

# SIEMENS



## **DESIGO™ S7** **Touch Panel S7 TP Comfort** Operating instructions

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# 1 About this document

## 1.1 Revision history

Version	Date	Changes	Section	Pages
_01	July.2009	First draft		

## 1.2 Further documents

Ref.	Document title	Document type	Document number
[1]	Standard device manual hmi_comfort_panels_operating_instructions_en-US	Device manual	6AV6991-1DG01-0AA0 (Siemens AI)
[2]	Touch Panel S7 TP700, S55372-C117	Data sheet	CM1N9290

## 1.3 Before you start

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Trademarks	Legal owner
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Windows	Microsoft Corporation

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- All necessary corrections are included in subsequent versions.
- Documents are automatically amended as a consequence of modifications and corrections to the products described.

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## 1.4 Target audience

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This user's guide targets **plant users** and technical **service staff**. We assume that you have the required system and plant knowledge.

The following descriptions relate to commissioning, basic settings and use of S7 TP Comfort.

A general description is not possible as individual plants and objects may differ greatly. During engineering, the objects and values to be integrated in the plant are determined in accordance to individual plant operator needs.

The following description are intended merely as examples explaining basic functions of the touch panel.

## 1.5 Document conventions

### Display texts:

Texts in **bold print** appear as is on the display, e.g. **Config** or **System**.

## 2 Connect the S7 TP Comfort

### 2.1 Power

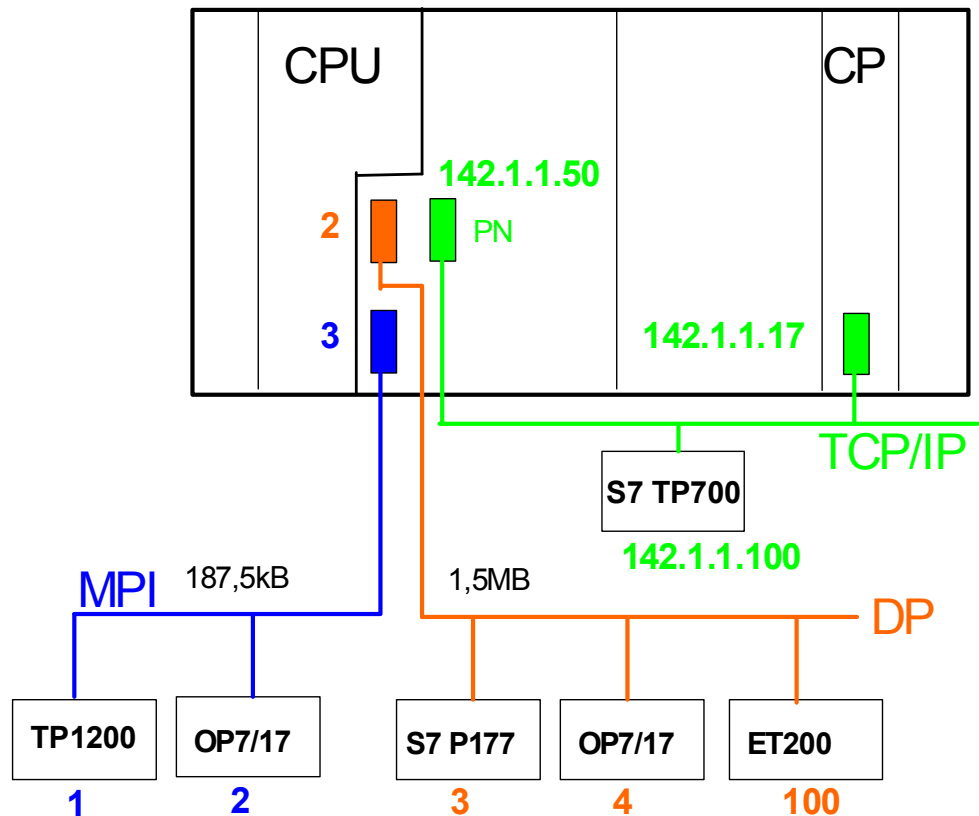
Power supply: DC 24 V (between DC 18...30 V, protection against voltage reversal).

Power consumption:0.5 A.

### 2.2 Data connection

TP application range  
(MPI/DP/TCP\_IP)

The S7 TP Comfort can be connected to an MPI/DP network (CPU interface) as well as a TCP/IP network (Ethernet CP, CPU interface (PN)).



Default setting  
(own address)

MPI	1
Baud rate	187.5 kbps
Highest station address	31
Transfer settings	PN/IE
IP address	192.168.52.245
Subnet mask	255.255.255.0

When connected to a DP network, the S7 TP Comfort's own DP address must be set via CONTROL PANEL→Settings→Transfer→Transfer Settings→**MPI**, rather than CONTROL PANEL→Settings→Transfer→Transfer Settings→DP. Opening a connection automatically adjusts the baud rate.

