

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6AV2124-0GC01-0AX0

TP700 COMFORT TOUCH OPERATOR PANEL

Used with the applicable SIMATIC HMI Comfort Panels configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens Comfort Panels operating instructions A5E36770603-AE

Mounting and connecting the device

3.1 Preparing for installation

3.1.1 Selecting installation location

Points to observe when selecting the mounting location:

- Position the HMI device so that it is not subjected to direct sunlight.
- Position the HMI device such that it is ergonomically accessible for the operator.
Choose a suitable mounting height.
- Ensure that the HMI device air vents are not covered as a result of installation.
- Note the permitted mounting positions.

3.1.2 Checking the delivery

Check the package content for visible signs of transport damage and for completeness.

Note**Damaged parts**

A damaged part will cause the HMI device to malfunction.

Do not install parts damaged during shipment. In the case of damaged parts, contact your Siemens representative.

Check the scope of supply of the HMI device, see section "Scope of delivery (Page 15)".

Additional documents may be included in the delivery.

The documentation is part of the HMI device and is required for subsequent commissioning. Keep all enclosed documentation for the entire service life of the HMI device. You must pass along the enclosed documentation to any subsequent owner or user of the HMI device. Make sure that every supplement to the documentation that you receive is stored together with the operating instructions.

3.1 Preparing for installation

3.1.3 Checking the operating conditions

Note the following aspects before installing the HMI device:

1. Familiarize yourself with the standards, approvals, EMC parameters and technical specifications for operation of the HMI device. This information is available in the following sections:
 - Certificates and approvals (Page 189)
 - Electromagnetic compatibility (Page 195)
2. Check the mechanical and climatic ambient conditions for operation of the HMI device: Technical information (Page 189).
3. Read the notes on the local use of the HMI device: Notes about usage (Page 29).
4. Note the permissible rated current: +24 V DC

3.1.4 Permitted mounting positions

The HMI device is suitable for installation in:

- Mounting cabinets
- Control cabinets
- Switchboards
- Consoles

In the following, all of these mounting options are referred to by the general term "cabinet".

The device is self-ventilated and approved for inclined mounting at angles up to $\pm 35^\circ$ from the vertical.

NOTICE
Damage due to overheating
An inclined installation reduces the convection by the HMI device and therefore the maximum permitted ambient temperature for operation.
If there is sufficient convection from forced ventilation, the HMI device can also be operated in the inclined mounting position up to the maximum permitted ambient temperature for vertical mounting. The HMI device may otherwise be damaged and its certifications and warranty will be void.
The working temperature ranges listed in this section apply to the rear and the front of the HMI device.

For detailed information regarding the permitted ambient temperatures, refer to section "Climatic ambient conditions (Page 197)".

Mounting position

Select one of the approved mounting positions for your HMI device. The approved mounting positions are described in the following sections with KP700 Comfort and TP700 Comfort as examples.

3.1.6 Preparing the mounting cutout

Note

Stability of the mounting cutout

The material in the area of the mounting cutout must provide sufficient strength to guarantee lasting and safe mounting of the HMI device.

To achieve the degrees of protection described below, it must be ensured that deformation of the material cannot occur due to the force of the mounting clips or operation of the device.

Degrees of protection and installation area

The degrees of protection of the HMI device can only be guaranteed if the following requirements are met:

- Material thickness at the mounting cutout for a protection rating of IP65 or Front face only Type 4X/Type 12 (indoor use only): 2 mm to 6 mm
- Permissible deviation from plane at the mounting cutout: ≤ 0.5 mm
This condition must also be fulfilled for the mounted HMI device.
- Permissible surface roughness in the area of the seal: ≤ 120 μm (R_z 120)
- The installation area is dry and free from contamination, such as dust or lubricant.

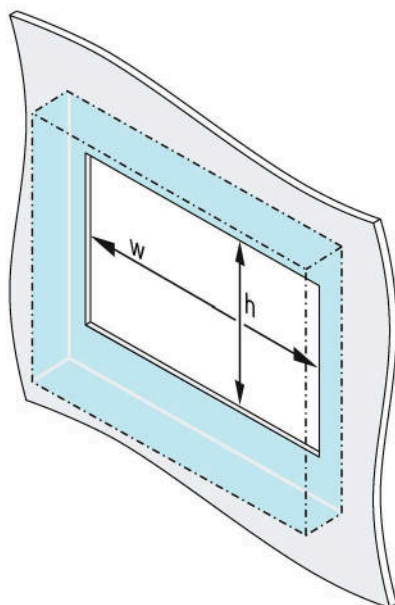
Compatibility of the mounting cutout to other HMI devices

The mounting cutouts of the following HMI devices are compatible with the mounting cutouts of the following predecessor devices:

HMI device	Mounting cutout compatible with
KP400 Comfort	OP 77B
KTP400 Comfort	TP 177B 4"
KP700 Comfort	OP 277 6"
TP700 Comfort	TP 177B 6", MP 177 6", TP 277 6"
KP900 Comfort	MP 277 8" key
KP1500 Comfort	MP 377 12" key

Please note that although the dimensions for the mounting cutout are the same, the device depth and/or the enclosure front dimensions may differ from the respective dimensions of the predecessor devices.

