

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels Standard devices

#### Overview



#### **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 more information, please go to:

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

#### Ordering data

#### Article No.

##### *SIMATIC HMI Comfort Panels*

##### *Key and touch devices*

**SIMATIC HMI KTP400 Comfort** 6AV2124-2DC01-0AX0

Key/touch operation;  
4" widescreen display

##### *Touch devices*

**SIMATIC HMI TP700 Comfort** 6AV2124-0GC01-0AX0

Touch operation;  
7" widescreen display

**SIMATIC HMI TP900 Comfort** 6AV2124-0JC01-0AX0

Touch operation;  
9" widescreen display

**SIMATIC HMI TP1200 Comfort** 6AV2124-0MC01-0AX0

Touch operation;  
12" widescreen display

**SIMATIC HMI TP1500 Comfort** 6AV2124-0QC02-0AX1

Touch operation;  
15" widescreen display

**SIMATIC HMI TP1900 Comfort** 6AV2124-0UC02-0AX1

Touch operation;  
19" widescreen display

**SIMATIC HMI TP2200 Comfort** 6AV2124-0XC02-0AX1

Touch operation;  
22" widescreen display

##### *Key devices*

**SIMATIC HMI KP400 Comfort** 6AV2124-1DC01-0AX0

Key operation;  
4" widescreen display

**SIMATIC HMI KP700 Comfort** 6AV2124-1GC01-0AX0

Key operation;  
7" widescreen display

**SIMATIC HMI KP900 Comfort** 6AV2124-1JC01-0AX0

Key operation;  
9" widescreen display

**SIMATIC HMI KP1200 Comfort** 6AV2124-1MC01-0AX0

Key operation;  
12" widescreen display

**SIMATIC HMI KP1500 Comfort** 6AV2124-1QC02-0AX1

Key operation;  
15" widescreen display

##### *Accessories*

See "SIMATIC HMI operator control and monitoring systems" -> "Accessories"

### 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
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
<b>Control elements</b>	
<b>Keyboard fonts</b>	
• Function keys	
- Number of function keys	4
<b>Touch operation</b>	
• Design as touch screen	Yes
<b>Installation type/mounting</b>	
Wall mounting/direct mounting	No
Mounting in portrait format possible	Yes
<b>Supply voltage</b>	
Rated value (DC)	24 V
<b>Memory</b>	
Memory available for user data	4 Mbyte
<b>Type of output</b>	
Acoustics	
• Speaker	No
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time)	Yes
• retentive	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	1
Number of RS 485 interfaces	1; RS 422 / 485 combined
Number of USB interfaces	1; USB 2.0
• USB Mini B	1; 5-pole
Number of SD card slots	2
<b>Industrial Ethernet</b>	
• Number of ports of the integrated switch	1; No switch integrated

Article number	<b>6AV2124-2DC01-0AX0</b> SIMATIC HMI KTP400 Comfort
<b>Protocols</b>	
PROFINET	Yes
IRT	No
PROFIBUS	Yes
MPI	Yes
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
- MRP	No
<b>Degree and class of protection</b>	
NEMA (front)	
• Enclosure Type 4x at the front	Yes
<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 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>Configuration</b>	
<b>Configuration software</b>	
• WinCC Comfort (TIA Portal)	Yes; from V11
<b>Languages</b>	
<b>Online languages</b>	
• Number of online/runtime languages	32

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Article number	<b>6AV2124-2DC01-0AX0</b> SIMATIC HMI KTP400 Comfort
<b>Functionality under WinCC (TIA Portal)</b>	
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
<b>Message system</b>	
• Bit messages	Yes
- Number of bit messages	2 000
• Analog messages	Yes
- Number of analog messages	50
• Message buffer	
- Number of entries	256
- Circulating buffer	Yes
- retentive	Yes
<b>Recipe management</b>	
• Number of recipes	100
• 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
<b>Images</b>	
• Number of configurable images	500
<b>Archiving</b>	
• Number of archives per device	10
<b>Security</b>	
• Number of user groups	50
• Number of users	50
• SIMATIC Logon	Yes
<b>Logging through printer</b>	
• Alarms	Yes
• Report (shift log)	Yes
• Hardcopy	Yes
• Electronic print to file	Yes; PDF, HTML
<b>Transfer (upload/download)</b>	
• MPI/PROFIBUS DP	Yes
• Ethernet	Yes