## 2.3 Switch on

---

After switching on the S7 TP Comfort, the DESIGO S7 start screen opens after a few seconds.

Touching **Exit** closes the start screen (and opens the Control Panel); touching **Start** reopens the start screen.



## 2.4 Commissioning

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You must first parameterize the configuration mask to commission the S7 TP Comfort. (Config menu, see 4.2)

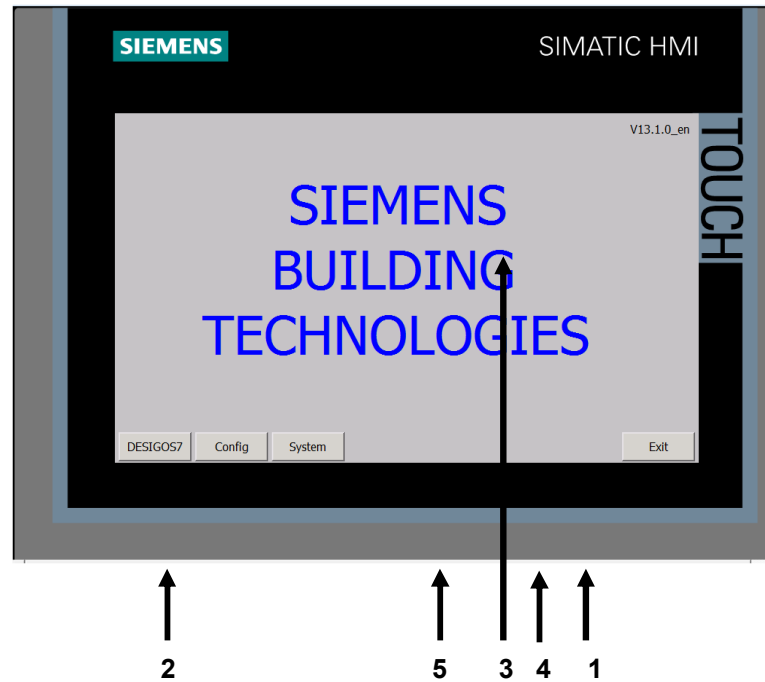
Restart the device after each change to the AS software (Exit button or REBOTT in the Control Panel via commands Settings> OP > Device > Reboot).

Update and reaction times for touching depend on the CPU (faster with a CPU400 than a CPU300).

## 3 Operate the S7 TP Comfort

### 3.1 Operating elements and display

---



- 1 Connection (terminals) to power (DC 24 V, 0.5 A).
- 2 Communications interface (RJ45).
- 3 Display.
- 4 MPI/DP connection.
- 5 USB connection



## 3.2 Menu

Start window "DESIGO S7" (4.1)	DESIGO S7 (4.6)	<b>Plant</b> , (4.6) e.g. "AHU 10, Temp Control" (scroll if plant has too many rows).	<b>Partial plant</b> (4.7), e.g. "Fan, 1-Stage" (scroll if partial plant has too many rows).	<b>Data points</b> (4.8), e.g. "Command".	<b>Data point properties</b> Examples: <ul style="list-style-type: none"> <li>Alarm (disturbance) (5).</li> <li>Field in blue font.</li> <li>Locked field (gray).</li> <li>Text entry field.</li> <li>Numeric entry field.</li> <li>Selection entry field.</li> </ul>	<ul style="list-style-type: none"> <li>"!!!" Designates faulty elements (with alarm).</li> <li>Value display; field cannot be edited.</li> <li>Login required (3.4); after using logout.</li> <li>Letter keyboard appears after touching (3.4).</li> <li>Numeric keyboard appears after touching (3.5).</li> <li>Dropdown list box appears (3.5).</li> </ul>
		Home Login (3.4) Res Filter Off/On (5) Esc OK	Home Login Res Filter Off/On Esc OK	Home Login Res Filter Off/On Esc OK	Home Login Res Filter Off/On Esc OK	Return to Start window. Log in as authorized user (3.4). Reserve, no function. Off: Show all; On: Show only elements with alarm (5). Return to next higher level. Apply entry.
	System (4.3)	Calibrate touch. System control.	Touch crosses To Control Panel			
		Home Reserve OK	Return to Start window. Reserve, no function. Confirm entry.			
	Config (4.2)	Communications Language User	Configure DE / EN / FR (system language) Manage passwords.			
		Home OK	Return to Start window . Apply entry.			
	Exit	Return to Control Panel				
	Control Panel	Restart the S7 TP Comfort from here among other functions.				

The functions are described in detail in the following sections (refer to the section numbers in brackets).