Dimensions of the mounting cutout



	$w \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$	x	$h \begin{smallmatrix} +1 \\ 0 \end{smallmatrix}$
KP400	135	x	171 mm
KTP400	122	x	98 mm
KP700	281	x	177 mm
TP700	197	x	141 mm
KP900	338	x	206 mm
TP900	250	x	166 mm
KP1200	434	x	268 mm
TP1200	310	x	221 mm
KP1500	450	x	291 mm
TP1500	396	x	291 mm
TP1900	465	x	319 mm
TP2200	542	x	362 mm

Width and height should be reversed accordingly when mounting in portrait format.

3.1.7 Labeling the function keys

Use the labeling strips to label the function keys of the HMI devices based on the project.

You will find labeling strip templates with a scale of 1:1 as a Word file:

- On the Internet at:
Downloads for Comfort Panels
(<https://support.industry.siemens.com/cs/ww/en/ps/14742/dl>)
- In the "Support" folder on the WinCC installation DVD

If you would like to make your own labeling strips, you can find the dimensions under "Dimensions for labeling strips (Page 217)".

Note

Do not write on the keyboard to label the function keys.

Any printable and writable film can be used as labeling strip. The permitted thickness of the labeling strip is 0.15 mm. Do not use paper labeling strips.

3.2 Mounting the device

Comfort HMI device	Mounting clips		
	Type	Quantity	Position on the HMI device
TP700	Aluminum mounting clips 	10	 TP700 Comfort
KP700 TP900 TP1200		12	 KP700 Comfort TP900 Comfort TP1200 Comfort
KP900 KP1200		16	 KP900 Comfort KP1200 Comfort
KP1500 TP1500 TP1900 TP2200	Steel mounting clips 	12	 KP1500 Comfort TP1500 Comfort TP1900 Comfort TP2200 Comfort

Requirement

- All packaging components and protective films were removed from the HMI device.
- To install the HMI device, you need the mounting clips from the accessories kit.
- The mounting seal must be installed on the HMI device.

3.3 Connecting the device

3.3.1 Notes on connection

Requirement

- The HMI device must be mounted according to the specifications of these operating instructions.

Connecting cables

Use only shielded standard cables as data connecting cables, order information is available on the Internet (<https://mall.industry.siemens.com>).

Note

Separate SELV/PELV circuits from other electric circuits or insulate the cables

The wiring of SELV/PELV circuits must either be separated from the wiring of other non-SELV/PELV electric circuits, or the insulation of all conductors must be rated for the higher voltage. Alternatively, a grounded shield or additional insulation must be installed around the wiring for SELV/PELV circuits or the other electric circuits, based on IEC 60364-4-41.

Note on using the HMI device within the scope of UL approval:

Note

Use copper cables at connectors with terminal connections

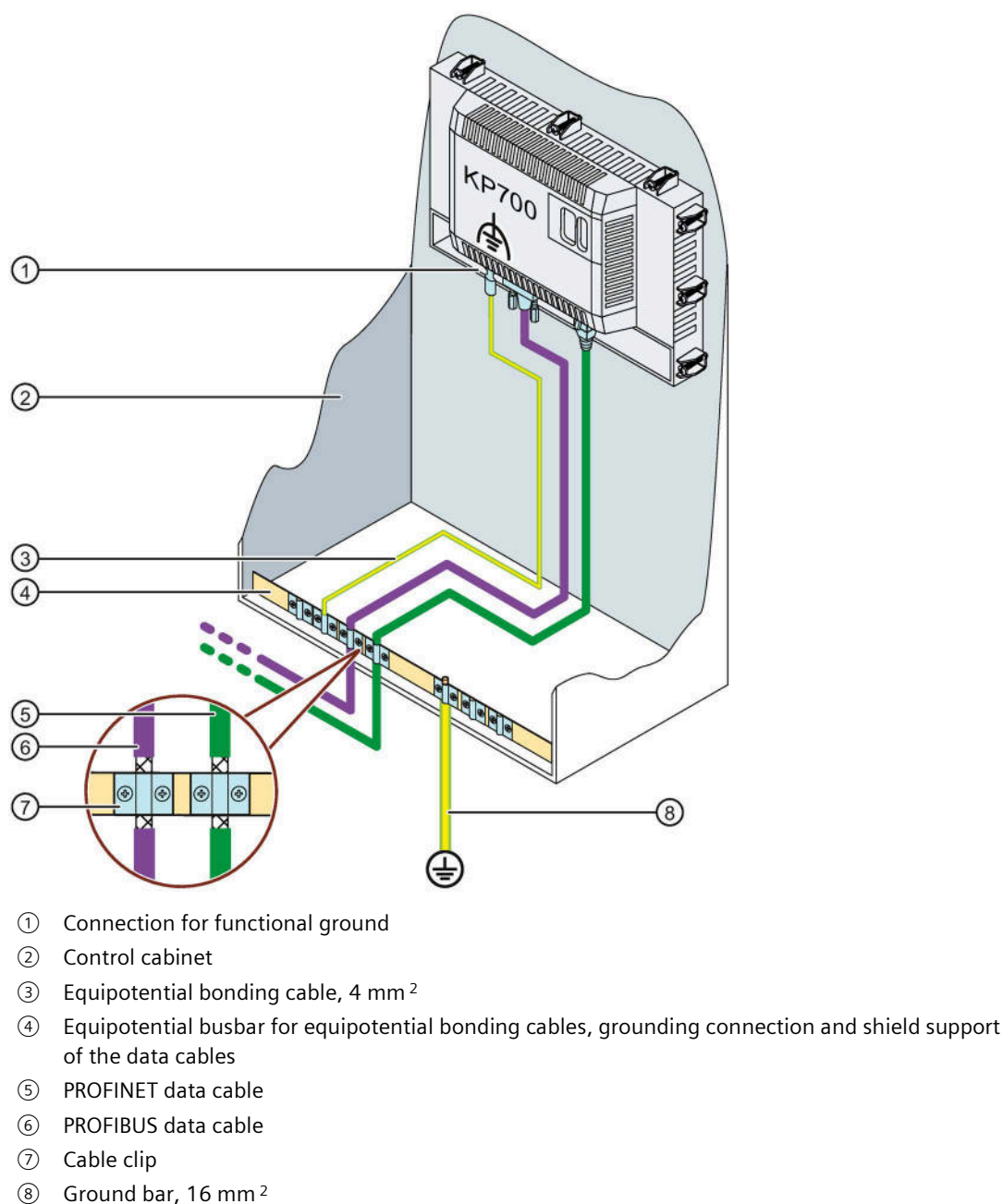
Use copper (Cu) cables for all supply lines that are connected to the device with terminals, e.g. 24 V DC power supply cables to the 24 V DC power supply connectors.

Utiliser des câbles en cuivre sur les connexions à bornes

Utilisez des câbles en cuivre (Cu) pour tous les câbles d'alimentation qui sont raccordés à l'appareil par des bornes, par exemple les câbles d'alimentation 24 V CC sur le connecteur d'alimentation 24 V CC.

Wiring diagram

The following figure shows the connection of the functional ground for equipotential bonding with KP700 Comfort as an example and similarly applies to the other Comfort devices.



3.3.3 Connecting the power supply

NOTICE**Safe electrical isolation**

For the 24 V DC supply, only use power supply units with safe electrical isolation (SELV/PELV) in line with IEC 61010-2-201.

The supply voltage must be within the specified voltage range. Otherwise, malfunctions at the HMI device cannot be ruled out.

The following applies for a non-isolated system design: Connect the GND 24 V connection from the 24 V power supply output to equipotential bonding for uniform reference potential. You should always select a central point of termination.

NOTICE**External protective wiring required for Comfort V1/V1.1 devices**

The following applies to Comfort V1/V1.1 devices: An external protective circuit is required for operation with 24 V DC, see section 7 "Lightning protection and overvoltage protection" in function manual "Designing interference-free controllers

(<https://support.industry.siemens.com/cs/ww/en/view/59193566>)".

Wiring diagram

The following figure shows the connection between the power supply and the HMI device with TP1500 Comfort V2 as an example.



Note when connecting

The power supply connector is contained in the accessory kit. The power supply connector is designed for cables with a maximum cross-section of 1.5 mm². Torque for the screws: 0.5 to 0.6 Nm.

Additional information on the supplied power supply connectors and additional permitted power supply connectors can be found in the section "Accessories (Page 22)."

Connecting the power supply connector

NOTICE

Do not damage the socket

Do not tighten the screws of the power supply connector when it is plugged into the HMI device. The pressure from the screwdriver could damage the HMI device socket.

Connect the power supply cables when the power supply connector is unplugged from the HMI device.

1. Switch off the power supply.
2. Connect the power supply cables to the power supply connector as shown in the above figure, torque 0.5 to 0.6 Nm.
3. Connect the power supply connector to the corresponding socket of the HMI device as shown in the above figure. Check the correct polarity of the cables using the interface marking on the back of the HMI device.

