

### Overview



Comfort Panel family, KP, TP, KTP

### SIMATIC HMI Comfort Panels - Standard devices

- Excellent HMI functionality for demanding applications
- Widescreen TFT displays with 4", 7", 9", 12", 15", 19" and 22" diagonals (all 16 million colors) with up to 40% more visualization area as compared to the predecessor devices
- Integrated high-end functionality with archives, scripts, PDF/Word/Excel viewer, Internet Explorer, Media Player and Web Server
- Dimmable displays from 0 to 100% via PROFIenergy, via the HMI project or via a controller
- Modern industrial design, cast aluminum fronts for 7" upwards
- Upright installation for all touch devices
- Data security in the event of a power failure for the device and for the SIMATIC HMI memory card
- Innovative service and commissioning concept
- Maximum performance with short screen refresh times
- Suitable for extremely harsh industrial environments thanks to extended approvals such as ATEX 2/22 and marine approvals
- All versions can be used as an OPC UA client or as a server
- Key-operated devices with LED in every function key and new text input mechanism, similar to the keypads of mobile phones
- All keys have a service life of 2 million operations
- Configuring with the WinCC engineering software of the TIA Portal engineering framework

#### Note:

A 7" and a 15" Comfort Outdoor version are available. These devices have been specially designed for outdoor applications in difficult environments. Best display quality, even under sunlight, UV-resistant fronts and much more.

For further information, please go to:

<http://www.siemens.com/comfort-panels>

### Technical specifications

Article number	<b>6AV2124-2DC01-0AX0</b> SIMATIC HMI KTP400 Comfort
<b>General information</b>	
Product type designation	KTP400 Comfort
<b>Display</b>	
Design of display	TFT
Screen diagonal	4.3 in
Display width	95 mm
Display height	53.8 mm
Number of colors	16 777 216
<b>Resolution (pixels)</b>	
• Horizontal image resolution	480 Pixel
• Vertical image resolution	272 Pixel
<b>Backlighting</b>	
• MTBF backlighting (at 25 °C)	80 000 h
• Backlight dimmable	Yes; 0-100 %
<b>Control elements</b>	
<b>Keyboard fonts</b>	
• Function keys	
- Number of function keys	4
- Number of function keys with LEDs	4
• Keys with LED	Yes
• System keys	No
• Numeric keyboard	Yes; Onscreen keyboard
• alphanumeric keyboard	Yes; Onscreen keyboard
<b>Installation type/mounting</b>	
Mounting position	vertical
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
maximum permissible angle of inclination without external ventilation	35°
<b>Supply voltage</b>	
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
<b>Memory</b>	
Flash	Yes
RAM	Yes
Memory available for user data	4 Mbyte
<b>Type of output</b>	
Info LED	No
Power LED	No
Error LED	No
Acoustics	
• Buzzer	Yes
• Speaker	No
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time)	Yes
• Software clock	Yes
• retentive	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes

## Operator panels

### Advanced HMI – Panel-based Comfort Panels

#### Comfort Panels Standard devices

#### Technical specifications (continued)

Article number	6AV2124-2DC01-0AX0 SIMATIC HMI KTP400 Comfort
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	1
Number of RS 485 interfaces	1; RS 422 / 485 combined
Number of RS 422 interfaces	1
Number of RS 232 interfaces	0
Number of USB interfaces	1; 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
<b>Industrial Ethernet</b>	
• Industrial Ethernet status LED	2
• Number of ports of the integrated switch	1; No switch integrated
<b>Protocols</b>	
PROFINET	Yes
Supports protocol for PROFINET IO IRT	Yes
PROFIBUS	No
MPI	Yes
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
- MRP	No
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
<b>Use in hazardous areas</b>	
• 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
<b>Marine approval</b>	
• 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
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• Operation (vertical installation)	
- For vertical installation, min.	0 °C
- For vertical installation, max.	50 °C
<b>Relative humidity</b>	
• Operation, max.	90 %; no condensation
<b>Operating systems</b>	
proprietary	No
<b>pre-installed operating system</b>	
• Windows CE	Yes