### 3.3 General system buttons

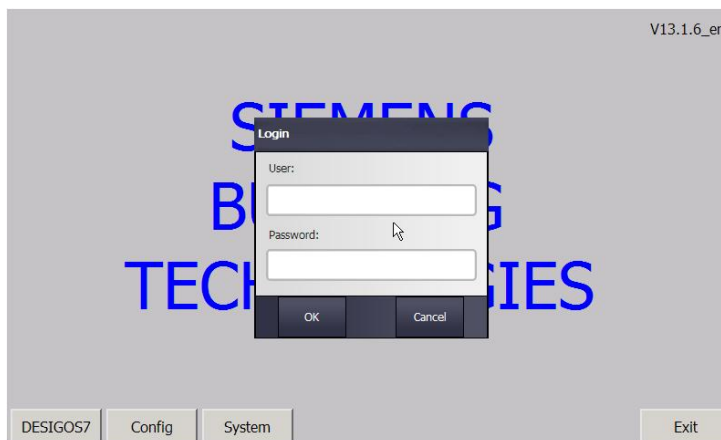
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OK.	Confirm and finish entry (numeric or selection).
ESC	The ESC button offers the following functions: <ul style="list-style-type: none"><li>• Undo. Undoes field entries provided they have not yet been confirmed with OK. (Password entry and numeric entry).</li><li>• Go back one level.</li></ul>
Scroll vertically	Scroll if the display is larger than the window.

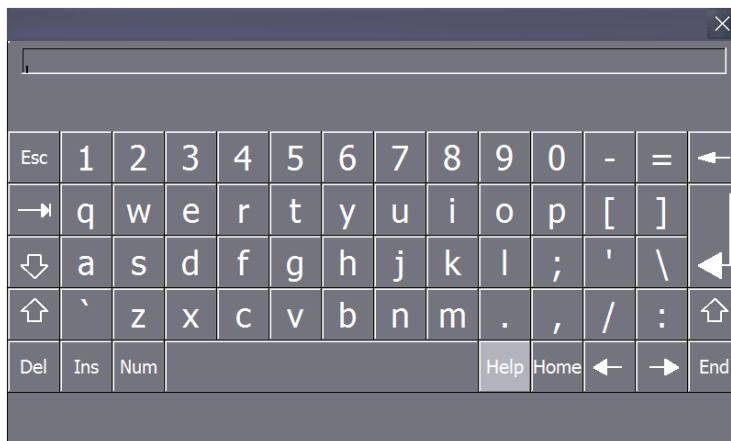
### 3.4 Enter login

Enter login

The login dialog box opens when you touch **Config** in the Start window or **Log on** in the DESIGO S7 windows:



The following keyboard is displayed when you touch the **User** or **Password** entry fields:



Enter user and password and apply using the RETURN key. Touch **OK** to confirm the Login dialog box.

Correct your entry using the **right** arrow.

**ESC** or **X** allows you to return to the Login dialog box without entering any data. **You must still confirm the window with OK.**

Note:  
Login locked

If you attempt to log in using the wrong password nine times in a row, login is locked (user no longer is authorized).

This is a system function. If the Administrator user (DES7/999) is moved to group "Unauthorized", a second administrator (ADMIN/2015) may be used to reauthorized the user (see Section.4.5, "Password and user administration").

## 3.5 Enter values

### General

You must first log in to be able to operate values:

Log in either via **Config** in the Start window or **Login** in the DESIGO S7 windows

### Procedure

You can enter TP values or states for control in the entry fields.

Proceed as follows:

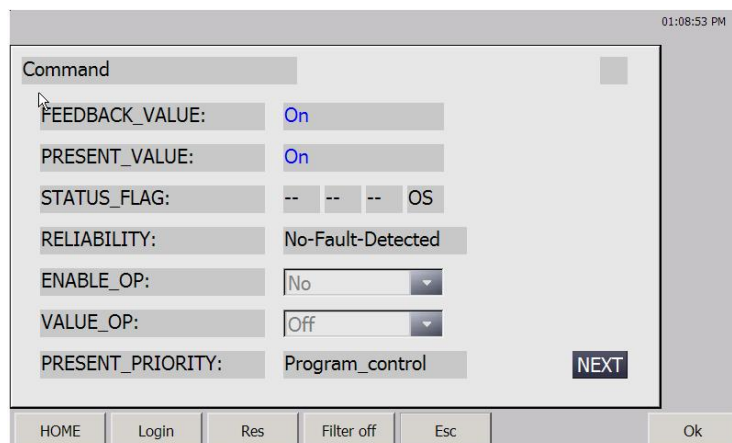
- Login via the **Login** button as needed.
- Enter the corresponding value. After field engineering, enter values as:
  - Numeric entry (via displayed keyboard).
  - Value entry by selection (via dropdown list box).
- Click **OK** to confirm your entry.
- Cancel wrong entries via **ESC** (numeric entries only). The original value is then reentered automatically in the field. Repeat your entry using the correct value and confirm with **OK**.

