker switch 1	On/Off
Rocker switch 2	Setpoint adjustment
Rocker switch 3	Fan up/down



Nun	Group	Name	Object Function	Length
3		Cooling control value	Output	1 bit
6		Actual temperature	Output	2 bytes
11	4221	actual set value	Output	2 bytes
12		Operating mode	Input / output	1 byte
13		Superimposed operating mode	Input	1 byte
35		Fahrenheit	Input	1 bit
47		Commissioned	Output	1 bit
50	4212	rocker 1	switching	1 bit
74	4205	rocker 3	switching	1 bit
200	4213	LED 1	status	1 bit

Room thermostat



Nun	Group	Name	Object Function	Length
5	4205	Split Unit	Fan up/down	1 bit
6		Split Unit	Operating mode	1 byte
12	4212	Split Unit	On/Off	1 bit
13	4213	Split Unit	Status On/Off	1 bit
21	4221	Split Unit	Setpoint temperature	2 bytes
23		Split Unit	Setpoint temperature up/down	1 bit



ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Functional description of window contact

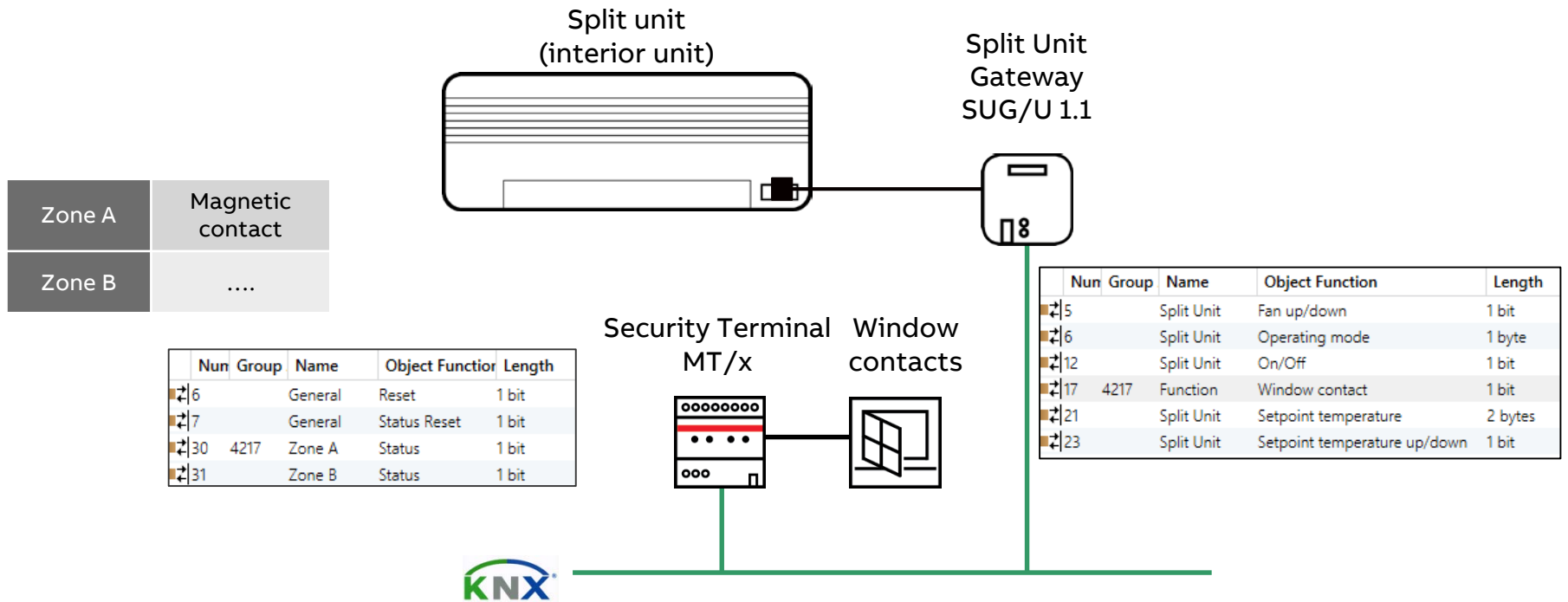


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Functional description of presence