Article number	6AV2124-2DC01-0AX0 SIMATIC HMI KTP400 Comfort
<b>Configuration</b>	
Message indicator	Yes
Alarm system (incl. buffer and acknowledgment)	Yes
Process value display (output)	Yes
Process value default (input) possible	Yes
Recipe management	Yes
<b>Configuration software</b>	
• 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
<b>Languages</b>	
<b>Online languages</b>	
• Number of online/runtime languages	32
<b>Project languages</b>	
• Languages per project	32
<b>Functionality under WinCC (TIA Portal)</b>	
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
Help system	
• Number of characters per info text	70
<b>Message system</b>	
• Number of alarm classes	32
• Bit messages	
- Number of bit messages	2 000
• Analog messages	
- Number of analog messages	50
• S7 alarm number procedure	Yes
• System messages HMI	Yes
• System messages, other (SIMATIC S7, Sinumerik, Simotion, etc.)	Yes
• Number of characters per message	80
• Number of process values per message	8
• Acknowledgment groups	Yes
• Message indicator	Yes
• Message buffer	
- Number of entries	256
- Circulating buffer	Yes
- retentive	Yes
- maintenance-free	Yes

### Technical specifications (continued)

Article number	6AV2124-2DC01-0AX0 SIMATIC HMI KTP400 Comfort
<b>Recipe management</b>	
• Number of recipes	100
• Data records per recipe	200
• Entries per data record	200
• Size of internal recipe memory	512 kbyte
• Recipe memory expandable	Yes
<b>Variables</b>	
• Number of variables per device	1 024
• Number of variables per screen	50
• Limit values	Yes
• Multiplexing	Yes
• Structures	Yes
• Arrays	Yes
<b>Images</b>	
• 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
<b>Archiving</b>	
• Number of archives per device	10
• Number of entries per archive	10 000
• Message archive	Yes
• Process value archive	Yes
• Archiving methods	
- Sequential archive	Yes
- Short-term archive	Yes
• Memory location	
- Memory card	Yes
- USB memory	Yes
- Ethernet	Yes
• Data storage format	
- CSV	Yes
- TXT	Yes
- RDB	Yes
<b>Security</b>	
• Number of user groups	50
• Number of user rights	32
• Number of users	50
• Password export/import	Yes
• SIMATIC Logon	Yes
<b>Logging through printer</b>	
• Alarms	Yes
• Report (shift log)	Yes
• Hardcopy	Yes
• Electronic print to file	Yes; PDF, HTML
<b>Character sets</b>	
• Keyboard fonts	
- US English	Yes
<b>Transfer (upload/download)</b>	
• MPI/PROFIBUS DP	Yes
• USB	Yes
• Ethernet	Yes
• using external storage medium	Yes

Article number	6AV2124-2DC01-0AX0 SIMATIC HMI KTP400 Comfort
<b>Process coupling</b>	
• S7-1200	Yes
• S7-1500	Yes
• S7-200	Yes
• S7-300/400	Yes
• LOGO!	Yes
• WinAC	Yes
• SINUMERIK	Yes; with SINUMERIK option package
• SIMOTION	Yes
• Allen Bradley (EtherNet/IP)	Yes
• Allen Bradley (DF1)	Yes
• Mitsubishi (MC TCP/IP)	Yes
• Mitsubishi (FX)	Yes
• OMRON (FINS TCP)	No
• OMRON (LINK/Multilink)	Yes
• Modicon (Modbus TCP/IP)	Yes
• Modicon (Modbus)	Yes
• OPC UA Client	Yes
• OPC UA Server	Yes
<b>Service tools/configuration aids</b>	
• Backup/Restore manually	Yes
• Backup/Restore automatically	Yes
• Simulation	Yes
• Device switchover	Yes
<b>Peripherals/Options</b>	
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
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	Yes
• Aluminum	No
• Stainless steel	No
<b>Dimensions</b>	
Width of the housing front	140 mm
Height of housing front	116 mm
Mounting cutout, width	123 mm
Mounting cutout, height	99 mm
Overall depth	49 mm
<b>Weights</b>	
Weight without packaging	0.6 kg
Weight incl. packaging	0.7 kg