Reverse polarity protection

The HMI device comes with electronic reverse polarity protection which prevents the device from being damaged in case the power supply cables are connected incorrectly.

Connecting the uninterruptible power supply

The following figure shows how to connect an uninterruptible power supply (UPS) to the HMI device with TP1500 Comfort V2 as an example. The uninterruptible power supply is connected to the connection for the power supply and to a Type A USB port of the HMI device.



The following uninterruptible power supplies are supported for connection to the USB port of the HMI device: SITOP DC UPS modules as of a rated power value of 6 A

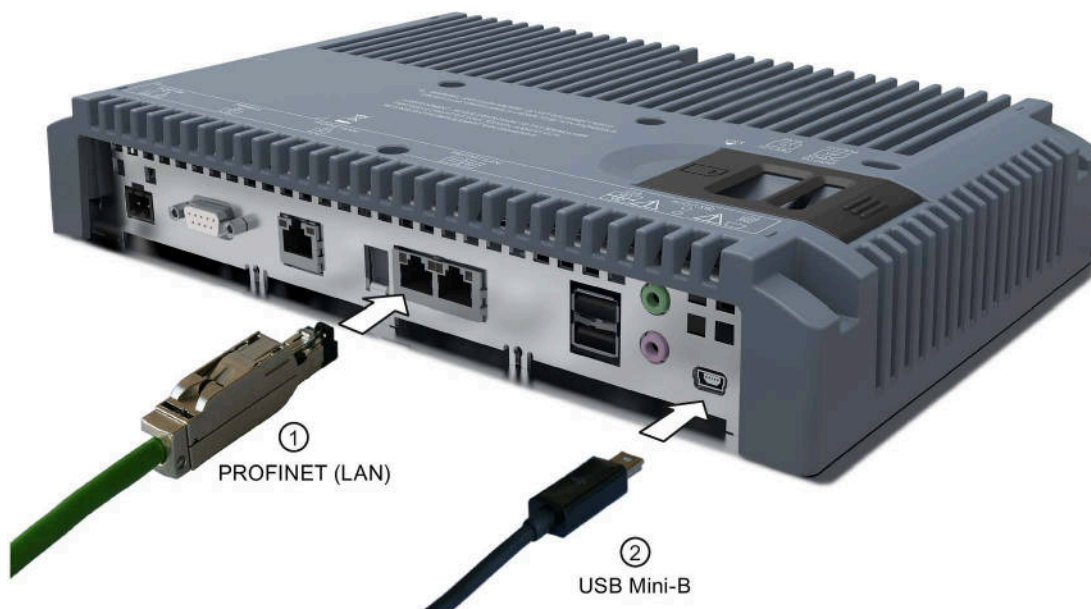
See also

Setting the uninterruptible power supply (Page 158)

3.3.4 Connecting the configuration PC

Wiring diagram

The following figure shows how to connect a Comfort V1 device to a configuration PC with TP1500 Comfort V1 as an example.



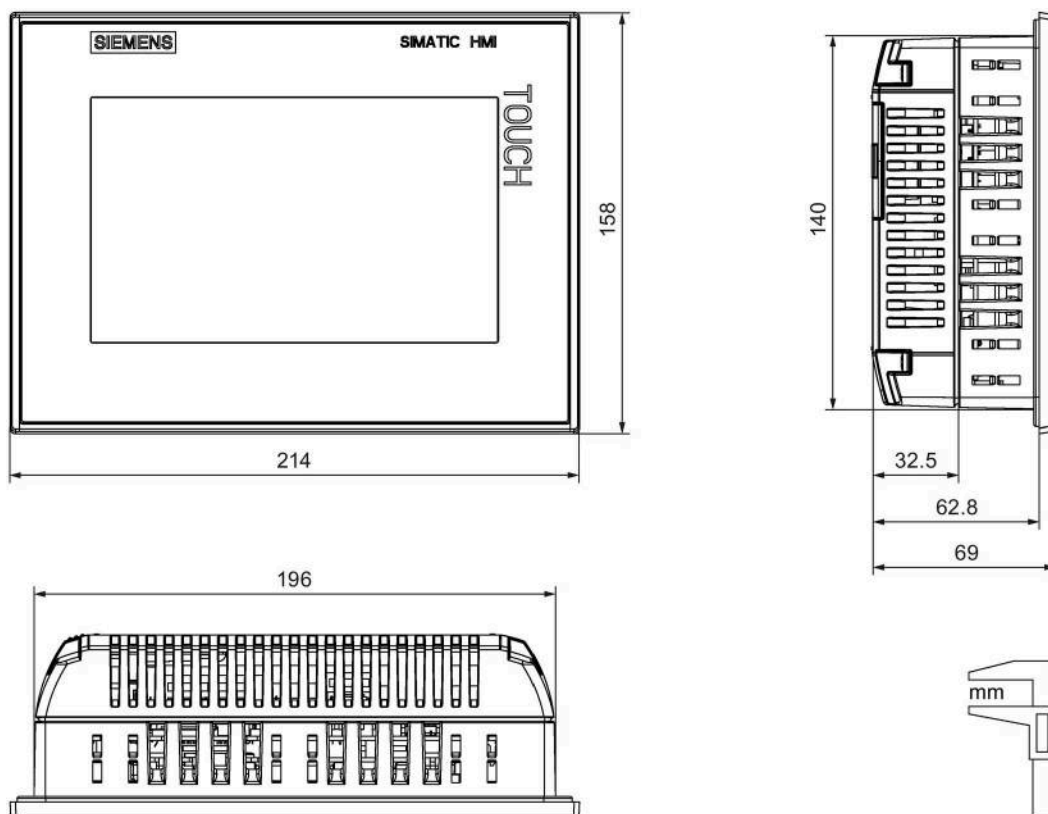
The Comfort V1.1 devices are connected in the same way.