Article number	<b>6AV2124-2DC01-0AX0</b> 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
• 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>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
USB memory	Yes
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

### Technical specifications

Article number	<b>6AV2124-1DC01-0AX0</b> SIMATIC HMI KP400 Comfort	<b>6AV2124-1GC01-0AX0</b> SIMATIC HMI KP700 Comfort	<b>6AV2124-1JC01-0AX0</b> SIMATIC HMI KP900 Comfort	<b>6AV2124-1MC01-0AX0</b> SIMATIC HMI KP1200 Comfort	<b>6AV2124-1QC02-0AX1</b> 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
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
<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>					
Wall mounting/direct mounting	No	No	No	No	No
Mounting in portrait format possible	No	No	No	No	No
<b>Supply voltage</b>					
Rated value (DC)	24 V	24 V	24 V	24 V	24 V
<b>Memory</b>					
Memory available for user data	4 Mbyte	12 Mbyte	12 Mbyte	12 Mbyte	24 Mbyte
<b>Type of output</b>					
Acoustics					
• Speaker	No	Yes	Yes	Yes	Yes
<b>Time of day</b>					
<b>Clock</b>					
• Hardware clock (real-time)	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	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined
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 SD card slots	2	2	2	2	2
<b>Industrial Ethernet</b>					
• Number of ports of the integrated switch	1; No switch integrated	2	2	2	2

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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>Protocols</b>					
PROFINET	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
<b>Degree and class of protection</b>					
NEMA (front)					
• 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	Yes
• ATEX Zone 22	Yes	Yes	Yes	Yes	Yes
• IECEx Zone 2	Yes	Yes	Yes	Yes	Yes
• IECEx Zone 22	Yes	Yes	Yes	Yes	Yes
• 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					
Suited for outdoor use					
<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

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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>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
<b>Functionality under WinCC (TIA Portal)</b>					
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
<b>Message system</b>					
• Bit messages	Yes	Yes	Yes	Yes	
- Number of bit messages	2 000	4 000	4 000	4 000	6 000
• Analog messages	Yes	Yes	Yes	Yes	
- 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
<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

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Article number	<b>6AV2124-1DC01-0AX0</b> SIMATIC HMI KP400 Comfort	<b>6AV2124-1GC01-0AX0</b> SIMATIC HMI KP700 Comfort	<b>6AV2124-1JC01-0AX0</b> SIMATIC HMI KP900 Comfort	<b>6AV2124-1MC01-0AX0</b> SIMATIC HMI KP1200 Comfort	<b>6AV2124-1QC02-0AX1</b> SIMATIC HMI KP1500 Comfort
<b>Transfer (upload/download)</b>					
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes	Yes
<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
• 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

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Article number	<b>6AV2124-0GC01-0AX0</b> SIMATIC HMI TP700 Comfort	<b>6AV2124-0JC01-0AX0</b> SIMATIC HMI TP900 Comfort	<b>6AV2124-0MC01-0AX0</b> SIMATIC HMI TP1200 Comfort	<b>6AV2124-0QC02-0AX1</b> SIMATIC HMI TP1500 Comfort	<b>6AV2124-0UC02-0AX1</b> SIMATIC HMI TP1900 Comfort	<b>6AV2124-0XC02-0AX1</b> 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
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
<b>Control elements</b>						
<b>Keyboard fonts</b>						
• Function keys						
- Number of function keys	0	0	0	0	0	0
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Wall mounting/direct mounting	No	No	No			
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes	Yes
<b>Supply voltage</b>						
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
<b>Memory</b>						
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>						
Acoustics						
• Speaker	Yes	Yes	Yes	Yes	Yes	Yes
<b>Time of day</b>						
<b>Clock</b>						
• Hardware clock (real-time)	Yes	Yes	Yes	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	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 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 SD card slots	2	2	2	2	2	2
<b>Industrial Ethernet</b>						
• Number of ports of the integrated switch	2	2	2	2	2	2



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<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
IRT	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes	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>Degree and class of protection</b>						
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	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	Yes	Yes	Yes
• ATEX Zone 22	Yes	Yes	Yes	Yes	Yes	Yes
• IECEX Zone 2	Yes	Yes	Yes	Yes	Yes	Yes
• IECEX Zone 22	Yes	Yes	Yes	Yes	Yes	Yes
• cULus Class I Zone 2, Division 2	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; For inscription on device rating plate		
• FM Class II Division 2				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
<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

