SIEMENS

KNX

KNX Touch control TC4

5WG1204-2SB12, 5WG1204-2SB22

KNX Touch control TC4

- Operation via 4-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, rain, etc.
- Encrypted telegram transmission via KNX Data Secure
- Schedule, event management, alarm handling and basic logic functions
- Navigation configurable for max. 12 function pages
- Administrator function via password or bus objects
- Proximity sensor, adjust screen brightness, buzzer
- Customizable wallpaper, screensaver, and icons
- Mount on either round and square conduit boxes, 60 mm fixing centers

Functions

The KNX touch control TC4 is a KNX S-Mode multi-functional touch panel for display, operation and control. The device has a 4-inch color capacitive touch screen at a resolution of 480 × 480 pixels.

The device is powered over KNX and DC 21...30 V auxiliary supply voltage.

It is operated via touch screen and provides 12 function pages, and 5 homepages configured via ETS (from ETS5.7).

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 KNX firmware can be updated easily using the Siemens firmware download tool.

Functions:

- Homepage (navigation)
  TC4 allows for multiple function pages for control and operation. Max. 5 homepages with max. 6 icons each simplify navigation to the desired function page. Navigation can be enabled/disabled. When disabled, the device goes to the first configured function page.
- Multi-function page for lighting, solar protection, scene control, send values and display values or text
  - Lighting control includes switching and dimming.
  - Brightness plus color temperature: Reduce brightness and set up color temperature
  - Solar protection includes opening/closing curtains, move up/down roller shutter and Venetian blinds and adjust slat with slat angle.
  - Scene control by short pressing the scene icon to recall or long pressing to save.
  - Send value: Tap defined button 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 absolute setpoint or relative setpoint shift, heating/cooling selection, 2 options for fan operation with 5 types of fan speeds, 4 different operating modes selectable.
  - VRF (variable refrigerant flow) interface allowing the TC4 to act as a user interface to operate VRF or VRV-based (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 and timer operation.
  - Ventilation control with manual 3-speed fan changeover as well as automatic control based on PM2.5 or CO_2 values. Support of heat recovery, filter life count, filter exchange alarm and filter life reset.

  Max. 7 pages to be configured as HVAC control.
- Display air quality value from bus
  Page displaying various sensor readings such as temperature, relative humidity, PM2.5, PM10, CO_2, VOC, AQI, brightness, wind speed and rain. Max. 4 parameters can be displayed per page and max. 7 pages can be configured as a display page.
- Display energy metering values from bus
  Max. 8 meters can be displayed on one page and max. 7 pages can be configured.
- Timer (scheduler) function
  Max. 8 schedules can be set: Daily or weekly configured via ETS and HMI.
- Scene control
  Max. 8 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 and max. value.

- RGB, RGBW, and RGBW+color temperature adjustment
  TC4 can set up a dimming control page for 3 types of colored lights: 3-color RGB, 4-color RGBW, 4-color RGBW with optional color temperature adjustment.
- Display of time, date, temperature, humidity/CO_2 on homepage.
- Proximity sensor, adjust screen brightness, touch volume and vibration
- Password function
  Configurable. Max. 3 passwords
- Lock function page via bus
  The device or selected function pages can be locked to disable user actions.
- Display alarm
  Visual and acoustic indication of max. 5 alarms. Alarm indication and repeat times can be configured.
- Programming LED
  The programming LED is designed for multiple types of indications, such as KNX programming mode.
- Service pin for factory reset and enter/exit programming mode.
- Local customization of wallpaper, screensaver, and configurable icons.

Type summary

Product no.	Stock no.	Description	Operating voltage	Color
UP 204S12	5WG1204-2SB12	4" touch panel	DC 21...30 V	White
UP 204S22	5WG1204-2SB22	4" touch panel	DC 21...30 V	Black

Accessories

No.	Product	Description
1	Mounting plate	For fitting onto a conduit box [1)]
2	Screws	Two for Chinese standard conduit box

Note:

[1)] Order conduit box separately.

Ordering

When ordering, specify product number/stock number and name: e.g. UP 204S12 (5WG1204-2SB12) 4" touch panel.

