

KNX

KNX Touch control TC5

UP 205S13, UP 205S23



Multi-functional display and room control unit

- Operation via 5-inch color touch screen
 - Control of lighting, blinds, and scenes
 - Room temperature PI controller and/or ventilation
 - Interface and operation for VRF devices (VRF: Variable refrigerant flow)
 - Display of temperature, humidity, air quality, energy metering value, rain, etc.
- Mounting in horizontal as well as vertical direction
- Encrypted telegram transmission via KNX Data Secure
- Schedule, event management, alarm handling, human-centric lighting (HCL) and basic logic functions
- Configurable navigation for up to 15 function pages
- Administrator function via password or bus objects
- Proximity sensor, adjustment of screen brightness, buzzer
- Customization possible for wallpaper, screensaver, and configurable icons
- Mounting on both round and square conduit boxes, 60 mm fixing centers

Functions

The KNX Touch control TC5 (hereinafter referred to as TC5) is a KNX S-Mode multi-functional touch panel for display, operation and control. The device offers a 5-inch color capacitive touch screen at a resolution of 480 × 854.

The device is powered over KNX and DC 24...30 V auxiliary supply voltage.

It is operated via touch screen and provides a total of 15 function pages and 5 home pages that are configured via ETS (ETS5.7 or later).

The device can be horizontally and vertically mounted and operated.

The device uses KNX Data Secure to protect building automation and control systems against manipulation and is configured in the ETS project. For secure commissioning, a device certificate (attached to the device) is required and must be removed and stored in a safe place as part of installation.

The device firmware can be updated easily using SD card.

Functions:

- Home page (navigation)
TC5 can set up multiple function pages for control and operation. Max. 5 home pages with max. 8 icons allow easy navigation to the desired function page. The navigation function can be enabled/disabled, but if disabled, the device goes to the first configured function page.
- Multi-function page for lighting, solar protection, scene control, send value and display value or text
 - Lighting control includes switching and dimming.
 - Brightness + color temperature: Brightness dimming and color temperature control
 - Solar protection covers curtain open/close, roller shutter up/down and venetian blinds with louver angle adjustment.
 - Scene control by short pressing the scene icon to recall or long pressing to save.
 - Send value: Tap any icon to send the telegram to the bus.
 - Display values including freely configurable unit text.
- HVAC control covers several applications:
 - General temperature control for multiple room heating/cooling applications such as FCU, chilled ceiling with 2-point or PI control. Room temperature control via setpoint (absolute or relative), heating/cooling selection, fan operation (2 options: Not visible when fan operation is disabled; 5 types of fan speeds: 3-speed, Off and Auto when enabled), operating mode changes (4 modes: Comfort, Standby, Economy and Protection).
 - VRF (variable refrigerant flow) interface allowing the TC5 to act as user interface to operate VRF or VRV (variable refrigerant volume) air conditioning devices with a KNX to VRF gateway.
 - Enhanced floor heating control and scene functions as well as on-screen indication of heating valve on/off.
 - Ventilation control with manual 3-speed fan changeover as well as auto control (demand-based ventilation) via PM2.5 or CO₂ values. Support of opening/closing heat recovery, filter life count, alarm to change filter and reset filter life.

Max. 10 pages can be configured as HVAC control.

- Display air quality value from bus
Page displaying various sensor readings such as temperature, relative humidity, PM2.5, PM10, CO₂, VOC, brightness, wind speed and rain. Max. 4 parameters can be displayed per page and a total of 10 pages can be configured as display page.
- Display energy metering value from bus
Max. 8 meters can be displayed on one page and a total of 10 pages can be configured.
- Timer (schedule) function
Max. 16 schedules can be set: Daily or weekly and can be configured via ETS and HMI.