### Technical specifications

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>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>Functionality under WinCC (TIA Portal)</b>						
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
<b>Message system</b>						
• Bit messages	Yes	Yes	Yes			
- Number of bit messages	4 000	4 000	4 000	6 000	6 000	6 000
• Analog messages	Yes	Yes	Yes			
- 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
<b>Recipe management</b>						
• Number of recipes	300	300	300	500	500	500
• 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
<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
<b>Security</b>						
• Number of user groups	50	50	50	50	50	50
• Number of users	50	50	50	50	50	50
• 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

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Standard devices

#### Technical specifications

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>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

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>

## Overview



- 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
- 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
- Optimal selection option: seven touch and five key versions are available
- Data security in the event of a power failure for the device and for the SIMATIC HMI memory card
- Innovative service and commissioning concept through second SD card (automatic backup)
- Easy project transfer via standard cable (standard Ethernet cable, standard USB cable)
- Maximum performance with short screen refresh times
- Suitable for extremely harsh industrial environments thanks to extended approvals such as ATEX 2/22
- Wide range of communication options: PROFIBUS and PROFINET onboard; 2x PROFINET with integrated switch for 7" models or larger; plus 1 additional PROFINET with Gigabit support for 15" models or larger
- All variants can be used as an OPC UA client or as an OPC DA server
- Key-operated devices with LED in every function key and new text input mechanism, similar to the keypads of mobile phones
- Key-operated devices with stamped keys for optimum tactile feedback
- All keys have a service life of 2 million operations
- Configuring with the WinCC engineering software of the TIA Portal

### Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products.

**SIPLUS extreme-specific information was added.**

## Ordering data

## Article No.

### SIPLUS HMI Comfort Panels, Keys and Touch

<b>SIPLUS HMI KTP400 Comfort</b>	<b>6AG1124-2DC01-4AX0</b>
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### SIPLUS HMI Comfort Panels, Touch

<b>SIPLUS HMI TP700 Comfort</b>	<b>6AG1124-0GC01-4AX0</b>
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<b>SIPLUS HMI TP900 Comfort</b>	<b>6AG1124-0JC01-4AX0</b>
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<b>SIPLUS HMI TP1200 Comfort</b>	<b>6AG1124-0MC01-4AX0</b>
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<b>SIPLUS HMI TP1500 Comfort</b>	<b>6AG1124-0QC02-4AX1</b>
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<b>SIPLUS HMI TP1900 Comfort</b>	<b>6AG1124-0UC02-4AX1</b>
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<b>SIPLUS HMI TP2200 Comfort</b>	<b>6AG1124-0XC02-4AX1</b>
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### SIPLUS HMI Comfort Panels, Keys

<b>SIPLUS HMI KP400 Comfort</b>	<b>6AG1124-1DC01-4AX0</b>
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<b>SIPLUS HMI KP700 Comfort</b>	<b>6AG1124-1GC01-4AX0</b>
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<b>SIPLUS HMI KP900 Comfort</b>	<b>6AG1124-1JC01-4AX0</b>
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<b>SIPLUS HMI KP1200 Comfort</b>	<b>6AG1124-1MC01-4AX0</b>
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<b>SIPLUS HMI KP1500 Comfort</b>	<b>6AG1124-1QC02-4AX1</b>
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### Accessories

See HMI accessories
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## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### SIPLUS Comfort Panels Standard