The following figure shows how to connect a Comfort V2 device to a configuration PC with TP1500 Comfort V2 as an example.



8.7.8 Dimension drawings of the TP700 Comfort

The following figures show the dimension drawings of the Comfort V1/V1.1 devices.



8.8 Technical specifications

8.8.1 KP400 Comfort to KP1200 Comfort, KTP400 Comfort to TP1200 Comfort

Weight

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
Weight without packaging	0.8 kg	0.6 kg	2.2 kg	1.4 kg	2.7 kg	1.9 kg	4.4 kg	2.8 kg

Display

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
Type	LCD TFT with extended viewing angle							
Active display area	4.3" 95.0 x 53.8 mm		7.0" 152.4 x 91.4 mm		9.0" 195.0 x 117.0 mm		12.1" 261.1 x 163.2 mm	
Resolution	480 x 272 pixels		800 x 480 pixels				1280 x 800 pixels	
Possible colors	Up to 16 million							
Brightness control	Yes, from 0 to 100 ¹ , 0 = backlighting off							
Backlighting	LED							
Half Brightness Life Time (MTBF ²)	80000 h							
Pixel error class in accordance with ISO 9241-307	II		I					

¹ Via WinCC: Complete range, via Control Panel: Minimum to 100

² MTBF: Operating hours after which the maximum brightness is reduced by half compared to the original value. MTBF is increased by using the integrated dimming function, for example time-controlled via screen saver or centrally via PROFInergy.

Input device

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
Keyboard (numeric/alpha entry)	Yes	Yes	Yes	No	Yes	No	Yes	No
Touch screen (analog resistive)	No	Yes	No	Yes	No	Yes	No	Yes
Function keys	8	4	24	No	26	No	34	No
Labeling strips	Yes	Yes	Yes	No	Yes	No	Yes	No

Memory

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
Usable memory for application data	4 MB		12 MB					
Usable memory for recipe data ¹	512 KB		2 MB					
Additional memory for options	4 MB		12 MB					
Data memory card ²	1 x MMC/SD combination slot							
System memory card ²	1 x SD slot							

¹ Can be extended via memory card

² Memory cards are available as SIMATIC HMI accessories

Interfaces

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
1 x RS 422/485 (PROFIBUS)	Max. 12 Mbps, applies to DP operations							
Ethernet (PROFINET)	1 x RJ45 10/100 Mbps		2 x RJ45 10/100 Mbps ¹					
Audio	-		Line Out					
USB 2.0	1 x Host ² 1 x Device ³		2 x Host ² 1 x Device ³					

¹ With integrated switch (one IP address only)

² USB type A, maximum load 500 mA, equivalent to USB standard 2.0

³ USB type Mini-B (5-pin), equivalent to USB standard 2.0

Power supply

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
Rated voltage	24 V DC							
Permitted voltage range	+19.2 V ... +28.8 V							
Mains and voltage buffering time	20 ms, corresponds to PS2 according to IEC 61131-2							
Rated current	0.13 A		0.5 A		0.75 A		0.85 A	
Rated current (min. ... max.), load-dependent	0.13 ... 0.55 A		0.5 ... 0.85 A		0.75 ... 1.05 A		0.85 A ... 1.20 A	
Inrush current I ² t	0.5 A ² s							
Power consumption ¹	3.1 W		12 W		18 W		20 W	
Maximum permitted transients	35 V (500 ms)							
Minimum time between two transients	50 s							
Internal protection	Yes							

¹ The power loss generally corresponds to the specified value for power consumption.