- **Scene control**
Max. 8 sets of scene groups can be set. Max. 8 output telegrams can be triggered via the scene number and each output has 5 different data types.
- **Logic functions**
Max. 8 inputs can be configured with different logic operations: AND, OR, XOR, gate forwarding, threshold comparator, format convert, max. and min. value.
- **RGB, RGBW and RGBW+color temperature adjustment**
TC5 can set up a dimming control page for 3 types of color lights, which are 3-color RGB light, 4-color RGBW light, 4-color RGBW light optional with color temperature adjustment.
- **Display of time, date, temperature, humidity/CO₂ on home page.**
- **Proximity sensor, adjustment of screen brightness, touch volume and vibration**
- **Password function**
Configurable. Max. 3 passwords available.
- **Lock function page via bus**
The whole device or selected function pages can be locked to disable user screen operation.
- **Multi-usage color strip**
The color strip is designed not only as a decoration, but also for multiple types of indications, such as KNX programming mode and factory reset.
- **Display alarm**
Max. 5 alarms can be indicated visually as well as acoustically. The alarm display duration and repeat time are configurable.
- **Human-centric lighting (HCL)**
Brightness and color temperature can be controlled via HCL function.
Max. 10 settings to send brightness and color temperature to the bus as per the specific time of day
- **On-site customization possible for wallpaper, screensaver, and configurable icons**

Type summary

Product no.	Stock no.	Description	Operating voltage	Color
UP 205S13	5WG1205-2SB13	5" touch panel, horizontal and vertical	DC 24...30 V	White
UP 205S23	5WG1205-2SB23	5" touch panel, horizontal and vertical	DC 24...30 V	Black

Accessories

No.	Product	Description
1	Mounting plate	For fitting onto a conduit box ¹⁾
2	Screws ²⁾	Two for China standard conduit box and two for US standard conduit box

Note:

¹⁾ Order conduit box separately.

²⁾ #6/32 flat head machine screw for US market.

Ordering

When ordering, specify product quantity, product number/stock number and name: e.g.
UP 205S13 (5WG1205-2SB13) 5" touch panel.

Product documentation

Title	Document ID
Mounting instructions	A6V15367169
Application program description	A6V15367171
CE declaration	A5W02940124A
RCM declaration	A5W03090404A
UKCA declaration	A5W02940125A
Environmental product declaration	A5W03019748A

Related documents such as the environmental declarations, declarations of conformity, etc., can be downloaded from the following Internet address:

www.siemens.com/bt/download

Technical documentation and ETS application can be downloaded at <http://www.siemens.com/knx-td> (S-Mode).



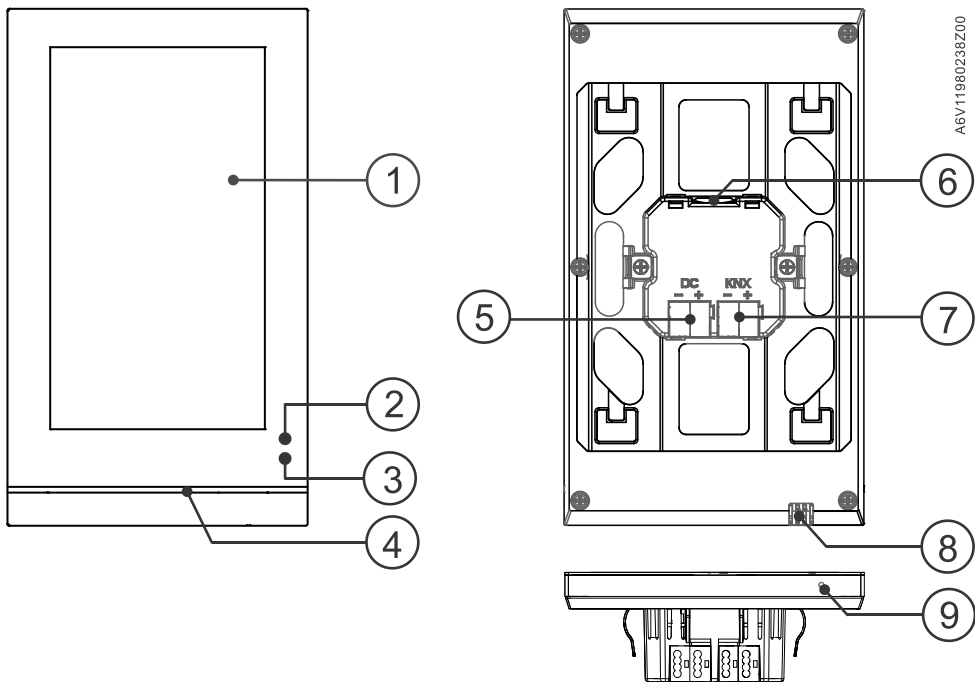
To search for the technical documentation, you can enter the product type in <http://www.siemens.com/knx-td>.