#### Technical specifications

Article number	<b>6AG1124-2DC01-4AX0</b> SIPLUS HMI KTP400 COMFORT	<b>6AG1124-0GC01-4AX0</b> SIPLUS HMI TP700 COMFORT	<b>6AG1124-0JC01-4AX0</b> SIPLUS HMI TP900 COMFORT	<b>6AG1124-0MC01-4AX0</b> SIPLUS HMI TP1200 COMFORT
<b>Ambient conditions</b>				
Suited for indoor use	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No
<b>Ambient temperature during operation</b>				
• Operation (vertical installation)				
- For vertical installation, min.	0 °C; = Tmin	0 °C; = Tmin	0 °C; = Tmin	0 °C; = Tmin
- For vertical installation, max.	50 °C; = Tmax	50 °C; = Tmax	50 °C; = Tmax	50 °C; = Tmax
<b>Altitude during operation relating to sea level</b>				
• Installation altitude above sea level, max.	5 000 m	5 000 m	5 000 m	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
<b>Relative humidity</b>				
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Resistance</b>				
<b>Coolants and lubricants</b>				
- Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>				
- to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request			
- to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *			
- to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>				
- to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request			
- to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *			
- to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>				
- Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)	Yes; Class 3 (excluding trichlorethylene)	Yes; Class 3 (excluding trichlorethylene)	Yes; Class 3 (excluding trichlorethylene)
- Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)			
<b>Remark</b>				
- Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>				
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability	Yes; Class 2 for high reliability	Yes; Class 2 for high reliability	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection	Yes; Type 1 protection	Yes; Type 1 protection	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A

### Technical specifications

Article number	<b>6AG1124-0QC02-4AX1</b> SIPLUS HMI TP1500 Comfort	<b>6AG1124-0UC02-4AX1</b> SIPLUS HMI TP1900 Comfort	<b>6AG1124-0XC02-4AX1</b> SIPLUS 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; = Tmin	0 °C; = Tmin
- For vertical installation, max.	50 °C; (55 °C, see entry ID: 64847814)	45 °C; = Tmax	45 °C; = Tmax
<b>Altitude during operation relating to sea level</b>			
• Installation altitude above sea level, max.	5 000 m	5 000 m	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 080 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
<b>Relative humidity</b>			
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Resistance</b>			
<b>Coolants and lubricants</b>			
- Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>			
- to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request		
- to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *		
- to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>			
- to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request		
- to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *		
- to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>			
- Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)	Yes; Class 3 (excluding trichlorethylene)	Yes; Class 3 (excluding trichlorethylene)
- Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)		
<b>Remark</b>			
- Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>			
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability	Yes; Class 2 for high reliability	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection	Yes; Type 1 protection	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A

More information is available on the Internet at:

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



## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels Outdoor

#### Overview



#### **SIMATIC HMI Comfort Panels Outdoor**

Special HMI Panels have been developed which are designed to withstand outdoor environments.

It's not only extreme temperatures which call for robust hardware. Direct sunlight, too, must not be allowed to impair display readability and the panel front must be protected from UV radiation.

The specially-bonded Outdoor fronts and the rugged hardware of the Outdoor Panels make the SIMATIC HMI Comfort Panels Outdoor a reliable partner in this environment.

- For outdoor operation without additional measures
- 7" and 15" daylight-readable display, widescreen
- Automatic, central or manual dimming of the backlight, with integrated sensor
- Panel front 100% UV protected
- Front resistant to salt mist
- Front IP66 and Nema4 x (indoor/outdoor)
- Numerous explosion protection and shipbuilding certifications
- Extended operating temperature range: from -30 °C to +60 °C at 3 000 m installation altitude
- TIA Portal central engineering tool (WinCC V13 SP1&HSP or higher)
- Comfort Panel functionality and performance

#### Notice:

The 7" Comfort Panel Outdoor corresponds to a 7" Comfort Panel Standard, the 15" Comfort Panel Outdoor corresponds to a 12" Comfort Panel Standard in respect of performance, functionality and quantity structure.

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

#### Ordering data

#### Article No.

##### *SIMATIC HMI Comfort Panels Outdoor*

##### **SIMATIC TP700 Comfort Panel Outdoor**

**6AV2124-0GC13-0AX0**

Touch operation, 7" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable as from WinCC Comfort V13, SP1, HSP

##### **SIMATIC TP1500 Comfort Panel Outdoor**

**6AV2124-0QC13-0AX0**

Touch operation, 15" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable as from WinCC Comfort V13, SP1, HSP

##### **Starter kit for SIMATIC HMI TP700 Comfort Panel Outdoor**

**6AV2124-0GC10-0SA0**

Contents:

- 1x touch panel
- 1x SD system outdoor card
- 1x touch pen system
- 1x SIMATIC WinCC Comfort

##### **Starter kit for SIMATIC HMI TP1500 Comfort Panel Outdoor**

**6AV2124-0QC10-0SA0**

Contents:

- 1x touch panel
- 1x SD system outdoor card
- 1x touch pen system
- 1x SIMATIC WinCC Comfort

##### *Accessories*

See "SIMATIC HMI operator control and monitoring systems" -> "Accessories"

### Technical specifications

Article number	<b>6AV2124-0GC13-0AX0</b> SIMATIC HMI TP700 Comfort Outdoor	<b>6AV2124-0QC13-0AX0</b> SIMATIC HMI TP1500 Comfort Outdoor
<b>General information</b>		
Product type designation	TP700 Comfort Outdoor	TP1500 Comfort Outdoor
<b>Display</b>		
Design of display	TFT, bonded, daylight-readable	TFT, bonded, daylight-readable
Screen diagonal	7 in	15.4 in
Number of colors	16 777 216	16 777 216
<b>Resolution (pixels)</b>		
• Horizontal image resolution	800 pixel	1 280 pixel
• Vertical image resolution	480 pixel	800 pixel
<b>Backlighting</b>		
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h
<b>Control elements</b>		
<b>Keyboard fonts</b>		
• Function keys		
- Number of function keys	0	0
<b>Touch operation</b>		
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive
<b>Installation type/mounting</b>		
Mounting in portrait format possible	Yes	Yes
<b>Supply voltage</b>		
Rated value (DC)	24 V	24 V
<b>Memory</b>		
Memory available for user data	12 Mbyte	12 Mbyte
<b>Type of output</b>		
Acoustics		
• Speaker	Yes	Yes
<b>Time of day</b>		
<b>Clock</b>		
• Hardware clock (real-time)	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes
<b>Interfaces</b>		
Number of industrial Ethernet interfaces	2	2
Number of RS 485 interfaces	1; RS 422 / 485 combined	1; RS 422 / 485 combined
Number of USB interfaces	2; USB 2.0	2; USB 2.0
• USB Mini B	1; 5-pole	1; 5-pole
Number of SD card slots	2	2
<b>Industrial Ethernet</b>		
• Number of ports of the integrated switch	2	2
<b>Protocols</b>		
PROFINET	Yes	Yes
IRT	Yes; WinCC V13 SP1 HSP or higher	Yes; WinCC V13 SP1 HSP or higher
PROFIBUS	Yes	Yes
MPI	Yes	Yes
<b>Redundancy mode</b>		
<b>Media redundancy</b>		
- MRP	Yes; WinCC V13 SP1 HSP or higher	Yes; WinCC V13 SP1 HSP or higher



## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

#### Technical specifications

Article number	<b>6AV2124-0GC13-0AX0</b> SIMATIC HMI TP700 Comfort Outdoor	<b>6AV2124-0GC13-0AX0</b> SIMATIC HMI TP1500 Comfort Outdoor
<b>Degree and class of protection</b>		
IP (at the front)	IP66	IP66
NEMA (front)		
• Enclosure Type 4x at the front	Yes	Yes
<b>Standards, approvals, certificates</b>		
CE mark	Yes	Yes
cULus	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes
KC approval	Yes	Yes
<b>Use in hazardous areas</b>		
• ATEX Zone 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• ATEX Zone 22	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• IECEx Zone 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• IECEx Zone 22	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• cULus Class I Zone 2, Division 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• FM Class I Division 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
<b>Marine approval</b>		
• Germanischer Lloyd (GL)	Yes	Yes
• American Bureau of Shipping (ABS)	Yes	Yes
• Bureau Veritas (BV)	Yes; Available soon	Yes; Available soon
• Det Norske Veritas (DNV)	Yes	Yes
• Korean Register of Shipping (KRS)	No; Available soon	No; Available soon
• Lloyds Register of Shipping (LRS)	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes; Available soon	Yes; Available soon
• Polski Rejestr Statkow (PRS)	No	No
• Chinese Classification Society (CCS)	Yes; Available soon	Yes; Available soon
• Compass working clearance	5 m	5 m
<b>Ambient conditions</b>		
Suited for indoor use	Yes	Yes
Suited for outdoor use	Yes; Powder-coated, UV resistant	Yes; Powder-coated, UV resistant
<b>Ambient temperature during operation</b>		
• Operation (vertical installation)		
- For vertical installation, min.	-30 °C	-30 °C
- For vertical installation, max.	60 °C; (55 °C, see entry ID: 64847814)	60 °C; (55 °C, see entry ID: 64847814)
<b>Altitude during operation relating to sea level</b>		
• Installation altitude above sea level, max.	3 000 m; Depending on the operating temperature	3 000 m; Depending on the operating temperature
<b>Relative humidity</b>		
• Operation, max.	90 %; no condensation	90 %; no condensation
<b>Configuration</b>		
<b>Configuration software</b>		
• WinCC Comfort (TIA Portal)	Yes; WinCC V13 SP1 Update 7 + HSP or higher	Yes; WinCC V13 SP1 Update 7 + HSP or higher
<b>Languages</b>		
<b>Online languages</b>		
• Number of online/runtime languages	32	32