### Examples:

No operation possible  
(gray fields, gray font)

If you are not logged in, the entry fields (ENABLE\_OP, VALUE\_OP) are grayed.  
Operation is not possible.

Log in first and enter your user name and password.

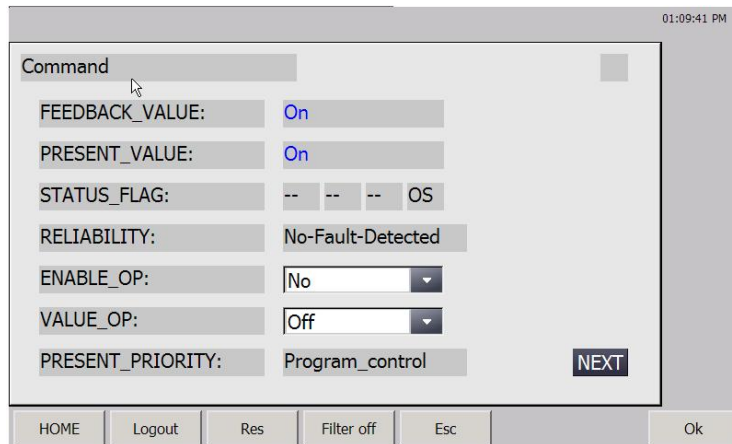


The screenshot shows a 'Command' window with a title bar at 01:08:53 PM. The window contains several control parameters, each with a label and a value field. The 'ENABLE\_OP' and 'VALUE\_OP' fields are grayed out, indicating they are not operable. The 'NEXT' button is visible in the bottom right corner of the parameter list. Below the parameter list is a navigation bar with buttons for HOME, Login, Res, Filter off, Esc, and Ok.

Parameter	Value
FEEDBACK_VALUE:	On
PRESENT_VALUE:	On
STATUS_FLAG:	-- -- -- OS
RELIABILITY:	No-Fault-Detected
ENABLE_OP:	No
VALUE_OP:	Off
PRESENT_PRIORITY:	Program_control

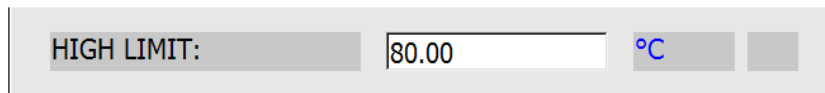
Operation possible

You are logged in, the **Login** button is now a **Logout** button.  
The entry fields are brighter and can be operated.

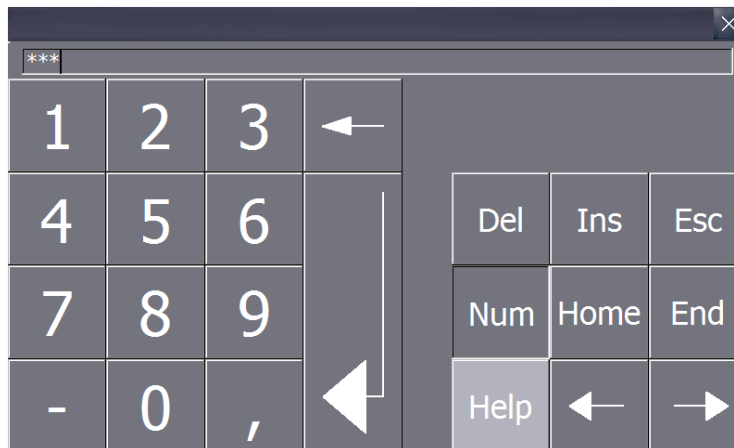


Enter numeric values  
(limits, setpoints, control  
parameters etc.)

When you touch a **numeric** entry field, e.g. upper limit of measured value (Al) ...



... the following keyboard opens.



Type in the value and apply using the RETURN key.  
Touch **OK** to confirm the entry.

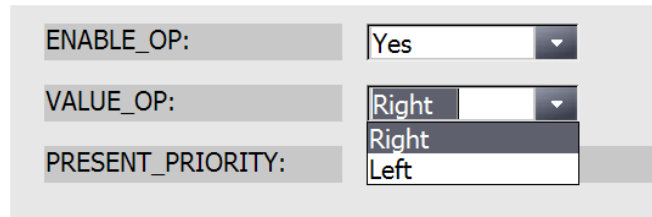
Correct your entry using the **right** arrow.

**ESC** or **X** allows you to return to the data point dialog box without entering any data.

**You must still confirm the window with OK.**

Enter selection values (desired stage, operating mode, ...)

When you touch a **symbol** entry field (arrow button right), a state text list opens:



ENABLE\_OP: Yes

VALUE\_OP: Right

PRESENT\_PRIORITY: Left

Select the desired text and confirm with **OK**.