Mechanical design

The device consists of the following parts:

- Touch panel with electronics, operating elements and built-in room temperature sensor
- Mounting plate to complete the installation for KNX Touch control TC5.

Operation and display



No.	Product description	No.	Product description
①	Display and touch operation area	⑥	Micro SD card slot
②③	Proximity sensor	⑦	KNX bus connection terminal
④	Color light strip	⑧	Built-in temperature sensor
⑤	Auxiliary power supply connection terminal	⑨	Service pin

Note

- Enter programming mode (option 1):
 - Tap the setting icon  in home page;
 - Go to "General";
 - Enable "KNX programming". The color strip (LED) turns red and the device can be configured via ETS.
- Enter programming mode (option 2):
 - Press service pin <2 s to enable "KNX programming". The color strip (LED) turns red and the device can be configured via ETS.
- KNX programming is for professional engineers. Make sure the function is disabled during daily operation and, if enabled:
 - The device can operate normally.
 - The color strip (LED) is constant red and affects strip life.
- Micro SD card to modify the background picture, electronic photo album, home page icons or multi-functional pages.



SDHC card and FAT32 format are only supported and the capacity of Micro SD cards may not exceed 16 GB.

Notes

Security

 CAUTION	
	National safety regulations Failure to comply with national safety regulations may result in personal injury and property damage. • Observe national regulations and comply with the appropriate safety regulations.

Instructions for the secure operation of KNX Touch Control TC5

- Do not use the device to control safety-related or security-related applications (e.g. emergency lighting, or door lock control).
- Only operate the device in a protected network environment and do not allow direct access from the Internet.
- Set up a separate IP network with its own hardware for KNX communication.
- Protect the device by using secure communication and secure commissioning.
- Secure remote access to the device via an additional VPN connection. A virtual private network (VPN) establishes an encrypted and authorized connection (VPN tunnel) from a remote connection to a network via the internet. This VPN connection enables secure communication protected from eavesdropping between a remote device and the KNX installation.
- If WLAN is used, change the preset SSID of the wireless access point. Encrypt the WLAN using a secure procedure (such as WPA2 at present).
- Document network settings and give them to the building owner/operator or LAN administrator.
- Coordinate the administration of access rights to this KNXnet/IP device in an IP network with the respective IP network administrator.

NOTICE



Measures after replacing a device in the KNX/IP network.

When a KNX device is stolen from a network or replaced due to a defect, the BCU key must be reassigned (changed) for all other devices in the network. This change is necessary because it cannot be ruled out that the BCU key, which is located in a protected area, can be read.



For more information on KNX security, including, for example, a security check, refer to the "KNX Secure" section on the KNX website (<http://www.knx.org>).

Notes on the FDSK sticker

- Remove the device from the sealed packaging, scan the FDSK and store.
- Remove all FDSK stickers from the device and then install the device.

This procedure ensures that the FDSK cannot be read from mounted devices.

NOTICE



If the scanned FDSK is lost, the device can no longer be used (in secure mode) after a factory reset.

For devices with secure by default and a lost FDSK, the device can no longer be used after a factory reset.

Engineering

⚠ WARNING



When designing and constructing the system, be sure to adhere to the installation and operation guidelines for the product, and comply with relevant national laws and regulations strictly.