Product documentation

Title	Document ID
Mounting instructions	A6V15553521
Application manual	A6V15589537
CE declaration	A5W02378821A
RCM declaration	A5W02378824A
UKCA declaration	A5W02378822A
Environmental product declaration	A5W01942802A

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/gamma-td (S-Mode).

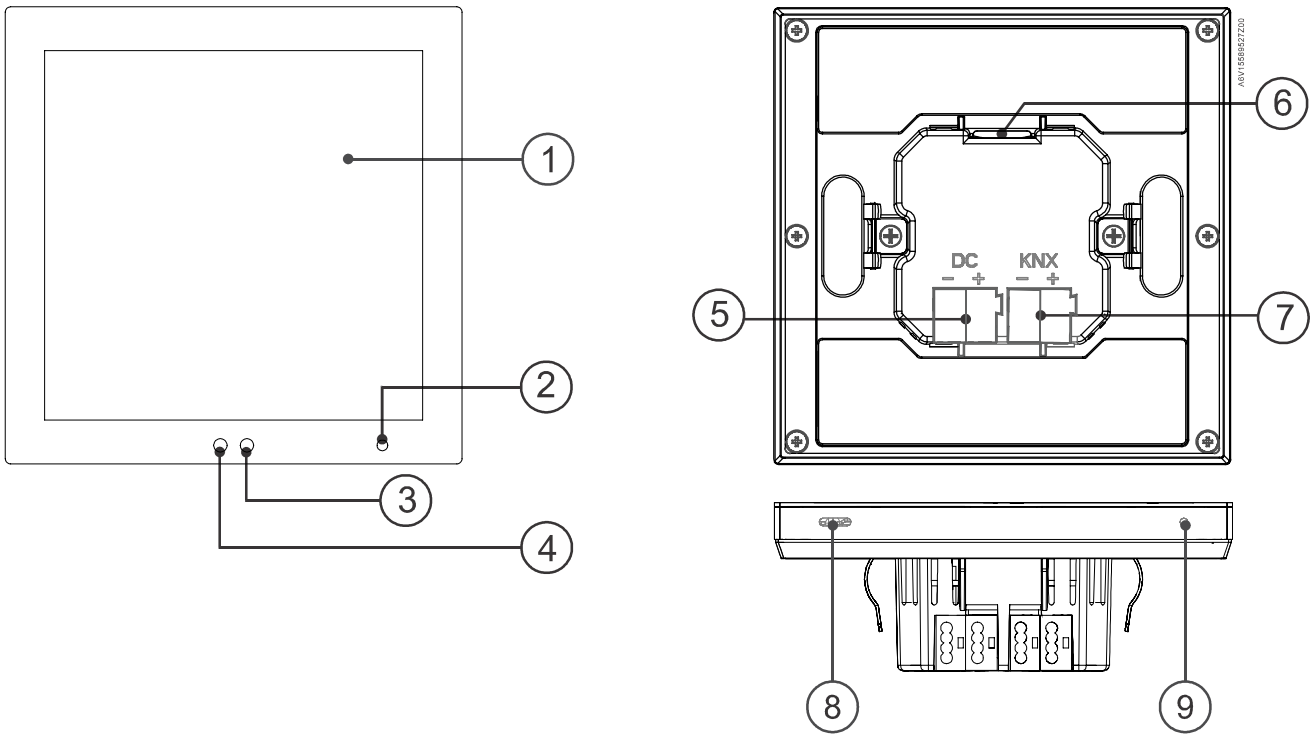
To search for the technical documentation, you can enter the product type in http://www.siemens.com/gamma-td.

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 TC4.

