Smart Panel
Art.-No.: SP 9 KNX

Operating instructions

1 Safety instructions

Electrical equipment may only be installed and fitted by electrically skilled persons.

Serious injuries, fire or property damage possible. Please read and follow manual fully.

Danger of electric shock. Always disconnect device before working on it. At the same time, take into account all circuit breakers that supply dangerous voltage to the device.

Do not operate the device with sharp or pointed objects. The touch-sensitive surface could be damaged.

Do not use any sharp objects, acids or organic solvents for cleaning. Device can be damaged.

These instructions are an integral part of the product, and must remain with the end customer.
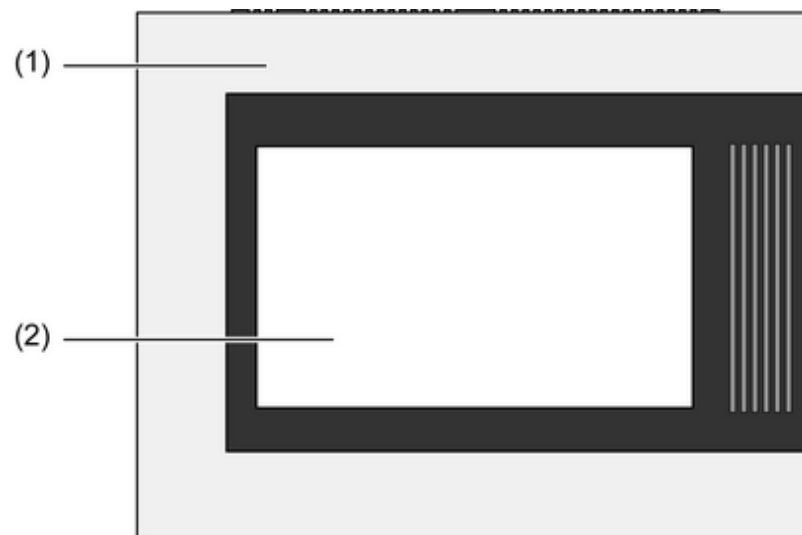
2 Device components
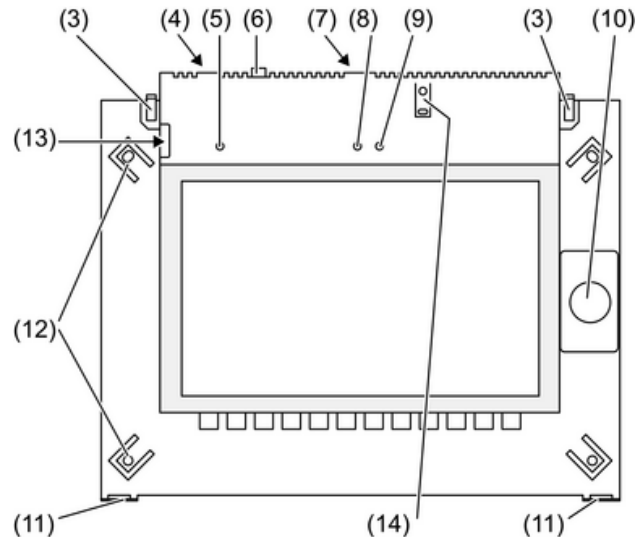

Figure 1: Front view with frame

Figure 2: Front view without frame

(1) Design frame
(2) Touchscreen surface
(3) Locks for Design frame
(4) USB connection
(5) Internal microphone
(6) On/off push-button
(7) Slot for SD memory card
(8) Internal camera
(9) Camera operating display
(10) Internal loudspeaker
(11) Bracket for Design frame
(12) 4 brackets for wall fastening
(13) Service interface
(14) Programming button and LEDs

3 Function

System information

This device is a product of the KNX system and complies with the KNX directives. Detailed technical knowledge obtained in KNX training courses is a prerequisite to proper understanding.

The planning, installation and commissioning of the device are performed using external configuration software. The latest versions of the software and the technical descriptions are available on our website.

Intended use

- Operation and visualisation of system statuses and information on building automation
- Displaying information services
- Concealed mounting in interior areas

Product characteristics

- Illuminated graphic colour screen TFT, 800x480 pixels, 16.7 million colours
- Touchscreen
- Operating system: Windows® Embedded Standard 2009
- Integrated camera
- Integrated loudspeaker

- Integrated microphone
- KNX Interface
- Interfaces – accessible from front: 1x USB, 1x SD memory card
- Interfaces – accessible from rear: 2x USB, Ethernet, Stereo Audio-In, Stereo Audio-Out, Video-In
- Graphical user interface for visualization and operation of KNX devices
- KNX special functions, e.g. scenes, forced position, timer, presence simulation

[i] The KNX user functions remain active even when the device is switched off.