Mounting and installation

Mounting

- The device is suitable for semi-flush mounting.
- Only trained and authorized engineers may install and debug the device.
- Keep devices away from strong magnetic fields, high temperatures and wet environments.
- Do not drop the device to the ground and avoid hard impact.
- Do not use wet cloth or volatile agents to wipe the device.
- Do not disassemble the device.

Wiring

- Protective features against over-voltage, over-current, short circuit, and reverse polarity in the power supply.
- The device is powered with direct current. Avoid reversing the positive and negative poles of the power supply.
- When connecting the device, make sure the device is properly insulated.

Commissioning

- Powered via KNX with a DC 24...30 V auxiliary supply voltage.
- ⚠ When modifying the wallpaper, screensaver (electronic photo album), configurable icons for home page or multi-functional pages with Micro SD card, interrupting power supply may result in system startup failure.
- Make sure the Micro SD card only contains the firmware used for upgrading, otherwise it damages the system.
- If the device must be switched off after a setting change, we strongly recommend to cut off power 6 seconds after the change to make sure the changes take effect.
- ⚠ Do not power off the auxiliary supply when upgrading the system via Micro SD card, as this may result in display errors; system upgrades require a restart.
- ⚠ Do not power off auxiliary supply when in programming mode, as this may prevent the system from starting.

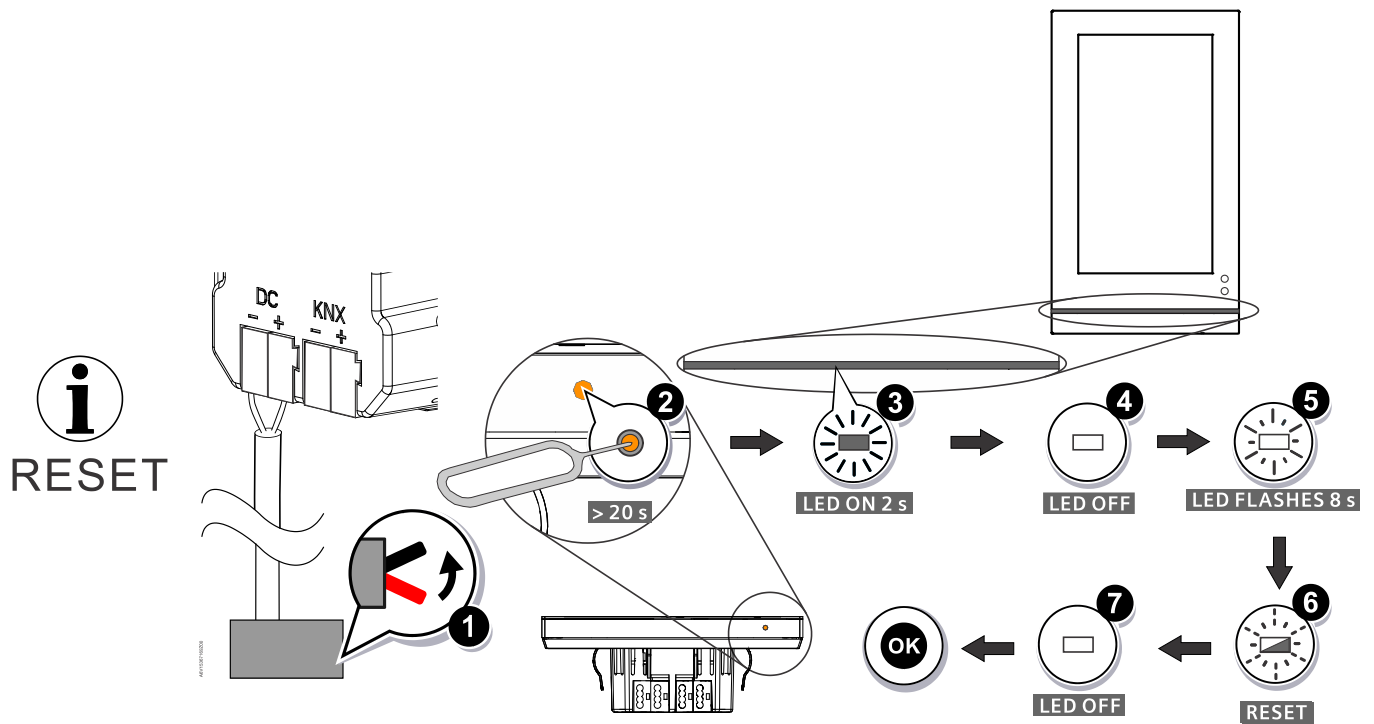
Factory reset

The factory-reset resets the device to the original settings (physical address 15.15.255, firmware remains as is). The device must then be configured with ETS.