Operation and display



No.	Product description	No.	Product description
①	Display and touch operation area	⑥	Micro SD card slot
②	Programming LED	⑦	KNX bus connection terminal
③④	Proximity sensor	⑧	Built-in temperature sensor
⑤	Auxiliary power supply connection terminal	⑨	Service pin

Note

- Enter programming mode (option 1):
  - Select the setting icon ⚙ on the home page.
  - Go to "General".
  - Enable "KNX programming". The programming LED turns on and the device can be configured via ETS.
- Enter programming mode (option 2):
  - Press service pin <2 s to enable "KNX programming". The programming LED turns on and the device can be configured via ETS.
- KNX programming is intended for professional engineers. Make sure the function is disabled during daily operation and, if enabled:
  - The device operates normal.
  - The programming LED is set to steady On and impacts LED life.
- Micro SD card to change the background image, electronic photo album, home page icons or multi-functional pages.

Only SDHC card and FAT32 format are supported, max. 16 GB capacity of Micro SD cards.

Notes

Security

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

Instructions for the secure operation of KNX Touch Control TC4

- Do not use the device to control safety-related applications (e.g. emergency lighting).
- 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 assigning a BCU key in the ETS.
- 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 product installation and operating guidelines, and strictly comply with any relevant national laws and regulations.

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 wipe the device with wet cloths or volatile agents.
- Do not disassemble the device.

Wiring

- Protection against over-voltage, over-current, short circuit, and reverse polarity in the power supply.
- Direct current powers the device. Avoid reversing the positive and negative poles of the power supply.
- When connecting the device, make sure the device is insulated properly.

Commissioning

- Powered via KNX with a DC 21...30 V auxiliary supply voltage.
- ⚠ When changing the wallpaper, screensaver (electronic photo album), configurable icons for home, or multi-functional pages with Micro SD card, disrupting power supply may result in system startup failure.
- Make sure the Micro SD card only contains the firmware used for upgrading, otherwise system damage may result.
- If the device must be switched off after a settings change, we strongly recommend disconnecting from 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.

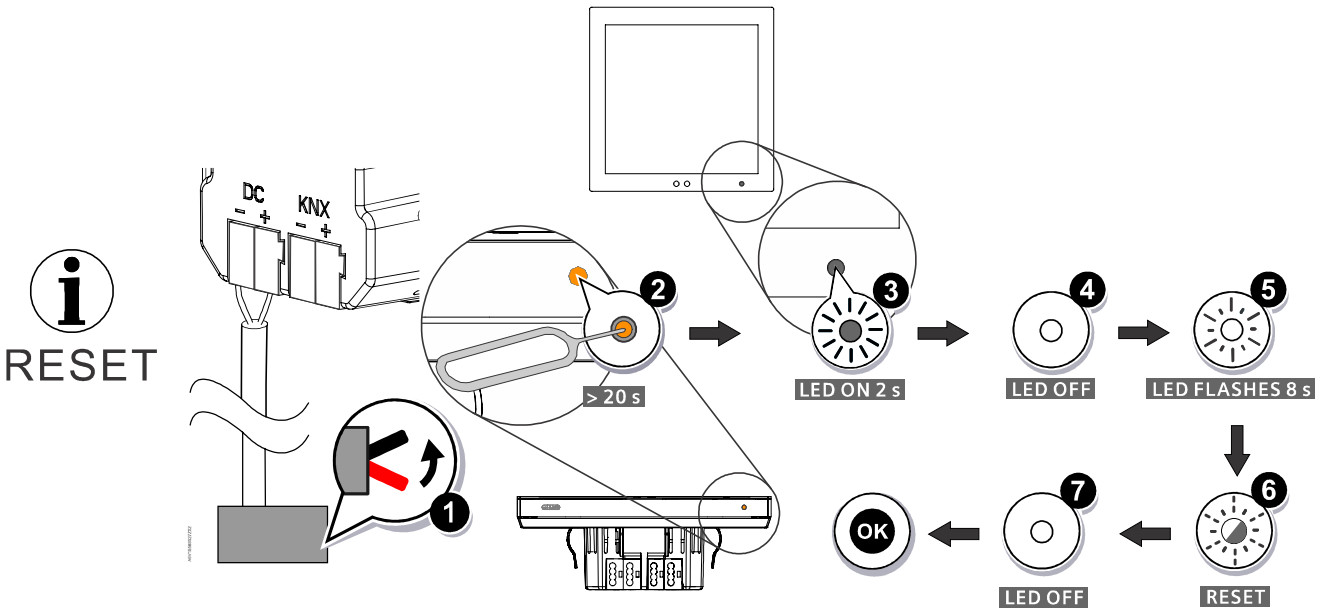
Factory reset

The factory-reset resets the device to the original settings (physical address 15.15.255, firmware remains as is). The device must then be restarted 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 programming LED is on for 2 s and off, then flashes for 8 s.
2. The device carries out a factory reset, restarts, and the LED turns off.
3. The device is again ready for operation.