When the state text list is open, **you must confirm the window with OK** even if you do not select a text.

### 3.6 Limit value check for entries

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Numeric entry fields

Limit values can be set for numeric entry fields.

The entered values are applied only if they are within the set limits. The value in the field remains unchanged if you enter an illegal value.

If operating privileges are set, the privileges are checked and operation may be refused.

Limit value checks are not carried out on the measuring range of the data point.

Selection entry fields

No limit value check is carried out on selection entry fields.

A check is carried out, however, if operating privilege "Manual" is set.

The number of stages for switching commands may be limited in the selection list depending on the overall setup (Num of Stage).

### 3.7 Alarm handling

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Proceed as follows if a plant is faulty (queued alarm, "\*\*\*\*", or several alarms visible):

- Move down in the plant hierarchy (Plant > Partial Plant > Data point) to locate the faulty element.
- Remove the cause of the plant fault.
- Check to ensure the alarm message on the TP Comfort is gone.

Each partial plant (Typical) has a "Common Alarm" window with the following entry fields:

ACKNOWLEDGE	---/ Yes
RESET	---/ Yes

An "AckTra" is generated here (acknowledge transition).

The alarm can be acknowledged with YES or reset if the state is "---".

## 4 System functions

### 4.1 Start window

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#### **Config**

"Administrator" password required

Use this button to open the dialog box to enter user name and password, language, and the MPI/DP/TCP address of the partner. (Section 4.2).

#### **System**

"Administrator" password required

Use this button to open the System window allowing you to enter other settings. (Section 4.3).  
(Calibrate touch, Date/Time of TP, Control Panel).

#### **DESIGO S7**

Use this button to open the window to operate the DESIGO S7 plants (plant overview).  
No password required, the graphics can only be monitored. (Level 0) (Section 4.6).

#### **EXIT**

Return to the standard Control Panel \*) of the S7 TP Comfort and restart the panel. (You must restart after each change to the CPU).

ADMIN password The default "Administrator" password is **DES7/999**.  
Can be changed. (Section 4.5).

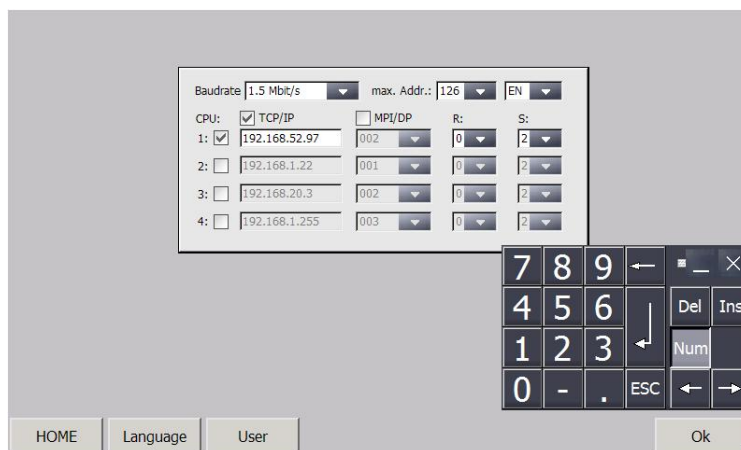
\*) As a rule, the system function (Settings, transfer, taskbar) of the DESIGO S7 TP Comfort corresponds to that of the Simatic TP Comfort. For this reason, please refer to the operating manual for the SIMATIC TP Comfort [1].

## 4.2 Configuration

Touch **Config** in the Start window to open the configuration window. (Provided you are logged in).

CPU No.1 and TCP/IP are selected per default.

Touch a numeric field to display the alphanumeric keyboard. "Num" displays just a numeric keyboard.



Enter address and rack number and confirm with **OK**.

### Set CPU parameters

You can parameterize up to four CPUs. Two communication protocols are possible (MPI/DP or TCP\_IP). (No mixing please).

Procedure:

- Select protocol (MPI/DP or TCP/IP).
- Select one or several CPUs (1 2 3 4) (no gap).
- Set rack number (R) and slot number (S) of the CPUs.
- Enter the CPU address. (The keyboard is displayed as soon as you touch the fields).
- Set the baud rate and highest member address for MPI/DP.
- Select window language (should be the same as system language): (Section 4.4). DE: German; EN: English.
- Select OK to apply and save your configuration settings.

### HOME

Return to the Start window.

### Language

"Administrator" password required

Use this button to change to the system language window (menus). (See chapter 4.4)

### User

"Administrator" password required

Use this button to open the window to enter user names and passwords. (Section 4.5).

### OK

Use this button to apply your configuration entries.