In secure mode: Factory reset deactivates device security. The device can then be commissioned again using the device certificate.

Perform factory reset

1. Press and hold the service pin for > 20 s.
⇒ The color strip (LED) is on for 2 s and off, then flashes for 8 s.
2. The device carries out a factory reset, restarts, and the color strip (LED) turns off.
3. The device is again ready for operation.

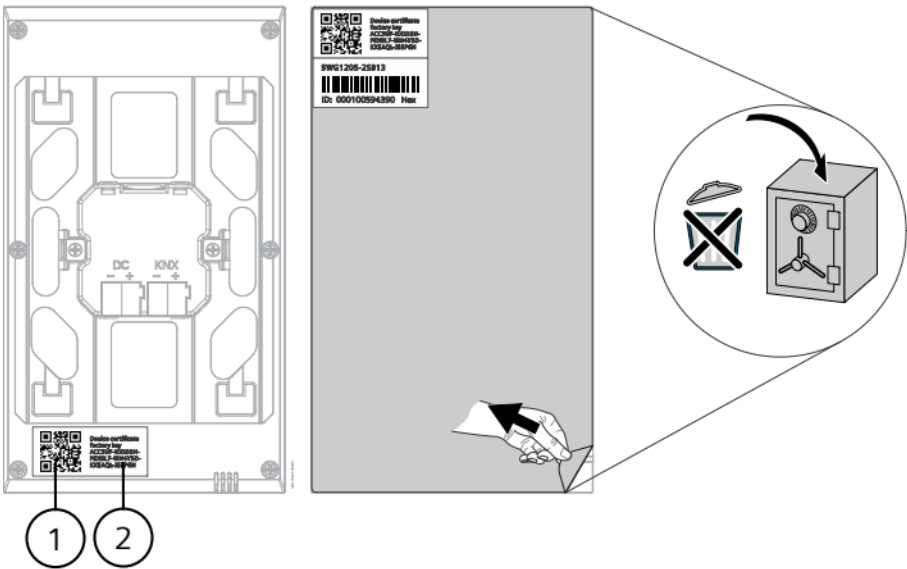


Location of the device certificate QR code

ETS requires an appropriate device certificate for secure commissioning. The device certificate is a string containing the device-specific key FDSK (Factory Default Setup Key) and the serial number of a KNX Data Secure-enabled device. The certificate must be transmitted to ETS.

FDSK is a unique factory string for each secure device. It is used once by ETS to generate additional (digital) keys (tool key/runtime key) for secure communications within the project, and it is saved for this exact device in the ETS project. If the FDSK is lost, the device cannot be commissioned in secure mode.

During a factory reset, the FDSK must be entered in the project again for secure commissioning.



Number	Description	number	Description
①	QR code of factory key	②	Factory key

The device certificate is attached to the rear of the device. An extra copy of the device certificate is provided on the protective film at the front. It can be removed for secure commissioning with ETS and then stored in a safe place.

NOTICE	
!	Remove the device certificate from the device and store it in a safe place. Keep the FDSK away from unauthorized persons.