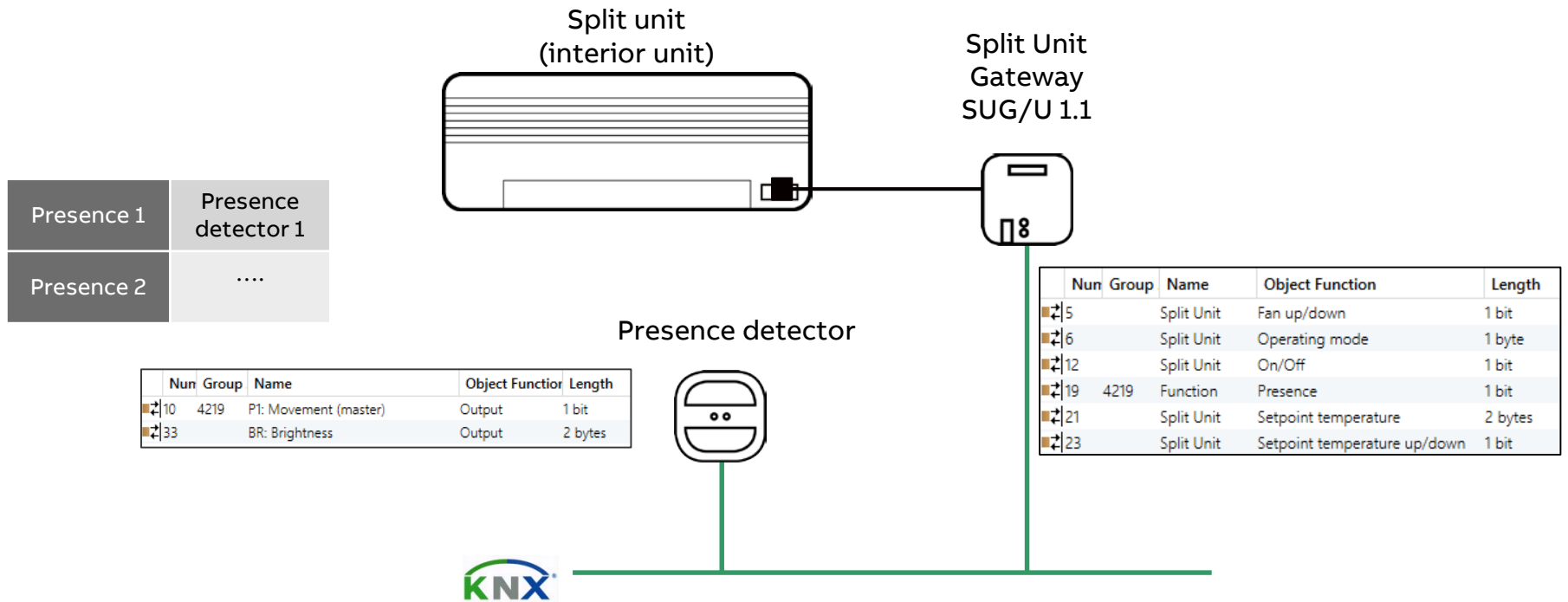


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Function description of scenes

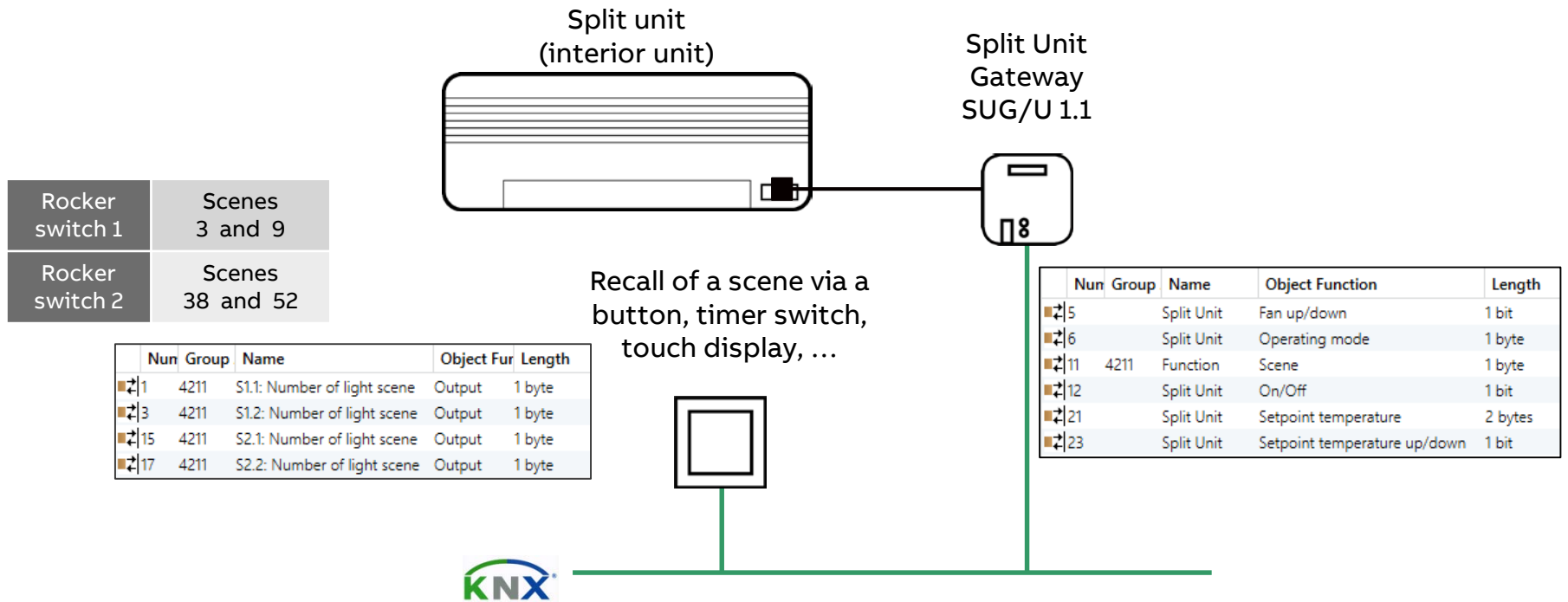
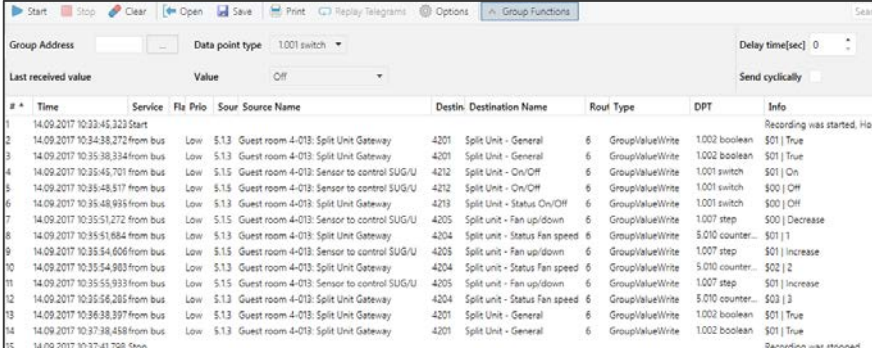