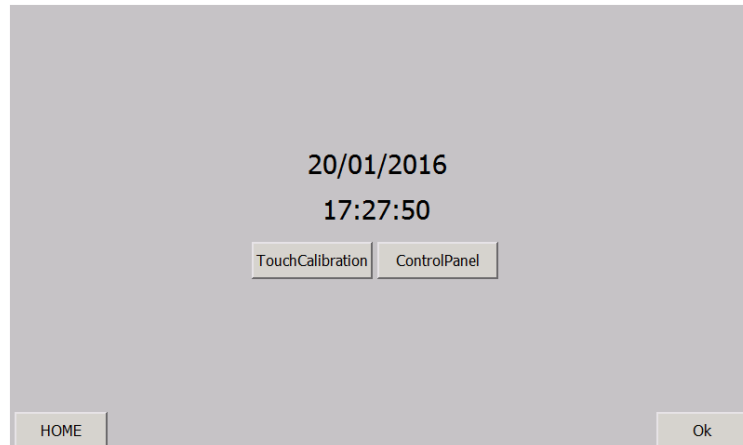


**Default configuration**

Number of CPUs	1
MPI/DP	2
TCP/IP	192.168.52.94
Rack	0
Slot	2
Baud rate	187.5 kbps
Highest station address	31
Language	German

## 4.3 System

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### Touch Calibration

Select this button and touch cross five times (center and four corners), then touch the display to save the settings.

Calibration is needed if you want to operate very small fields.

This setting is lost after power failure.

### Control Panel

This button takes you to the Control Panel.

See standard device manual hmi\_comfort\_panels\_operating\_instructions\_en-US [1]. The “Transfer” button can be used here to configure the TP communications protocol and the MPI or DP address.

Restriction: TP Comfort’s IP address cannot be changed in this way: Use the TP Comfort control panel (i.e. direct access).

### HOME

Return to the Start window.

### Time/Date

Set the system time: **(Not AS Time/Date)**

- Touch Date and enter the date via the keyboard.  
E.g. 12 February 2007 → 12.02.07  
Apply with **Return** and save with **OK**.
- Touch Hour and enter the time via the keyboard.  
E.g. 16 hours 52 minutes 22 seconds → 16:52:22  
Apply with **Return** and save with **OK**.

### OK

Use this button to apply and save date and time.

## 4.4 Language (menu)

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### General

This setting is lost after power failure.

Default language: German.

### Set Language

Touch the desired language and confirm with **OK**.

The system language should be the same as the configured language.

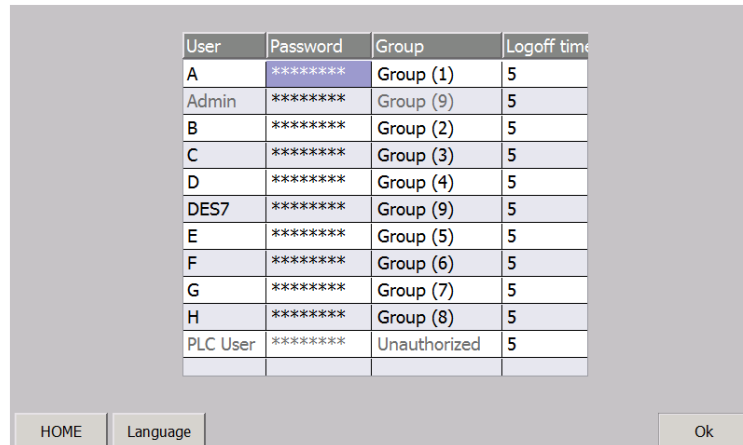
### HOME

Return to the Start window.

### OK

Use this button to apply the selected language.

## 4.5 Password and user administration



User	Password	Group	Logoff time
A	*****	Group (1)	5
Admin	*****	Group (9)	5
B	*****	Group (2)	5
C	*****	Group (3)	5
D	*****	Group (4)	5
DES7	*****	Group (9)	5
E	*****	Group (5)	5
F	*****	Group (6)	5
G	*****	Group (7)	5
H	*****	Group (8)	5
PLC User	*****	Unauthorized	5

HOME Language Ok

### General

A password, group and logout time are assigned to each user. Group9 (DES7 and ADMIN) has the highest rights and Group1 the lowest. (See next page). Users "DES7/Group(9)" and "ADMIN/Group(9)" are administrators. Group(0) (view only) does not need to be parameterized. This is the default group, active after logout time is expired, if DESIGO S7 windows were opened without login, or if a user logs out via the **Logout** button. Groups (1) to (8) correspond to the different operating levels.

The user name can be between 1 and 40 characters.

The password must be between at least 3 and max. 24 characters. (No blanks).

DES7 can reassign the user to his/her group if a user (A to H) was moved to group "Unauthorized" (see Section 2.4). (Group (1) to (8)).

If DES7 was moved to group "Unauthorized", ADMIN can reassign the user (Group (9)).

If ADMIN is moved to "Unauthorized", ADMIN can no longer be reauthorized.