Miscellaneous

Comfort HMI devices	KP400 Comfort	KTP400 Comfort	KP700 Comfort	TP700 Comfort	KP900 Comfort	TP900 Comfort	KP1200 Comfort	TP1200 Comfort
Buffered real-time clock ¹	Yes							
Audio reproduction	Onboard beeper		Integrated or external via Line OUT					

¹ Battery backup typically 6 weeks

8.8.2 KP1500 Comfort, TP1500 Comfort to TP2200 Comfort

Weight

Comfort V1 devices	KP1500 Comfort V1	TP1500 Comfort V1	TP1900 Comfort V1	TP2200 Comfort V1
Weight without packaging	5.4 kg	5.2 kg	6.5 kg	7.1 kg

Comfort V2 devices	KP1500 Comfort V2	TP1500 Comfort V2	TP1900 Comfort V2	TP2200 Comfort V2
Weight without packaging	4.7 kg	4.4 kg	5.6 kg	6.7 kg

Display

Comfort HMI devices	KP1500 Comfort	TP1500 Comfort	TP1900 Comfort	TP2200 Comfort
Type	LCD TFT with extended viewing angle		LCD TFT	LCD TFT with extended viewing angle
Active display area	15.4" 331.2 x 207.0 mm		18.5" 409.8 x 230.4 mm	21.5" 475.2 x 267.3 mm
Resolution	1280 x 800 pixels		1366 x 768 pixels	1920 x 1080 pixels
Possible colors	Up to 16 million			
Brightness control	Yes, from 0 to 100 ¹ , 0 = backlighting off			
Backlighting	LED		LED	LED
Half Brightness Life Time (MTBF ²)	80000 h		50000 h	30000 h
Pixel error class in accordance with ISO 9241-307	I			

¹ Via WinCC: Complete range, via Control Panel: Minimum to 100

² MTBF: Operating hours after which the maximum brightness is reduced by half compared to the original value. MTBF is increased by using the integrated dimming function, for example time-controlled via screen saver or centrally via PROFInergy.

8.11 Communication with controllers

Number of connections

Connection	KP400 Comfort KTP400 Comfort	KP700 Comfort to KP1500 Comfort TP700 Comfort to TP2200 Comfort
Number using a bus connection	4	8
Number of connections based on "SIMATIC HMI HTTP Protocol"	4	8

Note

Communication faults with PROFINET IO

If you enable PROFINET services in the Control Panel of the HMI device, communication problems can occur if you use controllers from other manufacturers.

Controllers that are not compatible with PROFINET services are noted in the following table in the footnote. Do not enable PROFINET services for these controllers.

Controllers

The table below shows the controllers and the communication drivers which can be used with the HMI devices.

Controller	HMI devices
SIMATIC S7-1500	Yes
SIMATIC S7-1200	Yes
SIMATIC S7-300/400	Yes
SIMATIC S7-200	Yes
SIMATIC HTTP protocol	Yes
LOGO!	Yes
Allen-Bradley EtherNet/IP	Yes
Allen-Bradley DF1	Yes ^{1,2}
Mitsubishi MC TCP/IP	Yes
Mitsubishi FX	Yes ²
Modicon Modbus TCP/IP	Yes
Modicon Modbus RTU	Yes ²
Omron Hostlink	Yes ²

¹ Direct communication with PLC 5 with the KF2 module, otherwise only released via the optional RS422-RS232 converter, article number 6AV6 671-8XE00-0AX0.

² PROFINET IO must be disabled.



SIMATIC HMI TP700 Comfort, Comfort Panel, touch operation, 7" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable from WinCC Comfort V11

General information	
Product type designation	TP700 Comfort
Display	
Design of display	TFT
Screen diagonal	7 in
Display width	152.4 mm
Display height	91.4 mm
Number of colors	16 777 216
Resolution (pixels)	
• Horizontal image resolution	800 pixel
• Vertical image resolution	480 pixel
Backlighting	
• MTBF backlighting (at 25 °C)	80 000 h
• Backlight dimmable	Yes; 0-100 %
Control elements	
Keyboard fonts	
• Function keys	
— Number of function keys	0
— Number of function keys with LEDs	0
• Keys with LED	No
• System keys	No
• Numeric keyboard	Yes; Onscreen keyboard
• alphanumeric keyboard	Yes; Onscreen keyboard
Touch operation	
• Design as touch screen	Yes; Analog-resistive
Expansions for operator control of the process	
• DP direct LEDs (LEDs as S7 output I/O)	
— F1...Fx	0
• Direct keys (keys as S7 input I/O)	
— F1...Fx	0
• Direct keys (touch buttons as S7 input I/O)	32
Installation type/mounting	
Mounting position	vertical
Wall mounting/direct mounting	No
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
maximum permissible angle of inclination without external ventilation	35°
Supply voltage	
Type of supply voltage	DC

Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Input current	
Current consumption (rated value)	0.5 A
Starting current inrush I ² t	0.5 A ² ·s
Power	
Active power input, typ.	12 W
Processor	
Processor type	X86
Memory	
Flash	Yes
RAM	Yes
Memory available for user data	12 Mbyte
Type of output	
Info LED	No
Power LED	No
Error LED	No
Acoustics	
• Buzzer	No
• Speaker	Yes
Time of day	
Clock	
• Hardware clock (real-time)	Yes
• Software clock	Yes
• retentive	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes
Interfaces	
Number of industrial Ethernet interfaces	1; 2 ports (switch)
Number of RS 485 interfaces	1; RS 422 / 485 combined
Number of RS 422 interfaces	0; together with RS 485
Number of RS 232 interfaces	0
Number of USB interfaces	2; USB 2.0
• USB Mini B	1; 5-pole
Number of 20 mA interfaces (TTY)	0
Number of parallel interfaces	0
Number of other interfaces	0
Number of SD card slots	2
With software interfaces	No
Industrial Ethernet	
• Industrial Ethernet status LED	2
• Number of ports of the integrated switch	2
Protocols	
PROFINET	Yes
Supports protocol for PROFINET IO	Yes
IRT	Yes; As of WinCC V12
PROFIBUS	Yes
EtherNet/IP	Yes
MPI	Yes
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
WEB characteristics	
• HTTP	Yes
• HTTPS	Yes
• HTML	Yes
• XML	Yes

• CSS	Yes
• Active X	Yes
• JavaScript	Yes
• Java VM	No
Redundancy mode	
Media redundancy	
— MRP	Yes; As of WinCC V12
Further protocols	
• CAN	No
• MODBUS	Yes
Interrupts/diagnostics/status information	
Diagnoses	
• Diagnostic information readable	Yes; S7 controller
EMC	
Emission of radio interference acc. to EN 55 011	
• Limit class A, for use in industrial areas	Yes
• Limit class B, for use in residential areas	No
Degree and class of protection	
IP (at the front)	IP65
IP (rear)	IP20
NEMA (front)	
• Enclosure Type 4 at the front	Yes
• Enclosure Type 4x at the front	Yes
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
Use in hazardous areas	
• ATEX Zone 2	Yes
• ATEX Zone 22	Yes
• IECEx Zone 2	Yes
• IECEx Zone 22	Yes
• cULus Class I Zone 1	No
• cULus Class I Zone 2, Division 2	Yes
• FM Class I Division 2	Yes
Marine approval	
• Germanischer Lloyd (GL)	Yes
• American Bureau of Shipping (ABS)	Yes
• Bureau Veritas (BV)	Yes
• Det Norske Veritas (DNV)	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes
• Polski Rejestr Statkow (PRS)	No
Ambient conditions	
Suited for indoor use	Yes
Suited for outdoor use	No
Ambient temperature during operation	
Operation (vertical installation)	
— For vertical installation, min.	0 °C
— For vertical installation, max.	50 °C; (55 °C, see entry ID: 64847814)
Operation (max. tilt angle)	
— At maximum tilt angle, min.	0 °C
— At maximum tilt angle, max.	40 °C
Operation (vertical installation, portrait format)	
— For vertical installation, min.	0 °C
— For vertical installation, max.	40 °C
Operation (max. tilt angle, portrait format)	
— At maximum tilt angle, min.	0 °C
— At maximum tilt angle, max.	35 °C

Ambient temperature during storage/transportation	
• min.	-20 °C
• max.	60 °C
Relative humidity	
• Operation, max.	90 %; no condensation
Operating systems	
proprietary	No
pre-installed operating system	
• Windows CE	Yes
configuration / header	
Message indicator	Yes
Alarm system (incl. buffer and acknowledgment)	Yes
Process value display (output)	Yes
Process value default (input) possible	Yes
Recipe management	Yes
Configuration software	
• STEP 7 Basic (TIA Portal)	No
• STEP 7 Professional (TIA Portal)	No
• WinCC flexible Compact	No
• WinCC flexible Standard	No
• WinCC flexible Advanced	No
• WinCC Basic (TIA Portal)	No
• WinCC Comfort (TIA Portal)	Yes; from V11
• WinCC Advanced (TIA Portal)	Yes; from V11
• WinCC Professional (TIA Portal)	Yes; from V11
Languages	
Online languages	
• Number of online/runtime languages	32
Project languages	
• Languages per project	32
Functionality under WinCC (TIA Portal)	
Libraries	Yes
Applications/options	
• Web browser	Yes
• Pocket Word	Yes
• Pocket Excel	Yes
• PDF Viewer	Yes
• Media Player	Yes
• SIMATIC WinCC Sm@rtServer	Yes
• SIMATIC WinCC Audit	Yes
Number of Visual Basic Scripts	Yes
Task planner	
• time-controlled	Yes
• task-controlled	Yes
Message system	
• Number of alarm classes	32
• Bit messages	Yes
— Number of bit messages	4 000
• Analog messages	Yes
— Number of analog messages	200
• S7 alarm number procedure	Yes
• System messages HMI	Yes
• System event, more (SIMATIC S7, SINUMERIK, SIMOTION, ...)	Yes
• Number of characters per message	80
• Number of process values per message	8
• Acknowledgment groups	Yes
• Message indicator	Yes
Recipe management	
• Number of recipes	300
• Data records per recipe	500