Disposal

	This symbol or any other national label indicates that the product, its packaging, and, where applicable, any batteries may not be disposed of as domestic waste. Delete all personal data and dispose of the item(s) at separate collection and recycling facilities in accordance with local and national regulations. For additional details, refer to Siemens information on disposal.
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Regulatory compliance information

United Kingdom conformity assessed

Contact for regulatory topics: (GB) Siemens plc, Sir William Siemens House, Princess Road, Manchester, M20 2UR

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation

FCC Caution: Changes or modifications not expressly approved by Siemens Switzerland Ltd. could void user authority to operate the equipment. United States representative

<https://new.siemens.com/us/en/products/buildingtechnologies/home.html>

Technical data

Power supply

Operating voltage	DC 21...30 V, powered from bus
Bus current	6 mA @ DC 24 V, 5 mA @ DC 30 V
Bus power consumption	< 150 mW
Auxiliary power voltage	DC 24...30 V
Current	< 115 mA @ DC 24 V, < 100 mA @ DC 30 V
Power consumption	< 3 W

Interface

KNX	KNX bus connection terminal: black/red KNX auxiliary power supply: yellow/white Max. communication objects: 987 Max. group addresses: 2000 Max. associations: 2000
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Ambient conditions and protection classification	
As per EN 60730-1 classification	
Pollution class	2
Over-voltage category	II
Protection class	Class III
Protection degree of housing as per EN 60529	IP30
Environmental conditions	
Storage EN 60721-3-1	Class 1K3 Temperature: -25...55 °C Humidity: 0...93 % r.h. (non-condensing)
Transport EN 60721-3-2	Class 2K3 Temperature: -25...70 °C Humidity: 0...93 % r.h. (non-condensing)
Operation EN 60721-3-3	Class 3K5 Temperature: -5...45 °C Humidity: 0...93 % r.h. (non-condensing)
Mechanical conditions Storage EN 60721-3-1 Transport EN 60721-3-2 Operation EN 60721-3-3	Class 1M2 Class 2M2 Class 3M2

Class of the temperature control as per delegated EC Regulation 811/2013	
Class of the temperature controller	VIII
Energy efficiency	5 %

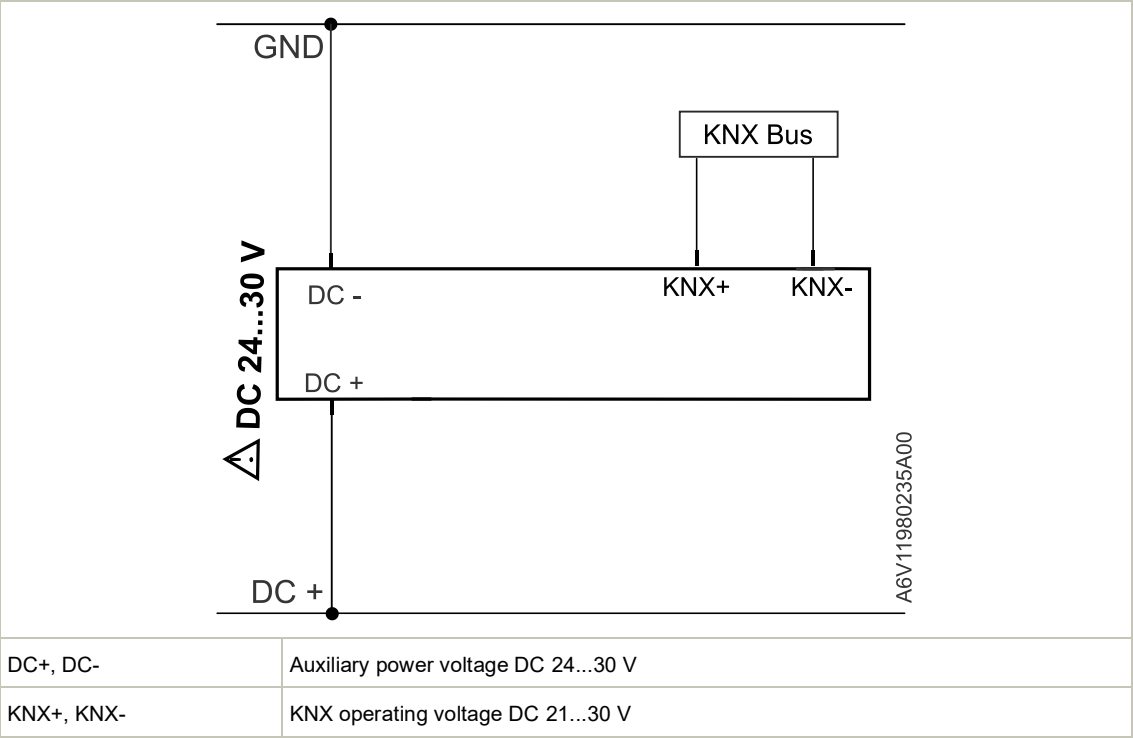
Standards, directives, and approvals	
Electromagnetic compatibility	For use in residential, commercial and industrial environments
EU conformity (CE)	A5W02940124A *
RCM conformity	A5W03090404A *
UKCA	A5W02940125A *
Environmental compatibility	The product environmental declaration (A5W03019748A *) contains data on environmentally compatible product design and assessments (RoHS compliance, materials composition, packaging, environmental benefit, disposal, etc.).