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing and troubleshooting

- i-bus® Tool
- ETS group/bus monitor (status values)
- ETS application version
- Smartphone camera



The screenshot shows the 'Group Functions' window in the i-bus Tool. It displays a table of received data points. The table has columns for #, Time, Service, Flz, Prio, Sour, Source Name, Destin, Destination Name, Rout, Type, DPT, and Info. The data points are recorded from 14.09.2017 10:33:45.223 to 14.09.2017 10:37:41.798. The 'Value' field is set to 'Off'.

#	Time	Service	Flz	Prio	Sour	Source Name	Destin	Destination Name	Rout	Type	DPT	Info
1	14.09.2017 10:33:45.223	Start										Recording was started, Hi
2	14.09.2017 10:34:38.272	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
3	14.09.2017 10:35:38.334	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
4	14.09.2017 10:35:45.701	from bus	Low	5.15		Guest room 4-019: Sensor to control SUG/U	4212	Split Unit - On/Off	6	GroupValueWrite	1.001 switch	\$01 On
5	14.09.2017 10:35:48.517	from bus	Low	5.15		Guest room 4-019: Sensor to control SUG/U	4212	Split Unit - On/Off	6	GroupValueWrite	1.001 switch	\$01 Off
6	14.09.2017 10:35:48.935	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4219	Split Unit - Status On/Off	6	GroupValueWrite	1.001 switch	\$01 Off
7	14.09.2017 10:35:51.272	from bus	Low	5.15		Guest room 4-019: Sensor to control SUG/U	4205	Split unit - Fan up/down	6	GroupValueWrite	1.007 step	\$01 Decrease
8	14.09.2017 10:35:51.684	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4204	Split unit - Status Fan speed	6	GroupValueWrite	5.010 counter...	\$01 1
9	14.09.2017 10:35:54.606	from bus	Low	5.15		Guest room 4-019: Sensor to control SUG/U	4205	Split unit - Fan up/down	6	GroupValueWrite	1.007 step	\$01 Increase
10	14.09.2017 10:35:54.983	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4204	Split unit - Status Fan speed	6	GroupValueWrite	5.010 counter...	\$02 2
11	14.09.2017 10:35:55.933	from bus	Low	5.15		Guest room 4-019: Sensor to control SUG/U	4205	Split unit - Fan up/down	6	GroupValueWrite	1.007 step	\$01 Increase
12	14.09.2017 10:35:56.285	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4204	Split unit - Status Fan speed	6	GroupValueWrite	5.010 counter...	\$03 3
13	14.09.2017 10:36:38.397	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
14	14.09.2017 10:37:38.458	from bus	Low	5.13		Guest room 4-019: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
15	14.09.2017 10:37:41.798	Stop										Recording was stopped