## Operator panels

### Advanced HMI – Panel-based Comfort Panels

#### Comfort Panels Standard devices

#### Technical specifications (continued)

Article number	6AV2124-1DC01-0AX0 SIMATIC HMI KP400 Comfort	6AV2124-1GC01-0AX0 SIMATIC HMI KP700 Comfort	6AV2124-1JC01-0AX0 SIMATIC HMI KP900 Comfort	6AV2124-1MC01-0AX0 SIMATIC HMI KP1200 Comfort	6AV2124-1QC02-0AX1 SIMATIC HMI KP1500 Comfort
<b>General information</b>					
Product type designation	KP400 Comfort	KP700 Comfort	KP900 Comfort	KP1200 Comfort	KP1500 Comfort
<b>Display</b>					
Design of display	TFT	TFT	TFT	TFT	TFT
Screen diagonal	4.3 in	7 in	9 in	12.1 in	15.4 in
Display width	95 mm	152.4 mm	195 mm	261.1 mm	331.2 mm
Display height	53.8 mm	91.4 mm	117 mm	163.2 mm	207 mm
Number of colors	16 777 216	16 777 216	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>					
• Horizontal image resolution	480 Pixel	800 Pixel	800 Pixel	1 280 Pixel	1 280 Pixel
• Vertical image resolution	272 Pixel	480 Pixel	480 Pixel	800 Pixel	800 Pixel
<b>Backlighting</b>					
• MTBF backlighting (at 25 °C)	80 000 h	80 000 h	80 000 h	80 000 h	80 000 h
• Backlight dimmable	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %	Yes; LED, dimmable
<b>Control elements</b>					
<b>Keyboard fonts</b>					
• Function keys					
- Number of function keys	8	24	26	34	36
<b>Touch operation</b>					
• Design as touch screen	No	No	No	No	No
<b>Installation type/mounting</b>					
Mounting in portrait format possible	No	No	No	No	No
<b>Supply voltage</b>					
Type of supply voltage	DC	DC	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V	24 V	24 V
permissible range, lower limit (DC)	19.2 V	19.2 V	19.2 V	19.2 V	19.2 V
permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	28.8 V	28.8 V
<b>Memory</b>					
Flash	Yes	Yes	Yes	Yes	Yes
RAM	Yes	Yes	Yes	Yes	Yes
Memory available for user data	4 Mbyte	12 Mbyte	12 Mbyte	12 Mbyte	24 Mbyte
<b>Type of output</b>					
<b>Acoustics</b>					
• Speaker	No	Yes	Yes	Yes	Yes
<b>Time of day</b>					
<b>Clock</b>					
• Hardware clock (real-time)	Yes	Yes	Yes	Yes	Yes
• Software clock	Yes	Yes	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks				
• synchronizable	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>					
Number of industrial Ethernet interfaces	1	1; 2 ports (switch)	1; 2 ports (switch)	1; 2 ports (switch)	2; 2 ports (switch) + independent port
Number of RS 485 interfaces	1; RS 422 / 485 combined				
Number of RS 422 interfaces	1	1	1	1	0
Number of RS 232 interfaces	0	0	0	0	0
Number of USB interfaces	1; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0
• USB Mini B	1; 5-pole	1; 5-pole	1; 5-pole	1; 5-pole	
Number of 20 mA interfaces (TTY)	0	0	0	0	0
Number of parallel interfaces	0	0	0	0	0
Number of other interfaces	0	0	0	0	0
Number of SD card slots	2	2	2	2	2
With software interfaces	No	No	No	No	No
<b>Industrial Ethernet</b>					
• Industrial Ethernet status LED	2	2	2	2	3
• Number of ports of the integrated switch	1; No switch integrated	2	2	2	2
<b>Protocols</b>					
PROFINET	Yes	Yes	Yes	Yes	Yes
Supports protocol for PROFINET IO	Yes	Yes	Yes	Yes	Yes
IRT	No	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes
PROFIBUS	Yes	Yes	Yes	Yes	Yes
MPI	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>					
<b>Media redundancy</b>					
- MRP	No	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes

### Technical specifications (continued)

Article number	6AV2124-1DC01-0AX0 SIMATIC HMI KP400 Comfort	6AV2124-1GC01-0AX0 SIMATIC HMI KP700 Comfort	6AV2124-1JC01-0AX0 SIMATIC HMI KP900 Comfort	6AV2124-1MC01-0AX0 SIMATIC HMI KP1200 Comfort	6AV2124-1QC02-0AX1 SIMATIC HMI KP1500 Comfort
<b>Degree and class of protection</b>					
IP (at the front)	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20	IP20
NEMA (front)					
• Enclosure Type 4 at the front	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>					
CE mark	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)					Yes
<b>Use in hazardous areas</b>					
• ATEX Zone 2	Yes	Yes	Yes	Yes	No
• ATEX Zone 22	Yes	Yes	Yes	Yes	No
• IECEx Zone 2	Yes	Yes	Yes	Yes	No
• IECEx Zone 22	Yes	Yes	Yes	Yes	No
• cULus Class I Zone 1	No	No	No	No	No
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes	Yes	Yes; For inscription on device rating plate
• cULus Class II Division 2					No; Available soon
• FM Class I Division 2	Yes	Yes	Yes	Yes	Yes; For inscription on device rating plate
• FM Class II Division 2					No; Available soon
<b>Marine approval</b>					
• Germanischer Lloyd (GL)	Yes	Yes	Yes	Yes; As of product version: 10	No
• American Bureau of Shipping (ABS)	Yes	Yes	Yes	Yes; As of product version: 10	No
• Bureau Veritas (BV)	Yes	Yes	Yes	Yes; As of product version: 10	No
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes; As of product version: 10	No
• Korean Register of Shipping (KRS)					No
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes; As of product version: 10	No
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes	Yes; As of product version: 10	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No
• Chinese Classification Society (CCS)					No
<b>Ambient conditions</b>					
Suited for indoor use					Yes
Suited for outdoor use					No
<b>Ambient temperature during operation</b>					
• Operation (vertical installation)					
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C; (55 °C, see entry ID: 64847814)	50 °C; (55 °C, see entry ID: 64847814)	50 °C; (55 °C, see entry ID: 64847814)	50 °C; (55 °C, see entry ID: 64847814)
<b>Relative humidity</b>					
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Operating systems</b>					
proprietary	No	No	No	No	No
<b>pre-installed operating system</b>					
• Windows CE	Yes	Yes	Yes	Yes	Yes; Windows Embedded Compact 2013
<b>Configuration</b>					
<b>Configuration software</b>					
• WinCC Comfort (TIA Portal)	Yes; from V11	Yes; from V11	Yes; from V11	Yes; from V11	Yes; V14 SP1 HSP and higher
<b>Languages</b>					
<b>Online languages</b>					
• Number of online/runtime languages	32	32	32	32	32

## Operator panels

### Advanced HMI – Panel-based Comfort Panels

#### Comfort Panels Standard devices

#### Technical specifications (continued)

Article number	6AV2124-1DC01-0AX0 SIMATIC HMI KP400 Comfort	6AV2124-1GC01-0AX0 SIMATIC HMI KP700 Comfort	6AV2124-1JC01-0AX0 SIMATIC HMI KP900 Comfort	6AV2124-1MC01-0AX0 SIMATIC HMI KP1200 Comfort	6AV2124-1QC02-0AX1 SIMATIC HMI KP1500 Comfort
<b>Functionality under WinCC (TIA Portal)</b>					
Libraries	Yes	Yes	Yes	Yes	Yes
Applications/options					
• Web browser	Yes	Yes	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes	Yes	Yes
Task planner					
• time-controlled	Yes	Yes	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes	Yes	Yes
Help system					
• Number of characters per info text	70	70	70	70	320
<b>Message system</b>					
• Bit messages					
- Number of bit messages	2 000	4 000	4 000	4 000	6 000
• Analog messages					
- Number of analog messages	50	200	200	200	200
• Message buffer					
- Number of entries	256	1 024	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes
- maintenance-free	Yes	Yes	Yes	Yes	Yes
<b>Recipe management</b>					
• Number of recipes	100	300	300	300	500
• Size of internal recipe memory	512 kbyte	2 Mbyte	2 Mbyte	2 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes	Yes
<b>Variables</b>					
• Number of variables per device	1 024	2 048	2 048	2 048	4 096
• Number of variables per screen	50	400	400	400	400
<b>Images</b>					
• Number of configurable images	500	500	500	500	750
<b>Archiving</b>					
• Number of archives per device	10	50	50	50	50
<b>Security</b>					
• Number of user groups	50	50	50	50	50
• Number of users	50	50	50	50	50
• SIMATIC Logon	Yes	Yes	Yes	Yes	Yes
<b>Logging through printer</b>					
• Alarms	Yes	Yes	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>					
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes	Yes
• USB	Yes	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes	Yes
• using external storage medium	Yes	Yes	Yes	Yes	Yes