[i] When connected to an IP-/Ethernet network, additional services are available, e.g. Internet browser.

[i] When installing additional software or saving data, note the system resources.

Operating system: Windows Embedded

The operating system is based on Microsoft® Windows® XP Professional in a memory-optimised version. All the components required for the device function are preinstalled. Additional drivers or programs can be installed later if required.

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4 Operation

Switching a device on or off

■ Switching on: Press the push-button (6).

   The device switches on after about 2 seconds.

   The device is started.

■ Switching off: Press the push-button (6) twice briefly.

   After pressing the push-button the first time, the KNX application is terminated. After pressing the push-button the second time, the operating system shuts down and switches off.

[i] Alternatively, the device can be shut down into Standby mode. The device is reactivated by touching the touchscreen.

[i] When delivered, the device logs in automatically with the username **Smart Panel** and the password **jung** .

Carrying out a reset

If the panel can no longer be operated, e.g. after a program has crashed, then the device can be reset and switched off. Any unsaved data will be lost.

■ Press the push-button (6) for approx. 5 seconds.

   The device switches off after about 5 seconds.

Touch-sensitive surface

The display screen features a touch-sensitive surface, the so-called touchscreen. The device is operated by touching the screen surface with a finger or a special touchscreen stylus (not included in the scope of delivery).

[i] Do not operate the touchscreen with sharp or pointed objects.

Cleaning the touchscreen

The touchscreen requires regular cleaning in order to guarantee the optimum touch sensitivity. Keep the screen free of foreign bodies and dust.

■ Set application to "Cleaning function".

■ Clean the touchscreen carefully using a soft, lint-free cloth. If needed, moisten the cleaning cloth slightly.

[i] Do not use sharp cleaning agents, acids or organic solvents.

[i] Keep moisture from penetrating into the device. Do not spray the cleaning agent directly onto the screen surface.

[i] Do not use sharp objects for cleaning.

Graphical user interface

ⓘ After switching on, the KNX device starts the KNX application immediately as a separate Windows task. The Windows user interface and system programs are available with connected USB keyboard.

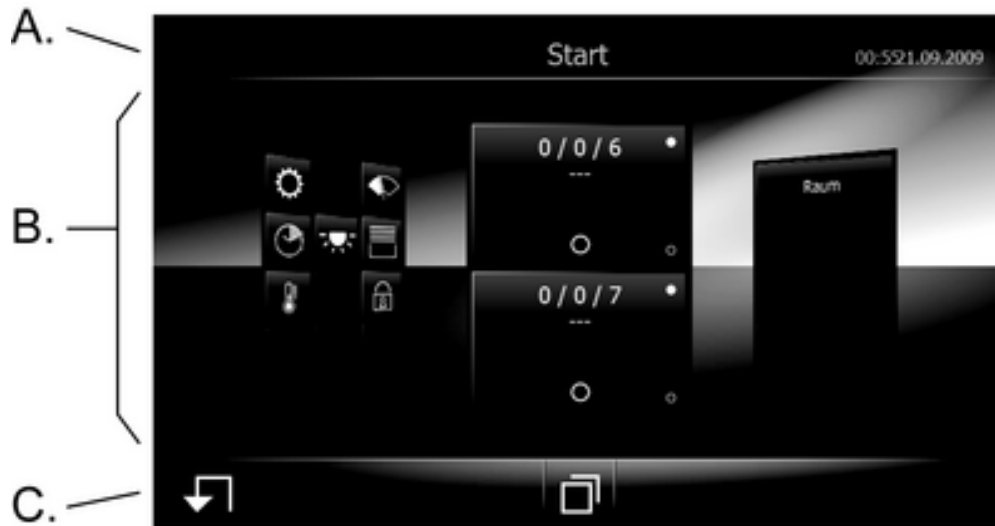The display and operating elements are controlled via a graphic user interface:

Figure 3: Graphical user interface, main screen

A. Header: display of date, time, name of the current page or function, or – depending on context – operating elements for navigation to the previous page or next page.

B. Operating elements: Directly select or activate the function to be operated.

C. Footer: Operating elements for navigation ⤶, ▢. Additional elements might be arranged in the footer depending on the programming.

A clear, intuitive menu structure divided into several layers is used for guidance. You can switch between the individual pages using the "Scroll" ▢ button. The corresponding menus Room operation, Function operation and System settings are accessed by pressing an entry.

The "Return" ⤶ button always leads back to the main menu.