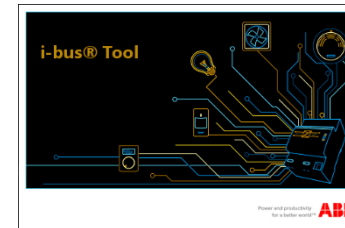


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing and troubleshooting: i-bus® Tool

A professional service tool

- Internal information and states of the device hardware and application that were not previously available or were available only after considerable effort are now shown in a transparent manner
- The i-bus® Tool is optional, i.e. the KNX devices must still be commissioned using the ETS
- The i-bus® Tool connects to the physical address of a KNX device via the standard interface (USB, IP)
- It is then possible to trigger the desired functions, read values, simulate states and make settings for the connected device in a targeted manner

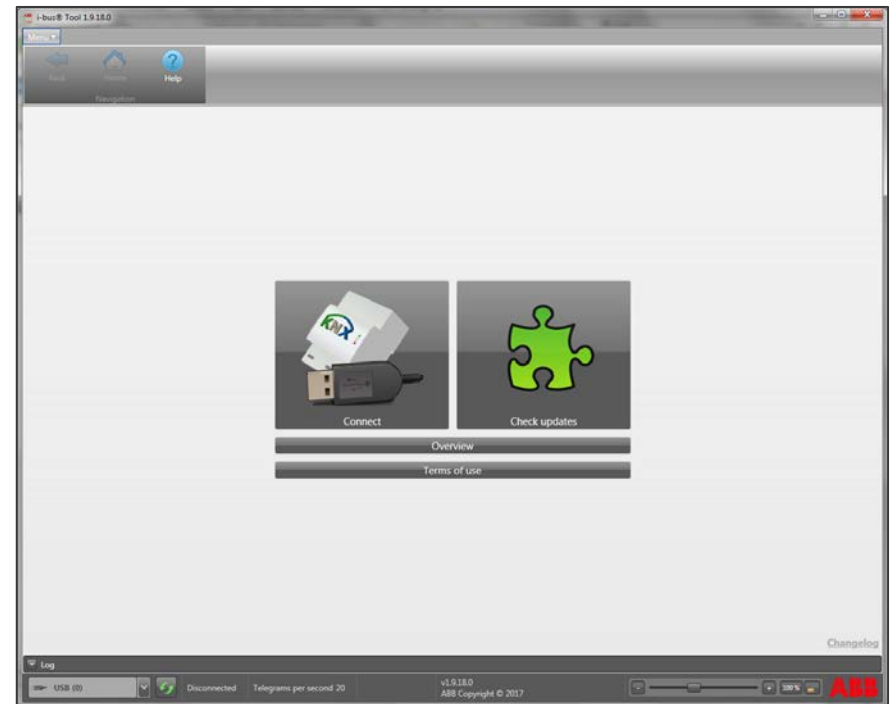


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – entering the physical address and connecting

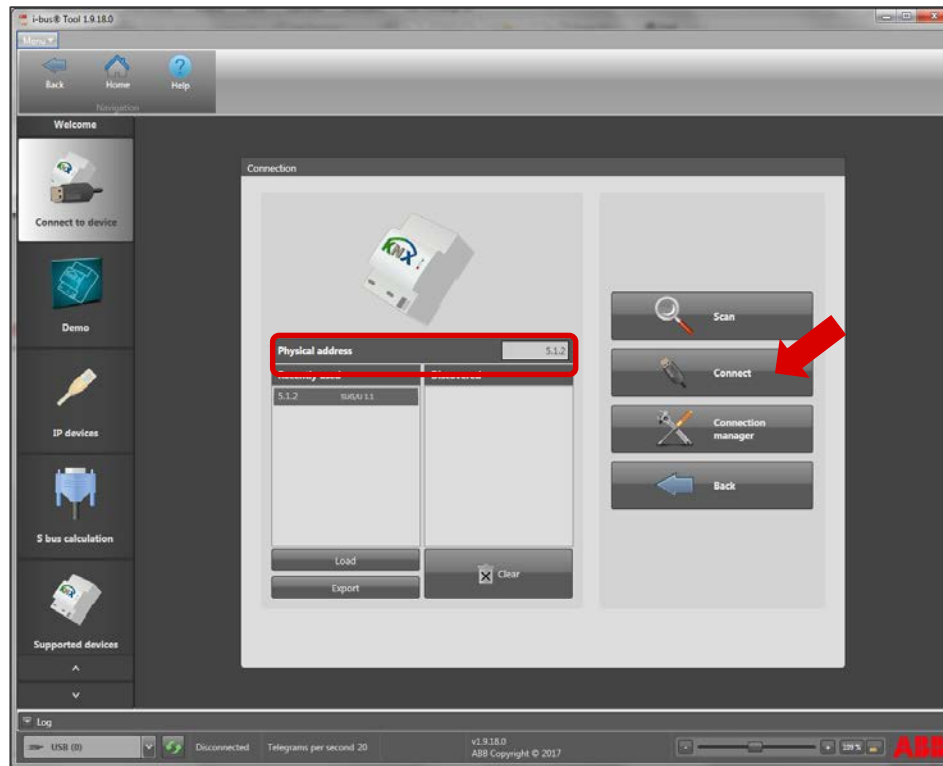


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – display of supported functions of the remote control