### Technical specifications (continued)

Article number	6AV2124-1DC01-0AX0 SIMATIC HMI KP400 Comfort	6AV2124-1GC01-0AX0 SIMATIC HMI KP700 Comfort	6AV2124-1JC01-0AX0 SIMATIC HMI KP900 Comfort	6AV2124-1MC01-0AX0 SIMATIC HMI KP1200 Comfort	6AV2124-1QC02-0AX1 SIMATIC HMI KP1500 Comfort	
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	
• S7-1500	Yes	Yes	Yes	Yes	Yes	
• S7-200	Yes	Yes	Yes	Yes	Yes	
• S7-300/400	Yes	Yes	Yes	Yes	Yes	
• LOGO!	Yes	Yes	Yes	Yes	Yes	
• WinAC	Yes	Yes	Yes	Yes	Yes	
• SINUMERIK	Yes; with SINUMERIK option package	Yes; with SINUMERIK option package	Yes; with SINUMERIK option package	Yes; with SINUMERIK option package	Yes; With SINUMERIK option package as from WinCC V15 or higher	
• SIMOTION	Yes	Yes	Yes	Yes	Yes	
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	Yes	Yes	
• Allen Bradley (DF1)	Yes	Yes	Yes	Yes	Yes	
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	Yes	Yes	
• Mitsubishi (FX)	Yes	Yes	Yes	Yes	Yes	
• OMRON (FINS TCP)	No	No	No	No	No	
• OMRON (LINK/Multilink)	Yes	Yes	Yes	Yes	Yes	
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	Yes	Yes	
• Modicon (Modbus)	Yes	Yes	Yes	Yes	Yes	
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	
<b>Peripherals/Options</b>						
Printer	Yes	Yes	Yes	Yes	Yes	
SIMATIC HMI MM memory card: Multi Media Card	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB	
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB	
USB memory	Yes	Yes	Yes	Yes	Yes	
Network camera	Yes	Yes	Yes	Yes	Yes	
<b>Mechanics/material</b>						
Enclosure material (front)						
• Plastic	Yes	No	No	No	No	
• Aluminum	No	Yes	Yes	Yes	Yes	
• Stainless steel	No	No	No	No	No	
<b>Dimensions</b>						
Width of the housing front	152 mm	308 mm	362 mm	454 mm	483 mm	
Height of housing front	188 mm	204 mm	230 mm	289 mm	310 mm	
Mounting cutout, width	135 mm	281 mm	338 mm	434 mm	450 mm	
Mounting cutout, height	171 mm	177 mm	206 mm	269 mm	291 mm	
Overall depth	49 mm	63 mm	63 mm	65 mm	75 mm	
<b>Weights</b>						
Weight without packaging	0.8 kg	2.2 kg	2.7 kg	4.4 kg	4.7 kg	
Weight incl. packaging	0.9 kg	2.8 kg	3.4 kg	5.7 kg		
Article number	6AV2124-0GC01-0AX0 SIMATIC HMI TP700 Comfort	6AV2124-0JC01-0AX0 SIMATIC HMI TP900 Comfort	6AV2124-0MC01-0AX0 SIMATIC HMI TP1200 Comfort	6AV2124-0QC02-0AX1 SIMATIC HMI TP1500 Comfort	6AV2124-0UC02-0AX1 SIMATIC HMI TP1900 Comfort	6AV2124-0XC02-0AX1 SIMATIC HMI TP2200 Comfort
<b>General information</b>						
Product type designation	TP700 Comfort	TP900 Comfort	TP1200 Comfort	TP1500 Comfort	TP1900 Comfort	TP2200 Comfort
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	9 in	12.1 in	15.4 in	18.5 in	21.5 in
Display width	152.4 mm	195 mm	261.1 mm	331.2 mm	409.8 mm	475.2 mm
Display height	91.4 mm	117 mm	163.2 mm	207 mm	230.4 mm	267.3 mm
Number of colors	16 777 216	16 777 216	16 777 216	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>						
• Horizontal image resolution	800 Pixel	800 Pixel	1 280 Pixel	1 280 Pixel	1 366 Pixel	1 920 Pixel
• Vertical image resolution	480 Pixel	480 Pixel	800 Pixel	800 Pixel	768 Pixel	1 080 Pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	80 000 h	80 000 h	80 000 h	80 000 h	50 000 h	30 000 h
• Backlight dimmable	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %	Yes; 0-100 %
<b>Control elements</b>						
<b>Keyboard fonts</b>						
• Function keys						
- Number of function keys	0	0	0	0	0	0