### Technical specifications

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	SIMATIC HMI TP1500 Comfort Outdoor
<b>Functionality under WinCC (TIA Portal)</b>		
Applications/options		
• Web browser	Yes	Yes
• Pocket Word	Yes	Yes
• Pocket Excel	Yes	Yes
• PDF Viewer	Yes	Yes
• Media Player	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes
Task planner		
• time-controlled	Yes	Yes
• task-controlled	Yes	Yes
<b>Message system</b>		
• Bit messages		
- Number of bit messages	4 000	4 000
• Analog messages		
- Number of analog messages	200	200
• Message buffer		
- Number of entries	1 024	1 024
- Circulating buffer	Yes	Yes
- retentive	Yes	Yes
<b>Recipe management</b>		
• Number of recipes	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes
<b>Variables</b>		
• Number of variables per device	2 048	2 048
• Number of variables per screen	400	400
<b>Images</b>		
• Number of configurable images	500	500
<b>Archiving</b>		
• Number of archives per device	50	50
<b>Security</b>		
• Number of user groups	50	50
• Number of users	50	50
• SIMATIC Logon	Yes	Yes
<b>Logging through printer</b>		
• Alarms	Yes	Yes
• Report (shift log)	Yes	Yes
• Hardcopy	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>		
• MPI/PROFIBUS DP	Yes	Yes
• Ethernet	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

#### Technical specifications

Article number	<b>6AV2124-0GC13-0AX0</b> SIMATIC HMI TP700 Comfort Outdoor	<b>6AV2124-0GC13-0AX0</b> SIMATIC HMI TP1500 Comfort Outdoor
<b>Process coupling</b>		
• S7-1200	Yes	Yes
• S7-1500	Yes	Yes
• S7-200	Yes	Yes
• S7-300/400	Yes	Yes
• LOGO!	Yes	Yes
• WinAC	Yes	Yes
• SIMOTION	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes
• Mitsubishi (FX)	Yes	Yes
• OMRON (FINS TCP)	No	No
• OMRON (LINK/Multilink)	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes
• Modicon (Modbus)	Yes	Yes
• OPC UA Client	Yes	Yes
• OPC UA Server	Yes	Yes
<b>Peripherals/Options</b>		
Printer	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	Yes	Yes
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes
USB memory	Yes; e.g. USB RFID reader, see FAQ entry ID: 99808171	Yes; e.g. USB RFID reader, see FAQ entry ID: 99808171
Network camera	Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473	Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473
<b>Accessories</b>		
Expansion module	Optional e.g. USB RFID reader, see FAQ entry ID: 99808171	Optional e.g. USB RFID reader, see FAQ entry ID: 99808171
Further accessories are available	Yes; Mounting clips and 2-pin power supply connector	Yes; Mounting clips and 2-pin power supply connector
<b>Mechanics/material</b>		
Enclosure material (front)		
• Plastic	No	No
• Aluminum	Yes; Powder-coated, UV resistant	Yes; Powder-coated, UV resistant
• Stainless steel	No	No
<b>Dimensions</b>		
Width of the housing front	214 mm	415 mm
Height of housing front	158 mm	310 mm
Mounting cutout, width	197 mm	396 mm
Mounting cutout, height	141 mm	291 mm
Overall depth	67 mm	77 mm
<b>Weights</b>		
Weight (without packaging)	1.5 kg	4 kg
<b>Other</b>		
Note:	Power, quantity structure and performance correspond to a standard 7" Comfort Panel	Power, quantity structure and performance correspond to a standard 12" Comfort Panel