• Entries per data record	1 000
• Size of internal recipe memory	2 Mbyte
• Recipe memory expandable	Yes
Variables	
• Number of variables per device	2 048
• Number of variables per screen	400
• Limit values	Yes
• Multiplexing	Yes
• Structures	Yes
• Arrays	Yes
Images	
• Number of configurable images	500
• Permanent window/default	Yes
• Global image	Yes
• Pop-up images	Yes
• Slide-in images	Yes
• Image selection by PLC	Yes
• Image number in the PLC	Yes
Image objects	
• Number of objects per image	400
• Text fields	Yes
• I/O fields	Yes
• Graphic I/O fields (graphics list)	Yes
• Symbolic I/O fields (text list)	Yes
• Date/time fields	Yes
• Switches	Yes
• Buttons	Yes
• Graphic display	Yes
• Icons	Yes
• Geometric objects	Yes
Complex image objects	
• Number of complex objects per screen	20
• Alarm view	Yes
• Trend view	Yes
• User view	Yes
• Status/control	Yes
• Sm@rtClient view	Yes
• Recipe view	Yes
• f(x) trend view	Yes
• System diagnostics view	Yes
• Media Player	Yes
• HTML browser	Yes
• PDF display	Yes
• IP camera display	Yes
• Bar graphs	Yes
• Sliders	Yes
• Pointer instruments	Yes
• Analog/digital clock	Yes
Lists	
• Number of text lists per project	500
• Number of entries per text list	500
• Number of graphics lists per project	500
• Number of entries per graphics list	500
Archiving	
• Number of archives per device	50
• Number of entries per archive	20 000
• Message archive	Yes
• Process value archive	Yes
• Archiving methods	
— Sequential archive	Yes
— Short-term archive	Yes

• Memory location — Memory card — USB memory — Ethernet • Data storage format — CSV — TXT — RDB	Yes Yes Yes Yes Yes Yes
Security	
• Number of user groups • Number of user rights • Number of users • Password export/import • SIMATIC Logon	50 32 50 Yes Yes
Logging through printer	
• Alarms • Report (shift log) • Hardcopy • Electronic print to file	Yes Yes Yes Yes; PDF, HTML
Character sets	
• Keyboard fonts — US English	Yes
Transfer (upload/download)	
• MPI/PROFIBUS DP • USB • Ethernet • using external storage medium	Yes Yes Yes Yes
Process coupling	
• S7-1200 • S7-1500 • S7-200 • S7-300/400 • LOGO! • WinAC • SINUMERIK • SIMOTION • Allen Bradley (EtherNet/IP) • Allen Bradley (DF1) • Mitsubishi (MC TCP/IP) • Mitsubishi (FX) • OMRON (FINS TCP) • OMRON (LINK/Multilink) • Modicon (Modbus TCP/IP) • Modicon (Modbus) • OPC UA Client • OPC UA Server	Yes Yes Yes Yes Yes Yes Yes; with SINUMERIK option package Yes Yes Yes Yes Yes No Yes Yes Yes Yes Yes Yes
Service tools/configuration aids	
• Backup/Restore manually • Backup/Restore automatically • Simulation • Device switchover	Yes Yes Yes Yes
Peripherals/Options	
Printer	Yes
SIMATIC HMI MM memory card: Multi Media Card	Yes; Up to 128 MB
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB
SIMATIC HMI CF memory card Compact Flash Card	No
USB memory	Yes
SIMATIC IPC USB Flashdrive (USB stick)	Yes; Up to 16 GB
SIMATIC HMI USB stick	Yes; Up to 8 GB
Network camera	Yes

Mechanics/material	
Enclosure material (front)	
• Plastic	No
• Aluminum	Yes
• Stainless steel	No
Dimensions	
Width of the housing front	214 mm
Height of housing front	158 mm
Mounting cutout, width	198 mm
Mounting cutout, height	142 mm
Overall depth	63 mm
Weights	
Weight (without packaging)	1.4 kg
Weight (with packaging)	1.6 kg
last modified:	4/10/2024 