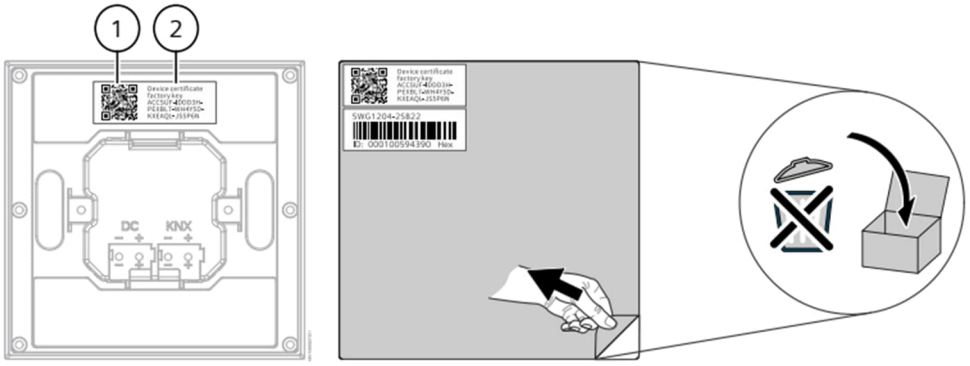


Location of the device certificate QR code

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 indicate 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 legislation. For additional details, refer to Siemens information on disposal.

Regulatory compliance information

United Kingdom conformity assessed

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

Technical data

Power supply	
Operating voltage Bus current Bus power consumption	DC 21...30 V, powered from bus < 7 mA @ DC 21 V, < 6 mA @ DC 30 V < 180 mW
Auxiliary power voltage Current Power consumption	DC 21...30 V < 90 mA @ DC 21 V, < 70 mA @ DC 30 V < 2.1 W

Interface	
KNX	KNX bus connection terminal: black/red KNX auxiliary power supply: yellow/white Max. communication objects: 984 Max. group addresses: 1500 Max. associations: 1500

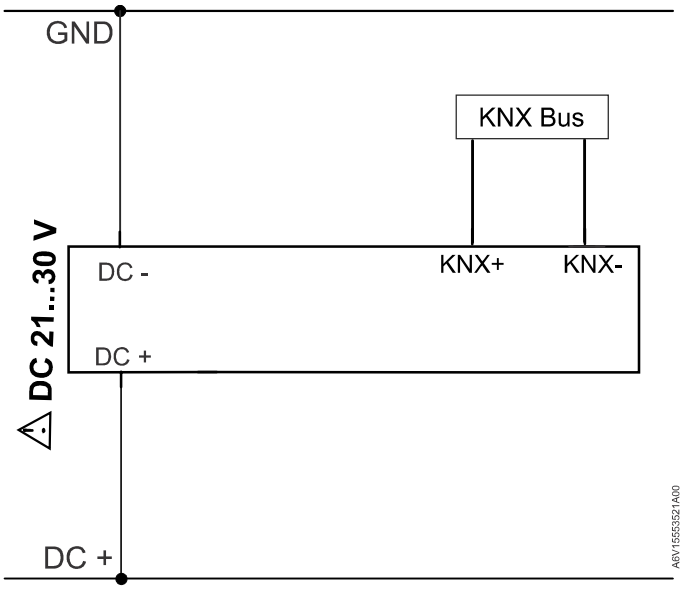
Ambient conditions and protection classification	
As per EN 60730-1 classification Pollution class Over-voltage class	 2 II
Protection class	Class III
Degree of protection of housing as per EN 60529	IP30
Environmental conditions	
• Storage as per EN 60721-3-1	• Class 1K3 Temperature: -25...55 °C Humidity: 0...93 % r.h. (non-condensing)
• Transport as per EN 60721-3-2	• Class 2K3 Temperature: -25...70 °C Humidity: 0...93 % r.h. (non-condensing)
• Operation as per EN 60721-3-3	• Class 3K5 Temperature: -5...45 °C Humidity: 0...93 % r.h. (non-condensing)
Mechanical conditions Storage as per EN 60721-3-1 Transport as per EN 60721-3-2 Operation as per EN 60721-3-3	 Class 1M2 Class 2M2 Class 3M2