Rocker operation and button operation

A function can be configured as rocker control or button control.

- With rocker control, there are two operating elements available per function, e.g. On/Off, Brighter/Darker, Up/Down, Warmer/Colder.
- With button control, the function is controlled by means of a single operating element. The operating direction – e.g. On or Off – switches over with each operation.

ⓘ Values can also be changed using a superimposed keypad.

Windows user interface

ⓘ The Windows user interface and system programs are available with connected USB keyboard.

Operation is carried out using a mouse pointer, which follows the operations of the touchscreen. Brief touches of the screen are interpreted as actuation of the mouse buttons. The function of the right mouse button can be activated using the mouse button switching (25). Text can be input using the Windows on-screen keyboard (24).
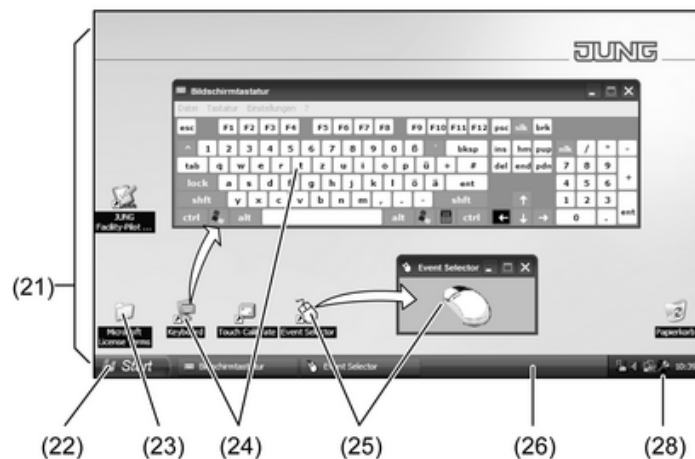
Figure 4: Monitor elements

(21) Windows desktop

(22) Start menu

(23) Microsoft Windows terms and conditions

(24) On-screen keyboard

(25) Mouse button switching

(26) Windows taskbar

(28) Preinstalled system programs

In the information area of the taskbar, system programs are preinstalled using the symbol (28), e.g. for setting the screen brightness.

File-based write filter

The device contains an SSD drive with no moving parts as a mass storage facility. To prevent accidental changes to the configuration, the drive is protected by a file-based write filter - FBWF. Write operations to the protected are a diverted to a virtual drive in the RAM. Changes to this data are shown in the directory but are only available until the device is restarted. The previous data is restored is the device is switched-off or there is a power failure.

Changes to the "My Documents" directory are excluded from write-protection and are always applied.

The write filter must be switched off:
- When directories are created, which are to remain intact after a restart,
- When programs are installed.

The system must be restarted:
- When the write filter is switched on or off,
- When the size of the virtual drive is changed,
- When memory compression is switched on or off.

The user can change the settings for the file-based write filter.

Installing programs

Before installing additional programs, take the system requirements of the programs into account.

- Deactivating write filters: select the icon (28) with the mouse pointer.
- Select the menu item "Write protection".
  The window for the write filter settings opens.
- Deactivate write protection.
- Press the "Apply" button.

- Press the "Close" button.
- Shut down the panel and restart it.
- Install the program, e.g. from a USB stick.
- Activating write filters: select the icon (28) with the mouse pointer.
- Select the menu item "Write protection".
- Activate write protection.
- Press the "Apply" button.
- Press the "Close" button.
- Shut down the panel and restart it.

5 Information for electrically skilled persons

5.1 Fitting and electrical connection

> ⚠ **DANGER!**
> **Electrical shock when live parts are touched.**
> **Electrical shocks can be fatal.**
> **Before working on the device, disconnect all the corresponding miniature circuit breakers. Cover up live parts in the working environment.**
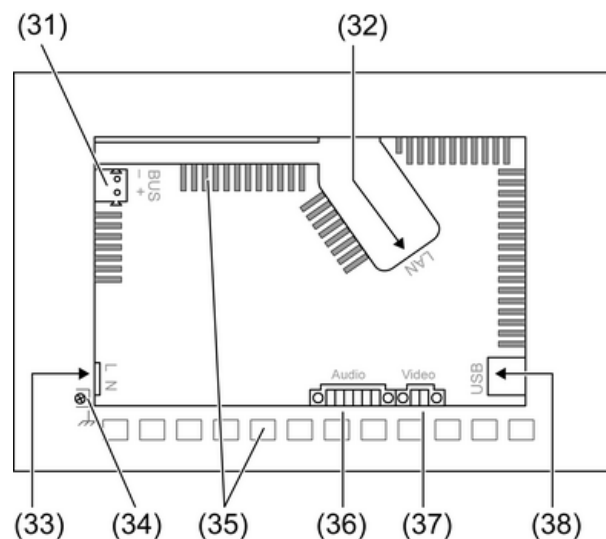
Mounting and connecting the device

Figure 5: Rear side - Connections

(31) KNX connection

(32) Ethernet

(33) Connection for mains supply

(34) Connection **PE** lead

(35) Ventilation openings

(36) Audio input and output

(37) Analogue Video input

(38) 2x USB-2.0

ⓘ Recommendation: Install at eye-level, for optimal reading.