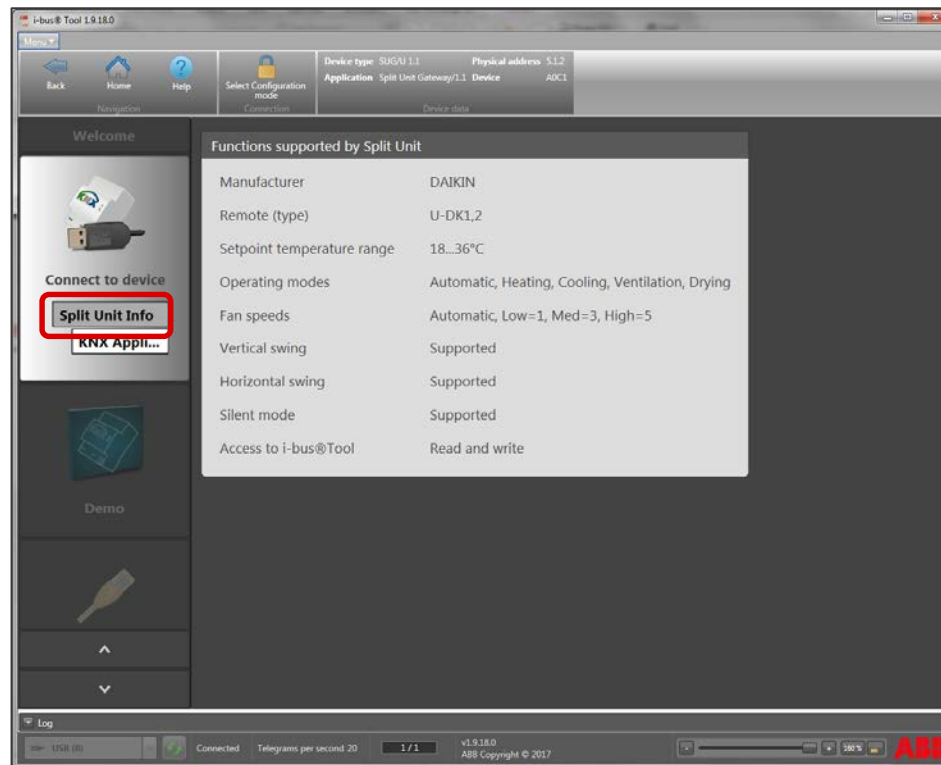


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – display of supported functions of the remote control

Manufacturer/remote control (type)

- The manufacturer and type of remote control are shown here

Setpoint temperature range

- Displays the setpoint temperature range supported by the split unit
- This can differ from the parameterization in the ETS
- Example:
The split unit supports 16...32 °C, but the setpoint temperature range has been restricted in the ETS, e.g. 18...24 °C. The Split Unit Gateway sends a maximum setpoint value of 24° C when in heating mode

Operating modes

- The operating modes supported by the split unit are displayed
- Some models do not support all operating modes

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – display of supported functions of the remote control

Fan speeds

- If a Split Unit does not have exactly three fan speeds, the fan speeds will be mapped to the corresponding group objects
- Example:
The split unit supports five fan speeds. In this case, speed 1 is assigned as LOW, speed 3 as MED and speed 5 as HIGH. Speeds 2 and 4 cannot be controlled with the Split Unit Gateway

Slat adjustment

- Display of whether the split unit supports horizontal or vertical swing

Silent Mode

- Display of whether the split unit supports Silent Mode

Access with i-bus® Tool

- Access to the device can be restricted in the ETS via parameters

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – status indication and operating various functions