## Operator panels

### Advanced HMI – Panel-based Comfort Panels

#### Comfort Panels Standard devices

#### Technical specifications (continued)

Article number	6AV2124-0GC01-0AX0 SIMATIC HMI TP700 Comfort	6AV2124-0JC01-0AX0 SIMATIC HMI TP900 Comfort	6AV2124-0MC01-0AX0 SIMATIC HMI TP1200 Comfort	6AV2124-0QC02-0AX1 SIMATIC HMI TP1500 Comfort	6AV2124-0UC02-0AX1 SIMATIC HMI TP1900 Comfort	6AV2124-0XC02-0AX1 SIMATIC HMI TP2200 Comfort
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting position	vertical	vertical	vertical	vertical	vertical	vertical
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes	Yes
Mounting in landscape format possible	Yes	Yes	Yes	Yes	Yes	Yes
maximum permissible angle of inclination without external ventilation	35°	35°	35°	35°	35°	35°
<b>Supply voltage</b>						
Type of supply voltage	DC	DC	DC	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
permissible range, lower limit (DC)	19.2 V	19.2 V	19.2 V	19.2 V	19.2 V	19.2 V
permissible range, upper limit (DC)	28.8 V	28.8 V	28.8 V	28.8 V	28.8 V	28.8 V
<b>Memory</b>						
Flash	Yes	Yes	Yes	Yes	Yes	Yes
RAM	Yes	Yes	Yes	Yes	Yes	Yes
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>						
Acoustics						
• Buzzer	No	No	No	No	No	No
<b>Time of day</b>						
<b>Clock</b>						
• Hardware clock (real-time)	Yes	Yes	Yes	Yes	Yes	Yes
• Software clock	Yes	Yes	Yes	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	1; 2 ports (switch)	1; 2 ports (switch)	1; 2 ports (switch)	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port
Number of RS 485 interfaces	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined
Number of RS 422 interfaces	0; together with RS 485	0; together with RS 485	0; together with RS 485	0; together with RS 485	0; together with RS 485	0; together with RS 485
Number of RS 232 interfaces	0	0	0	0	0	0
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0
• USB Mini B	1; 5-pole	1; 5-pole	1; 5-pole			
Number of 20 mA interfaces (TTY)	0	0	0	0	0	0
Number of parallel interfaces	0	0	0	0	0	0
Number of other interfaces	0	0	0	0	0	0
Number of SD card slots	2	2	2	2	2	2
With software interfaces	No	No	No	No	No	No
<b>Industrial Ethernet</b>						
• Industrial Ethernet status LED	2	2	2	3	3	3
• Number of ports of the integrated switch	2	2	2	2	2	2



### Technical specifications (continued)

Article number	6AV2124-0GC01-0AX0 SIMATIC HMI TP700 Comfort	6AV2124-0JC01-0AX0 SIMATIC HMI TP900 Comfort	6AV2124-0MC01-0AX0 SIMATIC HMI TP1200 Comfort	6AV2124-0QC02-0AX1 SIMATIC HMI TP1500 Comfort	6AV2124-0UC02-0AX1 SIMATIC HMI TP1900 Comfort	6AV2124-0XC02-0AX1 SIMATIC HMI TP2200 Comfort
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
Supports protocol for PROFINET IO IRT	Yes	Yes	Yes	Yes	Yes	Yes
PROFIBUS	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes	Yes	Yes
MPI	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)				Yes	Yes	Yes
<b>Use in hazardous areas</b>						
• ATEX Zone 2	Yes	Yes	Yes	No	No	No
• ATEX Zone 22	Yes	Yes	Yes	No	No	No
• IECEx Zone 2	Yes	Yes	Yes	No	No	No
• IECEx Zone 22	Yes	Yes	Yes	No	No	No
• cULus Class I Zone 1	No	No	No	No	No	No
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• cULus Class II Division 2				No; Available soon	No; Available soon	No; Available soon
• FM Class I Division 2	Yes	Yes	Yes	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• FM Class II Division 2				No; Available soon	No; Available soon	No; Available soon
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	Yes	Yes	Yes; As of product version: 10	No	No	No
• American Bureau of Shipping (ABS)	Yes	Yes	Yes; As of product version: 10	No	No	No
• Bureau Veritas (BV)	Yes	Yes	Yes; As of product version: 10	No	No	No
• Det Norske Veritas (DNV)	Yes	Yes	Yes; As of product version: 10	No	No	No
• Korean Register of Shipping (KRS)				No	No	No
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes; As of product version: 10	No	No	No
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes; As of product version: 10	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)				No	No	No