General data

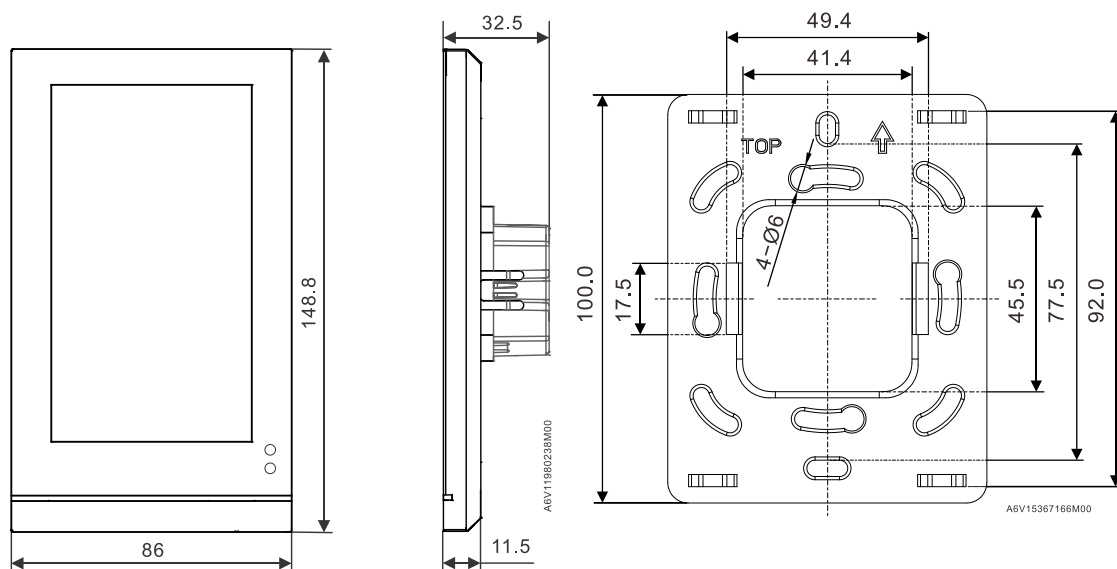
Proximity sensor	Max. approximately 30 cm Note: This distance is obtained based on human detection, not an obstacle.
Built-in temperature sensor Measuring accuracy at 25 °C	NTC 100k ±1 K
Display	5-inch color capacitance touch screen, 480 × 854 pixel
Dimensions mm (w × h × d)	86 × 148.8 × 11.5
Weight without/with package	248 / 388 g
Materials	• Rear housing: PC • Front panel: 6063 aluminum • Touch panel: glass+film+film

Diagrams

Connection terminals



Dimensions (mm)



Support

- Hand over the operating instructions and all other technical product information to the client.
- Return faulty devices with a return delivery note to the local Siemens office.
- For technical questions, contact:

Tel.: +49 89 9221-8000

<http://www.siemens.com/supportrequest>



Technical Support:

<http://www.siemens.com/supportrequest>



FAQ:

<https://support.industry.siemens.com/cs/ww/en/ps/faq>

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