In this case, you must reload the firmware (WinCC Comfort or Restore).

To operate fields:

Double-touch to display the keyboard or a selection list.

Enter values, numbers or assign a group and confirm with OK.

### HOME

Return to the Start window.

### Language

"Administrator" password required

Use this button to change to the system language window. (Section 4.4).

### OK

Use this button to apply your entries to the user window.

### Assign password level / operating privileges

The following password levels exist on the S7 TP Comfort.

Group	User / Password	Privilege	Comments
0	Logout	View only.	Touch "Logout" in DESIGO S7 window
1	A/111	No parameter affected	
2	B/222	Release OP (AO,BO,MO,AV,BV,MV) Value OP (AO,BO,MO,AV,BV,MV) Acknowledge (CMN_ALM) Reset (CMN_ALM)	
3	C/333	Low Limit (AI,AO,AV) High Limit (AI,AO,AV) Neutral Zone (AI,AO,AV) Setpoint (CTR) Present Value (AVOP,BVOP,MVOP) SWI_2P (all R/W parameters) SWI_2PH (all R/W parameter) CHAR (all interpolation points) HCRV, HRA (all R/W parameters) KICKFNCT (all R/W parameters) CONT_4ST (all R/W parameters) EVT_DATE (all R/W parameters) EVT_WDAY (all R/W parameters)	
4	D/444	SP_SUPPLY (all R/W parameters) CAS_CONT (all R/W parameters)	
5	E/555	No parameter affected	
6	F/666	No parameter affected	
7	G/777	No parameter affected	
8	H/888	No parameter affected	
9	DES7/999	Operate all including system function (password, license, TP time, ...).	
9	ADMIN/2015	Same as DES7; used to reauthorize DES7 as needed.	Read-only group.

Note

All operating levels include the operating privileges of all lower levels.

## 4.6 Plant overview window

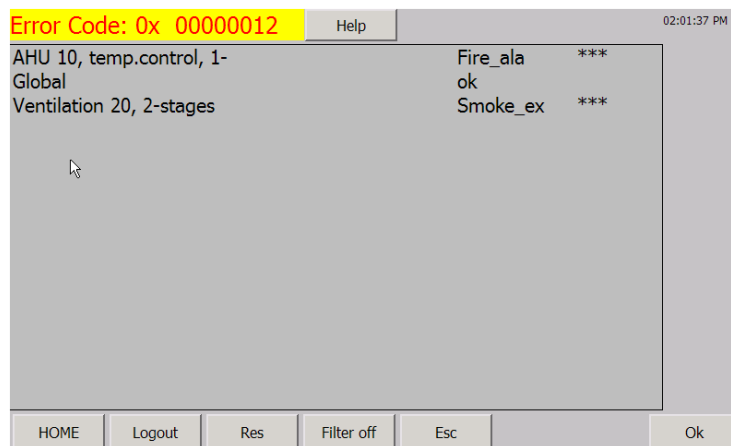
### General

The plant overview window displays all plants upon start (**DESIGO S7** in Start window). You can monitor and operate all plant objects from this window. In addition, communications problems and AS time are displayed in a message.

### Design

The pixel sizes in the XML files are set so that the first 15 blocks in the TP700/900 are displayed, but in the TP1200/1500 the first 25 blocks are displayed.

Any other lines must be operated by scrolling vertically.



### General

The descriptions below apply to all DESIGO S7 windows. Button **Filter off/on** is irrelevant for data point windows.

**RW** and **RO** mean:  
**Read-write** and **read-only**.

### Columns

- Column 1: Plant name clear text.  
Depends on the pixel size (max. 24 characters).  
May be cropped.
- Column 2: Setpoint or desired stage.  
(Number of characters depends on pixel size; text may be cropped).
- Column 3: Fault identification (\*\*\*)

### HOME

Return to the Start window.

### Logout / Login

This button allows for changing the operating privileges to Group 0 (Logout) or Group 1 to 9 (Login).  
If "Login" is displayed, a keyboard appears to enter user name and password. After confirmation, the button label changes to "Logout". If "Logout" is displayed, touching changes the operator privilege to Group 0 and the button label returns to "Login".

### Res

This is a Reserve button that opens an empty window if this type of window and link to WinCC Comfort was engineered flexibly and downloaded in the TP. This button can be used only **for one single window reference**.