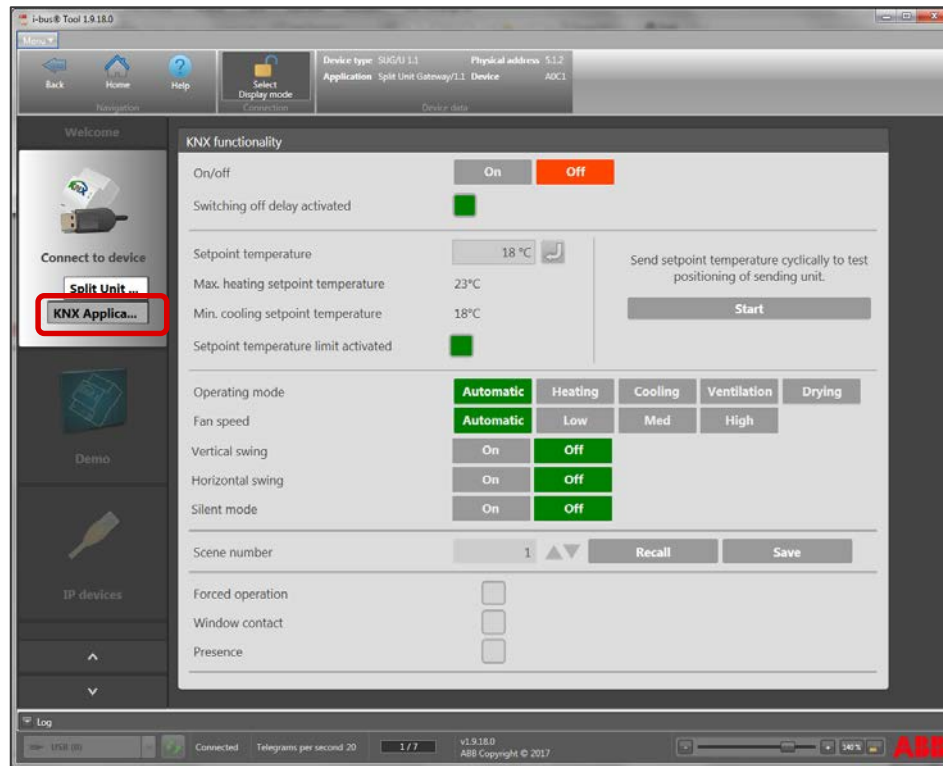


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – status indication and operating various functions

If a button is highlighted green, the corresponding function is active

If a function is grayed out, it is not enabled in the ETS or is not supported by the split unit

If a priority is activated (forced operation, window contact), all functions with a lower priority are disabled (lock symbol)

Note: Access to the device must be enabled via a parameter in the ETS for operation

On/Off

- The split unit can be switched on and off via this button

Setpoint temperature

- The current setpoint temperature is displayed here and can be set

Max. heating setpoint temperature/Min. cooling setpoint temperature

- The setpoint limit parameterized in the ETS is displayed
- The green LED shows whether the limit is activated or deactivated via the object “Deactivate setpoint temperature limit”.

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing with the i-bus® Tool – status indication and operating various functions

Send setpoint temperature cyclically...

- The transmitter of the Split Unit Gateway must be correctly positioned on the receiver of the split unit. This function can be used to check whether the transmitter is installed in the correct place

Operating mode, Fan speed, Swing, Silent Mode

- The respective functions can be operated here, and the status is displayed

Scene number

- The set scene can be recalled or saved
- The prerequisite is that the corresponding scene number is parameterized in the ETS

Forced operation/Window contact/Presence

- The function Forced operation can be activated/deactivated

After disconnection from the i-bus® tool, the state before connection is restored.

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

i-bus® Tool: positioning the IR transmitter

The IR transmitter of the Split Unit Gateway must be correctly positioned on the receiver of the split unit

The function “Send temperature cyclically...” enables cyclical values to be sent, which are then confirmed by the split unit with an acknowledgment tone

This makes it possible to check whether the transmitter is in the correct position before it is affixed

30 telegrams are sent at intervals of 4 seconds (2 minutes)

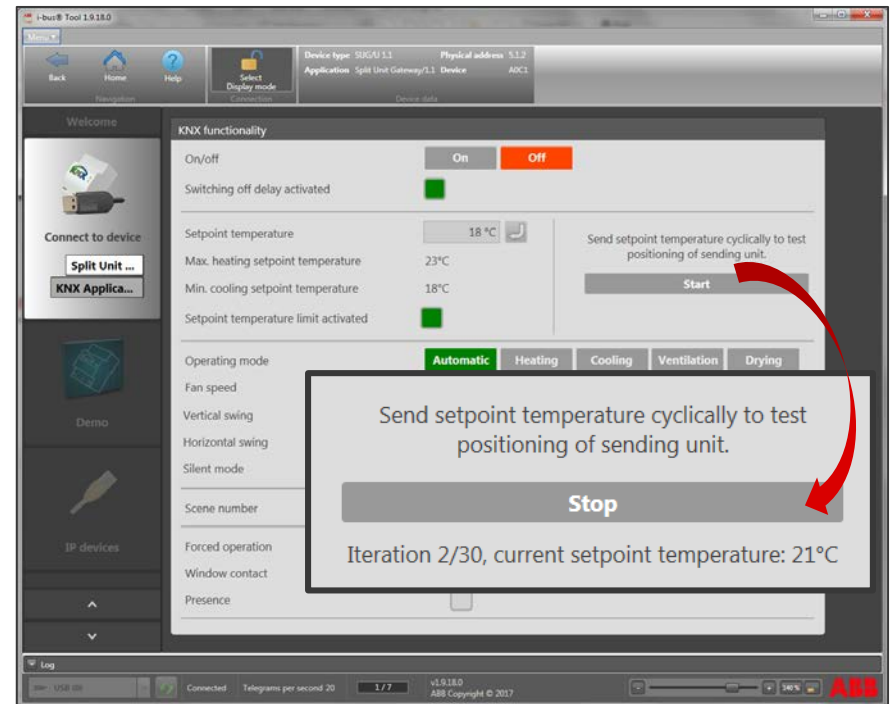


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing and troubleshooting: ETS monitor