## Operator panels

### Advanced HMI – Panel-based Comfort Panels

#### Comfort Panels Standard devices

#### Technical specifications (continued)

Article number	6AV2124-0GC01-0AX0 SIMATIC HMI TP700 Comfort	6AV2124-0JC01-0AX0 SIMATIC HMI TP900 Comfort	6AV2124-0MC01-0AX0 SIMATIC HMI TP1200 Comfort	6AV2124-0QC02-0AX1 SIMATIC HMI TP1500 Comfort	6AV2124-0UC02-0AX1 SIMATIC HMI TP1900 Comfort	6AV2124-0XC02-0AX1 SIMATIC HMI TP2200 Comfort
<b>Ambient conditions</b>						
Suited for indoor use				Yes	Yes	Yes
Suited for outdoor use				No	No	No
<b>Ambient temperature during operation</b>						
• Operation (vertical installation)						
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C; (55 °C, see entry ID: 64847814)	50 °C; (55 °C, see entry ID: 64847814)	50 °C; (55 °C, see entry ID: 64847814)	50 °C; (55 °C, see entry ID: 64847814)	45 °C	45 °C
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Comfort (TIA Portal)	Yes; from V11	Yes; from V11	Yes; from V11	Yes; V14 SP1 HSP and higher	Yes; V14 SP1 HSP and higher	Yes; V14 SP1 HSP and higher
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Project languages</b>						
• Languages per project	32	32	32	32	32	32
<b>Functionality under WinCC (TIA Portal)</b>						
Libraries	Yes	Yes	Yes	Yes	Yes	Yes
Applications/options						
• Web browser	Yes	Yes	Yes	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes	Yes	Yes	Yes
Task planner						
• time-controlled	Yes	Yes	Yes	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes	Yes	Yes	Yes
Help system						
• Number of characters per info text	70	70	70	320	320	320
<b>Message system</b>						
• Bit messages						
- Number of bit messages	4 000	4 000	4 000	6 000	6 000	6 000
• Analog messages						
- Number of analog messages	200	200	200	200	200	200
• Message buffer						
- Number of entries	1 024	1 024	1 024	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
- maintenance-free	Yes	Yes	Yes	Yes	Yes	Yes
<b>Recipe management</b>						
• Number of recipes	300	300	300	500	500	500
• Data records per recipe	500	500	500	1 000	1 000	1 000
• Entries per data record	1 000	1 000	1 000	2 000	2 000	2 000
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Variables</b>						
• Number of variables per device	2 048	2 048	2 048	4 096	4 096	4 096
• Number of variables per screen	400	400	400	400	400	400
• Limit values	Yes	Yes	Yes	Yes	Yes	Yes
• Multiplexing	Yes	Yes	Yes	Yes	Yes	Yes
• Structures	Yes	Yes	Yes	Yes	Yes	Yes
• Arrays	Yes	Yes	Yes	Yes	Yes	Yes
<b>Images</b>						
• Number of configurable images	500	500	500	750	750	750
<b>Archiving</b>						
• Number of archives per device	50	50	50	50	50	50