### Filter off/Filter on

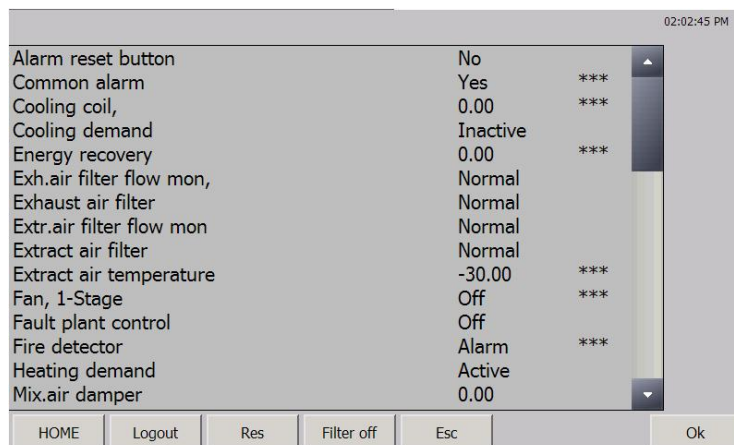
This button allows you to select if all plants/levels should be displayed (Filter off) or only faulty ones (elements with queued alarm) (Filter on).

- ESC** This button allows you to return to the previous window.  
There is no button to go to the plant overview  
(you *ARE* in the plant overview).
- OK** Use this button to apply your entries.
- Help and Error Code** Use this button to change to the Help window. If communication between the TP and AS is faulty, or if the configuration window contains faulty parameters, an error ID is displayed. The ID's meaning is available in the Help window. (Section 5).  
Button **Help** and Error ID appear in the message row only in the event of an error.

## 4.7 Partial plant overview window

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- General** The partial plant overview window shows all partial plants of a plant.  
You can monitor and operate all partial plants of this plant from this window.
- Design** The pixel sizes in the XML files are set so that the first 15 blocks in the TP700/900 are displayed, but in the TP1200/1500 the first 25 blocks are displayed.  
Any other lines must be operated by scrolling vertically.



- Columns**
  - Column 1: Partial plant name clear text.  
(Depends on the pixel size (max. 24 characters).  
May be cropped.
  - Column 2: Setpoint / Desired stage.
  - Column 3: Fault identification (\*\*\*)

## 4.8 Block overview window

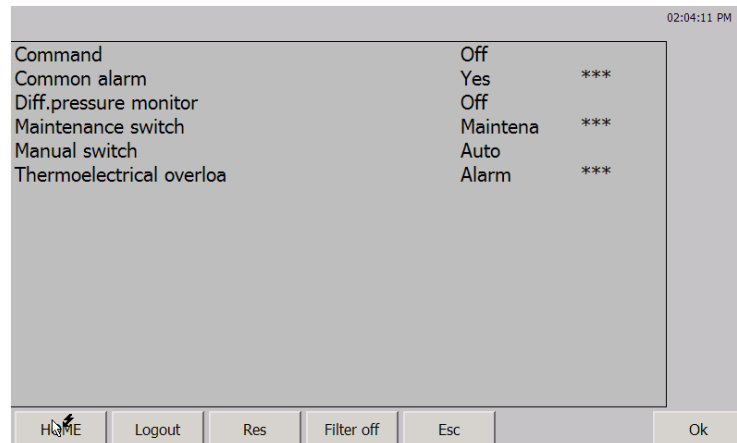
---

### General

The block overview window shows all blocks of a partial plant.  
You can monitor and operate all blocks of this partial plant from this window.

### Design

The pixel sizes in the XML files are set so that the first 15 blocks in the TP700/900 are displayed, but in the TP1200/1500 the first 25 blocks are displayed.  
Any other lines must be operated by scrolling vertically.



### Columns

- Column 1: Block name clear text.  
(Depends on the pixel size (max. 24 characters)).  
May be cropped.
- Column 2: Setpoint, actual value or desired stage.  
(Number of characters depends on pixel size; text may be cropped).
- Column 3: Fault identification (\*\*\*)

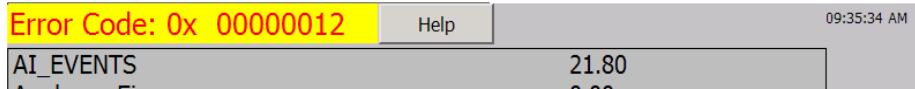


# 5 TP Comfort error messages

## General

The S7 TP Comfort is based on the SIMATIC TP Comfort; for this reason, standard system messages are not described here.

Technically specific error messages in excess of standard error message, however, are described here.



## Column meaning

Error Code :  
e.g. 0x 00130012  
Help

In the event of an error, an error ID appears in the message row for each configured CPU.

Use this button to change to the Help window.

**Help** is displayed only in the message row if there is an error.

## Note

The most common error messages have ID **12** (faulty configuration or duplicate address in network) and **13** (DB not loaded or wrong DB).

Example : 0x 00130012 means

- CPU1 not configured correctly.
- DB1 or data point DB missing in CPU3.

## Special feature

Communications errors are signaled only after ca. 1 minute due to the set "Time\_out" of the TCP/IP protocol.

The same is true when you touch **Help**.

## Help1

## Help2