ETS group/bus monitor

- ETS group monitor can receive and send group telegrams
- ETS bus monitor can only receive group telegrams
- Send telegrams (e.g. control element or group monitor) and evaluate status telegrams sent by the Split Unit Gateway

# *	Time	Service	Fla	Prio	Sour	Source Name	Destin	Destination Name	Rout	Type	DPT	Info
1	14.09.2017 10:33:45,323	Start										Recording was started, Hos
2	14.09.2017 10:34:38,272	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
3	14.09.2017 10:35:38,334	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
4	14.09.2017 10:35:45,701	from bus	Low	5.1.5		Guest room 4-013: Sensor to control SUG/U	4212	Split Unit - On/Off	6	GroupValueWrite	1.001 switch	\$01 On
5	14.09.2017 10:35:48,517	from bus	Low	5.1.5		Guest room 4-013: Sensor to control SUG/U	4212	Split Unit - On/Off	6	GroupValueWrite	1.001 switch	\$00 Off
6	14.09.2017 10:35:48,935	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4213	Split Unit - Status On/Off	6	GroupValueWrite	1.001 switch	\$00 Off
7	14.09.2017 10:35:51,272	from bus	Low	5.1.5		Guest room 4-013: Sensor to control SUG/U	4205	Split unit - Fan up/down	6	GroupValueWrite	1.007 step	\$00 Decrease
8	14.09.2017 10:35:51,684	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4204	Split unit - Status Fan speed	6	GroupValueWrite	5.010 counter...	\$01 1
9	14.09.2017 10:35:54,606	from bus	Low	5.1.5		Guest room 4-013: Sensor to control SUG/U	4205	Split unit - Fan up/down	6	GroupValueWrite	1.007 step	\$01 Increase
10	14.09.2017 10:35:54,983	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4204	Split unit - Status Fan speed	6	GroupValueWrite	5.010 counter...	\$02 2
11	14.09.2017 10:35:55,933	from bus	Low	5.1.5		Guest room 4-013: Sensor to control SUG/U	4205	Split unit - Fan up/down	6	GroupValueWrite	1.007 step	\$01 Increase
12	14.09.2017 10:35:56,285	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4204	Split unit - Status Fan speed	6	GroupValueWrite	5.010 counter...	\$03 3
13	14.09.2017 10:36:38,397	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
14	14.09.2017 10:37:38,458	from bus	Low	5.1.3		Guest room 4-013: Split Unit Gateway	4201	Split Unit - General	6	GroupValueWrite	1.002 boolean	\$01 True
15	14.09.2017 10:37:41,798	Stop										Recording was stopped

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing and troubleshooting: application

ETS application version

- Check the ETS application version
 - Properties
 - Information
 - Application program
- The latest version is available at:
www.abb.com/knx