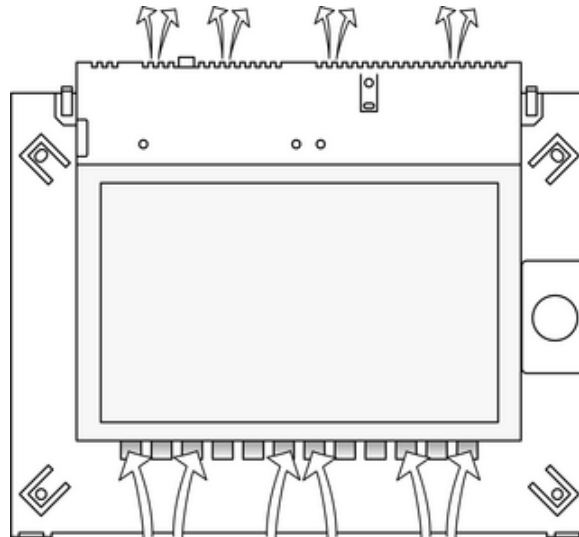Installation in panel-mounted housing.

Figure 6: Ventilation openings, front side

Ensure sufficient cooling. Do not cover the ventilation openings on the front and rear side of the appliance box (figure 6).

- Install panel-mounted housing in the correct position in wall. **OBEN TOP** arrow points upwards.
- Pull the connecting cables through the designated bushings.

⚠	**DANGER!**
	Electrical shock when live parts are touched. The mains voltage and low voltage are located in a shared appliance box. If there is an error, other connected components may carry mains voltage.
	Electrical shocks can be fatal.
	Always secure the mains voltage with the enclosed tube.
	Run the cables so that low voltage wires are securely protected against mains voltage.

- Strip the mains voltage cable to the length of the enclosed tube.
- Pull the supplied tube over the stripped mains voltage wires **L** and **N**.
- Connect the mains voltage **L** and **N** to terminal (33).
- Connect the PE conductor to the designated terminal ⏚ (34).
- Connect the KNX bus line to terminal (31).
- Connect audio devices to terminal (36).
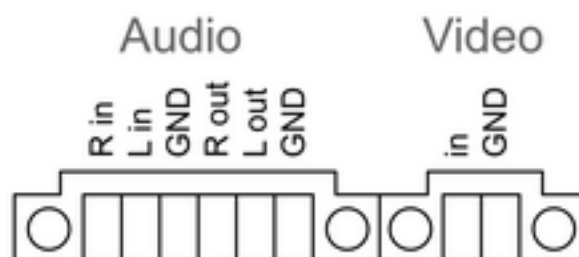- Connection the video device to terminal (37).

Figure 7: Connection assignment, audio and video connections

Labelling	Function
Audio R in	Input, audio signal, right
Audio L in	Input, audio signal, left
Audio GND	Shared GND audio inputs
Audio R out	Output, audio signal, right
Audio L out	Output, audio signal, left
Audio GND	Shared GND audio outputs
Video in	Input, video signal
Video GND	GND video signal

Table: Connection assignment, audio and video connections

Use the Ethernet connection (32) together with the supplied Ethernet adapter plug and Ethernet adapter cable to connect to the IP network.

Pay attention to the correct colour assignment of the wires, EIA/TIA-568-A or -B. This can be found in the documentation of the installed network components and routers.

ⓘ The Ethernet connection on the device is carried out according to EIA/TIA-568-B.

- Connect Ethernet cable to the Ethernet adapter plug. To do this, strip the Ethernet wires, do not skin, and insert into the cover of the adapter plug. Shorten any wires that are jutting out and push the cover onto the adapter plug in the correct position (figure 8).