Standards, directives, and approvals	
Electromagnetic compatibility	For use in residential, commercial and industrial environments
EU conformity (CE)	A5W02378821A *
RCM conformity	A5W02378824A *
UKCA	A5W02378822A *
Environmental compatibility	The product environmental declaration (A5W01942802A *) 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 °C
Display	4-inch color capacitive touch screen, 480 × 480 pixel
Dimensions in mm （w × h × d）	86 × 86 × 10.5
Weight without/with package	155 / 214 g
Materials and colors	● Rear housing: PC ● Front panel: 6063 aluminum ● Touch panel: glass+film+film

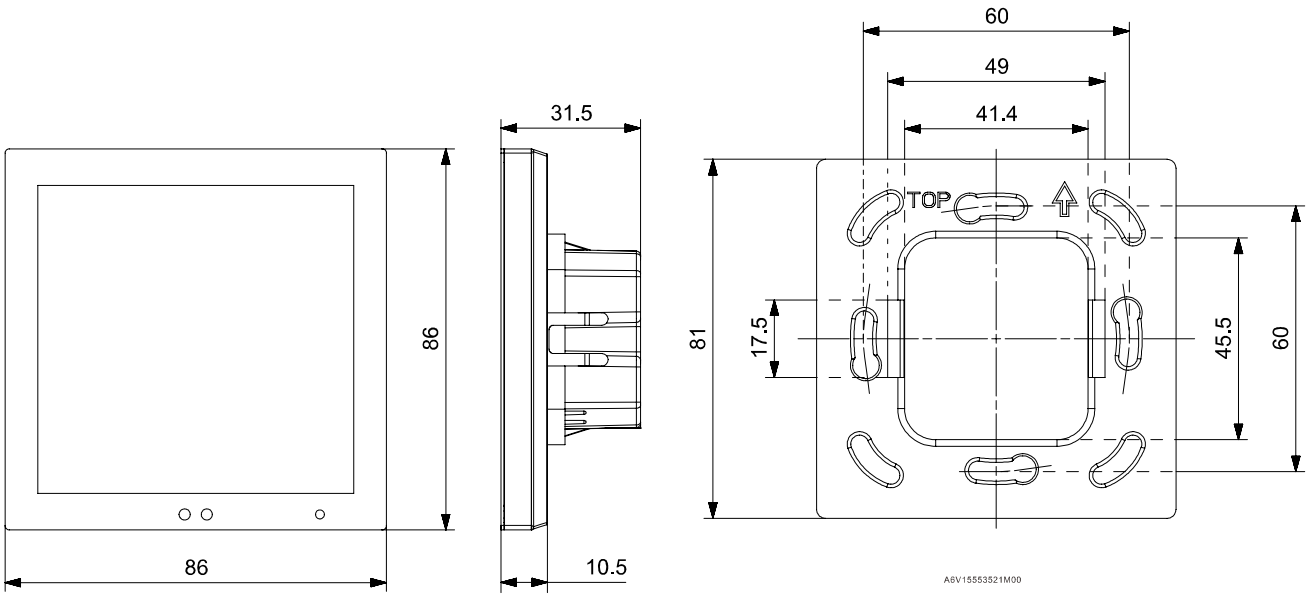
Diagrams

Connection terminals



DC+, DC-	Auxiliary power voltage DC 21...30 V
KNX+, KNX-	KNX operating voltage DC 21...30 V

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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