### Technical specifications

Article number	<b>6AV2124-0GC10-0SA0</b> Starter kit TP700 Comfort Outdoor	<b>6AV2124-0QC10-0SA0</b> Starter kit TP1500 Comfort Outdoor
<b>General information</b>		
Product type designation	TP700 Outdoor	TP1500 Outdoor
<b>Display</b>		
Design of display	TFT, bonded, daylight-readable	TFT, bonded, daylight-readable
Screen diagonal	7 in	15.4 in
Number of colors	16 777 216	16 777 216
<b>Resolution (pixels)</b>		
• Horizontal image resolution	800 pixel	1 280 pixel
• Vertical image resolution	480 pixel	800 pixel
<b>Backlighting</b>		
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h
<b>Control elements</b>		
<b>Keyboard fonts</b>		
• Function keys		
- Number of function keys	0	0
<b>Touch operation</b>		
• Design as touch screen	Yes; analog, resistive	Yes; analog, resistive
<b>Installation type/mounting</b>		
Mounting in portrait format possible	Yes	Yes
<b>Supply voltage</b>		
Rated value (DC)	24 V	24 V
<b>Memory</b>		
Memory available for user data	12 Mbyte	12 Mbyte
<b>Type of output</b>		
Acoustics		
• Speaker	Yes	Yes
<b>Time of day</b>		
<b>Clock</b>		
• Hardware clock (real-time)	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes
<b>Interfaces</b>		
Number of industrial Ethernet interfaces	2	2
Number of RS 485 interfaces	1; RS 422 / 485 combined	1; RS 422 / 485 combined
Number of USB interfaces	2; USB 2.0	2; USB 2.0
• USB Mini B	1; 5-pole	1; 5-pole
Number of SD card slots	2	2
<b>Industrial Ethernet</b>		
• Number of ports of the integrated switch	2	2
<b>Protocols</b>		
PROFINET	Yes	Yes
IRT	Yes; WinCC V13 SP1 HSP or higher	Yes; WinCC V13 SP1 HSP or higher
PROFIBUS	Yes	Yes
MPI	Yes	Yes
<b>Redundancy mode</b>		
<b>Media redundancy</b>		
- MRP	Yes; WinCC V13 SP1 HSP or higher	Yes; WinCC V13 SP1 HSP or higher

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

#### Technical specifications

Article number	<b>6AV2124-0GC10-0SA0</b> Starter kit TP700 Comfort Outdoor	<b>6AV2124-0QC10-0SA0</b> Starter kit TP1500 Comfort Outdoor
<b>Degree and class of protection</b>		
IP (at the front)	IP66	IP66
NEMA (front)		
• Enclosure Type 4x at the front	Yes	Yes
<b>Standards, approvals, certificates</b>		
CE mark	Yes	Yes
cULus	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes
KC approval	Yes	Yes
<b>Use in hazardous areas</b>		
• ATEX Zone 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• ATEX Zone 22	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• IECEx Zone 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• IECEx Zone 22	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• cULus Class I Zone 2, Division 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• FM Class I Division 2	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
<b>Marine approval</b>		
• Germanischer Lloyd (GL)	Yes	Yes
• American Bureau of Shipping (ABS)	Yes	Yes
• Bureau Veritas (BV)	Yes; Available soon	Yes; Available soon
• Det Norske Veritas (DNV)	Yes	Yes
• Korean Register of Shipping (KRS)	No; Available soon	No; Available soon
• Lloyds Register of Shipping (LRS)	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes; Available soon	Yes; Available soon
• Polski Rejestr Statkow (PRS)	No	No
• Chinese Classification Society (CCS)	Yes; Available soon	Yes; Available soon
• Compass working clearance	5 m	5 m
<b>Ambient conditions</b>		
Suited for indoor use	Yes	Yes
Suited for outdoor use	Yes; Powder-coated, UV resistant	Yes; Powder-coated, UV resistant
<b>Ambient temperature during operation</b>		
• Operation (vertical installation)		
- For vertical installation, min.	-30 °C	-30 °C
- For vertical installation, max.	60 °C; (55 °C, see entry ID: 64847814)	60 °C; (55 °C, see entry ID: 64847814)
<b>Altitude during operation relating to sea level</b>		
• Installation altitude above sea level, max.	3 000 m; Depending on the operating temperature	3 000 m; Depending on the operating temperature
<b>Relative humidity</b>		
• Operation, max.	90 %; no condensation	90 %; no condensation
<b>Configuration</b>		
<b>Configuration software</b>		
• WinCC Comfort (TIA Portal)	Yes; WinCC V13 SP1 Update 7 + HSP or higher	Yes; WinCC V13 SP1 Update 7 + HSP or higher
<b>Languages</b>		
<b>Online languages</b>		
• Number of online/runtime languages	32	32