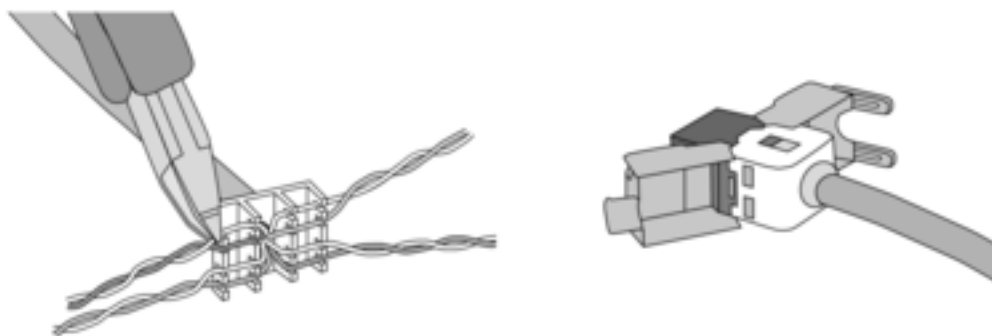- Connect the supplied Ethernet adapter cable to the terminal (32) and Ethernet adapter plug.

Figure 8: Connection of adapter connector to Ethernet cable

- Install device in panel-mounted housing. Labelling **OBEN TOP** is on top. Use the screws supplied.
- Remove protective film from the internal speaker (10).
- Remove protective film from the touchscreen surface (2).
- Insert the Design frame into the bottom of the designated brackets in the right position and push up lightly to engage it.

Removing the Design frame

To remove the Design frame, actuate the locks (5) on the left and right of the top edge of the panel.

- Use a small tool to push the right lock downwards.
- Using your finger, push the left lock down.
- Tilt the design frame forwards and remove.

5.2 Commissioning

Load physical address

- Press the programming button (14).

  The programming LED lights up.

- Assign physical address.

  The programming LED goes out.

Loading the application software

- ⓘ The configuration and commissioning are performed using external configuration and commissioning software.
- ⓘ Preset IP address at delivery: 192.168.178.112
- Establish connection to the commissioning PC via IP connection.
- Download configuration data with the commissioning software.

- or -

Configuration data is saved on a USB stick or SD card.

- Insert USB stock or SD card into the appropriate slot – (4) or (7). In KNX user interface, select the settings icon ⚙ and then the "Import" entry. Select disk drive and path and open the file with the configuration data.

6 Appendix

6.1 Technical data

Supply	
Rated voltage	AC 110 ... 230 V ~
Mains frequency	50 / 60 Hz
Fine-wire fuse	Littelfuse/Wickmann 372 1160 T 1.6 L 250
Standby power	max. 1 W
Power consumption	max. 20 W
Power consumption	max. 8 W (Display off)
Ambient conditions	
Ambient temperature	0 ... +35 °C
Storage/transport temperature	-10 ... +70 °C
Relative humidity	15 ... 85 % (No moisture condensation)
Safety class	II
System	
Processor type	Intel Atom™ Z510
Clock speed	1.1 GHz
L2 cache	512 kB
System chipset	Intel System-Controller Hub US15W
Mass storage	2 GB SSD
RAM	1 GB RAM
Audio controller	Realtek ALC888
Display	
Type	TFT 22.9 cm [9"], WVGA
Resolution:	800×480 pixels
Number of colours	16.7 millions
Observation angle	± 85 °
Touchscreen	resistive
Camera	
Resolution:	1.3 million pixels
Connections	
Audio output	Line-out, Stereo
Audio input	Line-in, Stereo
Video input	FBAS/CVBS, 1 Vss
Slot for memory card	SDHC, max. 32 GB

USB
| USB version | 1.1/2.0 |
| Connection | 3× type A |

Service interface
| Connection | Mini-USB, type AB, 5-pole |

Network
| Type | 10/100 MBit/s Ethernet |
| Connection | RJ45-socket 8/4-pin |

Dimensions
Dimensions W×H×D	283×117×65 mm (without design frame)
Dimensions screen W×H	195×118 mm
diagonal	22.9 cm

KNX medium	TP 1
Commissioning mode	S-mode
Rated voltage KNX	DC 21 ... 32 V SELV
Power consumption KNX	typical 150 mW
Connection mode KNX	Connection terminal

6.2 Accessories

Flush-mounted recessed box	Art.-No.: EBG 24
Frame, aluminium	Art.-No.: R 9 AL E
Frame, stainless steel	Art.-No.: R 9 ES E
Frame, glass green	Art.-No.: R 9 GL E
Frame, glass white	Art.-No.: R 9 GL WW E
Frame, glass black	Art.-No.: R 9 GL SW E

6.3 Warranty

We reserve the right to make technical and formal changes to the product in the interest of technical progress.

We provide a warranty as provided for by law.

Please send the unit postage-free with a description of the defect to our central customer service office.

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