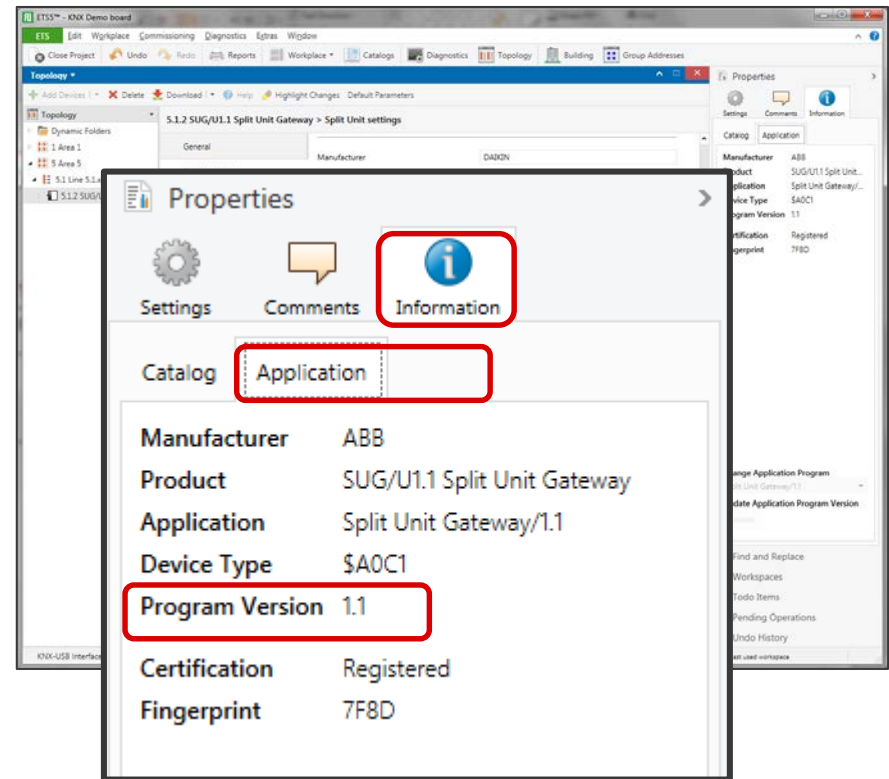


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Testing and troubleshooting: smartphone camera

Important: This test function depends on the smartphone manufacturer and model!

The photo chip in a smartphone senses more than human eye can, and it also detects IR light. Smartphones usually have an IR blocking filter, but the signal from a transmitter held in front of the lens can nevertheless still be seen in camera recording mode.

A light lights up in the smartphone display if IR radiation is present (KNX command to the Split Unit Gateway or with the test function of the i-bus® Tool, “Send temperature cyclically...”)

It is recommended to use the front camera. Its equipment quality is not as high, and it does not possess an infrared filter.

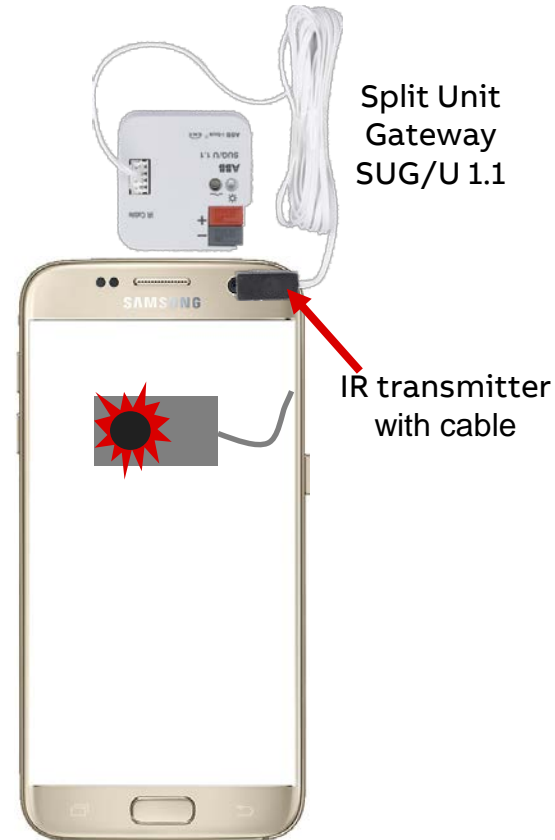


ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 1

The ETS App “ABB SUG/U 1.1” ...

- A** Allows the split unit to be operated via a smartphone or tablet
- B** Is required in addition to the ETS application during commissioning. The IR codes of the selected remote control are adopted in the ETS.
- C** Reads the supported functions from the split unit and forwards them to the ETS for parameterization

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 1

The ETS App “ABB SUG/U 1.1” ...

- A Allows the split unit to be operated via a smartphone or tablet
- B Is required in addition to the ETS application during commissioning. The IR codes of the selected remote control are adopted in the ETS.
- C Reads the supported functions from the split unit and forwards them to the ETS for parameterization

Adoption of the IR remote control data in the ETS

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 2

The function “Forced operation” ...

- A** Can be activated by recalling scene 1...64
- B** Establishes the parameterized state of the split unit, and operation via objects with lower priority is then disabled
- C** Always switches the split unit off. A switching OFF delay can also be parameterized

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 2

The function “Forced operation” ...

- A Can be activated by recalling scene 1...64
- B** Establishes the parameterized state of the split unit, and operation via objects with lower priority is then disabled
- C Always switches the split unit off. A switching OFF delay can also be parameterized

Parameterized state

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 3

The i-bus® Tool can be used to ...

- A** Display information or status values of the Split Unit Gateway and trigger or test desired functions
- B** Set the parameters or connect group addresses in a device independently of the ETS4 or ETS5
- C** Perform a faster download of the application than the ETS

ABB i-bus KNX Split Unit Gateway SUG/U 1.1

Which answer is correct?

Question 3

The i-bus® Tool can be used to ...

- A** Display information or status values of the Split Unit Gateway and trigger or test desired functions
- B** Set the parameters or connect group addresses in a device independently of the ETS4 or ETS5
- C** Perform a faster download of the application than the ETS

Trigger functions, read values, simulate states, ...

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