### Technical specifications (continued)

Article number	6AV2124-0GC01-0AX0 SIMATIC HMI TP700 Comfort	6AV2124-0JC01-0AX0 SIMATIC HMI TP900 Comfort	6AV2124-0MC01-0AX0 SIMATIC HMI TP1200 Comfort	6AV2124-0QC02-0AX1 SIMATIC HMI TP1500 Comfort	6AV2124-0UC02-0AX1 SIMATIC HMI TP1900 Comfort	6AV2124-0XC02-0AX1 SIMATIC HMI TP2200 Comfort
<b>Security</b>						
• Number of user groups	50	50	50	50	50	50
• Number of user rights	32	32	32	32	32	32
• Number of users	50	50	50	50	50	50
• Password export/import	Yes	Yes	Yes	Yes	Yes	Yes
• SIMATIC Logon	Yes	Yes	Yes	Yes	Yes	Yes
<b>Logging through printer</b>						
• Alarms	Yes	Yes	Yes	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>						
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB	Yes; Up to 128 MB
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes	Yes	Yes	Yes
Network camera	Yes	Yes	Yes	Yes	Yes	Yes
<b>Mechanics/material</b>						
Enclosure material (front)						
• Plastic	No	No	No	No	No	No
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
• Stainless steel	No	No	No	No	No	No
<b>Dimensions</b>						
Width of the housing front	214 mm	274 mm	330 mm	415 mm	483 mm	560 mm
Height of housing front	158 mm	190 mm	241 mm	310 mm	337 mm	380 mm
Mounting cutout, width	197 mm	251 mm	310 mm	396 mm	465 mm	542 mm
Mounting cutout, height	141 mm	166 mm	221 mm	291 mm	319 mm	362 mm
Overall depth	63 mm	63 mm	65 mm	75 mm	75 mm	75 mm
<b>Weights</b>						
Weight without packaging	1.4 kg	1.9 kg	2.8 kg	4.4 kg	5.6 kg	6.7 kg
Weight incl. packaging	1.6 kg	2.6 kg	3.5 kg			

## Operator panels

Advanced HMI – Panel-based  
Comfort Panels

### Comfort Panels Standard devices

Ordering data	Article No.
<i>SIMATIC HMI Comfort Panels</i>	
<i>Key and touch devices</i>	
<b>SIMATIC HMI KTP400 Comfort</b> Key/touch-screen operation; 4" widescreen display	<b>6AV2124-2DC01-0AX0</b>
<i>Touch devices</i>	
<b>SIMATIC HMI TP700 Comfort</b> Touch-screen operation; 7" widescreen display	<b>6AV2124-0GC01-0AX0</b>
<b>SIMATIC HMI TP900 Comfort</b> Touch-screen operation; 9" widescreen display	<b>6AV2124-0JC01-0AX0</b>
<b>SIMATIC HMI TP1200 Comfort</b> Touch-screen operation; 12" widescreen display	<b>6AV2124-0MC01-0AX0</b>
<b>SIMATIC HMI TP1500 Comfort</b> Touch-screen operation; 15" widescreen display	<b>6AV2124-0QC02-0AX1</b>
<b>SIMATIC HMI TP1900 Comfort</b> Touch-screen operation; 19" widescreen display	<b>6AV2124-0UC02-0AX1</b>
<b>SIMATIC HMI TP2200 Comfort</b> Touch-screen operation; 22" widescreen display	<b>6AV2124-0XC02-0AX1</b>
<i>Key devices</i>	
<b>SIMATIC HMI KP400 Comfort</b> Key operation; 4" widescreen display	<b>6AV2124-1DC01-0AX0</b>
<b>SIMATIC HMI KP700 Comfort</b> Key operation; 7" widescreen display	<b>6AV2124-1GC01-0AX0</b>
<b>SIMATIC HMI KP900 Comfort</b> Key operation; 9" widescreen display	<b>6AV2124-1JC01-0AX0</b>
<b>SIMATIC HMI KP1200 Comfort</b> Key operation; 12" widescreen display	<b>6AV2124-1MC01-0AX0</b>
<b>SIMATIC HMI KP1500 Comfort</b> Key operation; 15" widescreen display	<b>6AV2124-1QC02-0AX1</b>
<i>Accessories</i>	See "Operator Control and Monitoring Systems SIMATIC HMI" -> "Accessories"

### More information

More information is available on the Internet at:

<http://www.siemens.com/comfort-panels>

You can find an overview of approved printers, supply sources and printer settings on the Internet at:

<http://support.industry.siemens.com/cs/ww/en/view/11376409>

Certain SIMATIC HMI Comfort Panels allow the application of a customer name or logo, or selection of the membrane color in accordance with the customer's corporate design. This is also possible for small quantities.

More information is available at:

<http://www.siemens.com/express-hmi-tool>