DESIGO™ S7
Touch Panel S7 TP Comfort
Operating instructions
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1 About this document

1.1 Revision history

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>_01</td>
<td>July.2009</td>
<td>First draft</td>
</tr>
</tbody>
</table>

1.2 Further documents

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Document title</th>
<th>Document type</th>
<th>Document number</th>
</tr>
</thead>
<tbody>
<tr>
<td>[1]</td>
<td>Standard device manual hmi_comfort_panels_operating_instructions_en-US</td>
<td>Device manual</td>
<td>6AV6991-1DG01-0AA0 (Siemens AI)</td>
</tr>
</tbody>
</table>

1.3 Before you start

1.3.1 Trademarks

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<table>
<thead>
<tr>
<th>Trademarks</th>
<th>Legal owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>Microsoft Corporation</td>
</tr>
</tbody>
</table>

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1.4 Target audience

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**
  - 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

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

<table>
<thead>
<tr>
<th>Start window <em>DESIGO S7</em> (4.1)</th>
<th>DESIGO S7 (4.6)</th>
<th>Plant, (4.6) e.g. &quot;AHU 10, Temp Control&quot; (scroll if plant has too many rows).</th>
<th>Partial plant (4.7), e.g. &quot;Fan, 1-Stage&quot; (scroll if partial plant has too many rows).</th>
<th>Data points (4.8), e.g. &quot;Command&quot;.</th>
<th>Data point properties Examples:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Home Login (3.4)</td>
<td>Home Login Res Filter Off/On (5) Esc OK</td>
<td>Home Login Res Filter Off/On Esc OK</td>
<td>Home Login Res Filter Off/On Esc OK</td>
<td>&quot;!!!&quot; Designates faulty elements (with alarm).</td>
</tr>
<tr>
<td></td>
<td>Res Filter Off/On (5) Esc OK</td>
<td>Touch crosses To Control Panel</td>
<td></td>
<td></td>
<td>Value display; field cannot be edited.</td>
</tr>
<tr>
<td></td>
<td>OK</td>
<td></td>
<td></td>
<td></td>
<td>Login required (3.4); after using logout.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Letter keyboard appears after touching (3.4).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Numeric keyboard appears after touching (3.5).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Dropdown list box appears (3.5).</td>
</tr>
<tr>
<td>Config (4.2)</td>
<td>Communications Language User</td>
<td>Configure DE / EN / FR (system language) Manage passwords.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exit</td>
<td>Home OK</td>
<td>Return to Start window. Apply entry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control Panel</td>
<td>Return to Control Panel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

OK. Confirm and finish entry (numeric or selection).

ESC The ESC button offers the following functions:
- Undo.
  Undoes field entries provided they have not yet been confirmed with OK.
  (Password entry and numeric entry).
- Go back one level.

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:

![Login dialog box](image)

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

![Keyboard](image)

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.
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 (AI) ...

... 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:

```
<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENABLE_OP:</td>
<td>Yes</td>
</tr>
<tr>
<td>VALUE_OP:</td>
<td>Right</td>
</tr>
<tr>
<td>PRESENT_PRIORITY:</td>
<td>Left</td>
</tr>
</tbody>
</table>
```

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

**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

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:

```
<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGE</td>
<td>---/ Yes</td>
</tr>
<tr>
<td>RESET</td>
<td>---/ Yes</td>
</tr>
</tbody>
</table>
```

An "AckTra" is generated here (acknowledge transition).
The alarm can be acknowledged with YES or reset if the state is "---".
# System functions

## Start window

<table>
<thead>
<tr>
<th>Button</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Config</strong></td>
<td>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).</td>
</tr>
<tr>
<td><strong>System</strong></td>
<td>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).</td>
</tr>
<tr>
<td><strong>DESIGO S7</strong></td>
<td>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).</td>
</tr>
<tr>
<td><strong>EXIT</strong></td>
<td>Return to the standard Control Panel *) of the S7 TP Comfort and restart the panel. (You must restart after each change to the CPU).</td>
</tr>
</tbody>
</table>

**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

**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)

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

General

A password, group and logout time are assigned to each user. Group 9 (DES7 and ADMIN) has the highest rights and Group 1 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.

<table>
<thead>
<tr>
<th>Group</th>
<th>User / Password</th>
<th>Privilege</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Logout</td>
<td>View only.</td>
<td>Touch &quot;Logout&quot; in DESIGO S7 window</td>
</tr>
<tr>
<td>1</td>
<td>A/111</td>
<td>No parameter affected</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>B/222</td>
<td>Release OP (AO,BO,MO,AV,BV,MV) Value OP (AO,BO,MO,AV,BV,MV) Acknowledge (CMN_ALM) Reset (CMN_ALM)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>C/333</td>
<td>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)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>D/444</td>
<td>SP_SUPPLY (all R/W parameters) CAS_CONT (all R/W parameters)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>E/555</td>
<td>No parameter affected</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>F/666</td>
<td>No parameter affected</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>G/777</td>
<td>No parameter affected</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>H/888</td>
<td>No parameter affected</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>DES7/999</td>
<td>Operate all including system function (password, license, TP time, ...).</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>ADMIN/2015</td>
<td>Same as DES7; used to reauthorize DES7 as needed. Read-only group.</td>
<td></td>
</tr>
</tbody>
</table>

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).
### 4.7 Partial plant overview window

**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.

| 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.

![Block overview window screenshot]

**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 (***)
# 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.

<table>
<thead>
<tr>
<th>Error Code : e.g. 0x 00130012</th>
<th>Help</th>
<th>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. <strong>Help</strong> is displayed only in the message row if there is an error.</th>
</tr>
</thead>
</table>

## Column meaning

## 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**