### Technical specifications

Article number	<b>6AV2124-0GC10-0SA0</b> Starter kit TP700 Comfort Outdoor	<b>6AV2124-0QC10-0SA0</b> Starter kit TP1500 Comfort Outdoor
<b>Functionality under WinCC (TIA Portal)</b>		
Applications/options		
• Web browser	Yes	Yes
• Pocket Word	Yes	Yes
• Pocket Excel	Yes	Yes
• PDF Viewer	Yes	Yes
• Media Player	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes
Task planner		
• time-controlled	Yes	Yes
• task-controlled	Yes	Yes
<b>Message system</b>		
• Bit messages		
- Number of bit messages	4 000	4 000
• Analog messages		
- Number of analog messages	200	200
• Message buffer		
- Number of entries	1 024	1 024
- Circulating buffer	Yes	Yes
- retentive	Yes	Yes
<b>Recipe management</b>		
• Number of recipes	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes
<b>Variables</b>		
• Number of variables per device	2 048	2 048
• Number of variables per screen	400	400
<b>Images</b>		
• Number of configurable images	500	500
<b>Archiving</b>		
• Number of archives per device	50	50
<b>Security</b>		
• Number of user groups	50	50
• Number of users	50	50
• SIMATIC Logon	Yes	Yes
<b>Logging through printer</b>		
• Alarms	Yes	Yes
• Report (shift log)	Yes	Yes
• Hardcopy	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>		
• MPI/PROFIBUS DP	Yes	Yes
• Ethernet	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

#### Technical specifications

Article number	<b>6AV2124-0GC10-0SA0</b> Starter kit TP700 Comfort Outdoor	<b>6AV2124-0QC10-0SA0</b> Starter kit TP1500 Comfort Outdoor
<b>Process coupling</b>		
• S7-1200	Yes	Yes
• S7-1500	Yes	Yes
• S7-200	Yes	Yes
• S7-300/400	Yes	Yes
• LOGO!	Yes	Yes
• WinAC	Yes	Yes
• SIMOTION	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes
• Mitsubishi (FX)	Yes	Yes
• OMRON (FINS TCP)	No	No
• OMRON (LINK/Multilink)	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes
• Modicon (Modbus)	Yes	Yes
• OPC UA Client	Yes	Yes
• OPC UA Server	Yes	Yes
<b>Peripherals/Options</b>		
Printer	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	Yes	Yes
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes
USB memory	Yes; e.g. USB RFID reader, see FAQ entry ID: 99808171	Yes; e.g. USB RFID reader, see FAQ entry ID: 99808171
Network camera	Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473	Yes; See FAQ Entry ID: 62383298 and entry ID: 65647473
<b>Accessories</b>		
Expansion module	Optional e.g. USB RFID reader, see FAQ entry ID: 99808171	Optional e.g. USB RFID reader, see FAQ entry ID: 99808171
Further accessories are available	Yes; incl. 1x outdoor SD system card, 1x touch pen system for resistive and capacitive touch displays, and current engineering system WinCC Comfort	Yes; incl. 1x outdoor SD system card, 1x touch pen system for resistive and capacitive touch displays, and current engineering system WinCC Comfort
<b>Mechanics/material</b>		
Enclosure material (front)		
• Plastic	No	No
• Aluminum	Yes; Powder-coated, UV resistant	Yes; Powder-coated, UV resistant
• Stainless steel	No	No
<b>Dimensions</b>		
Width of the housing front	214 mm	415 mm
Height of housing front	158 mm	310 mm
Mounting cutout, width	197 mm	396 mm
Mounting cutout, height	141 mm	291 mm
Overall depth	67 mm	77 mm
<b>Weights</b>		
Weight (without packaging)	1.8 kg	4.3 kg
<b>Other</b>		
Note:	Power, quantity structure and performance correspond to a standard 7" Comfort Panel	Power, quantity structure and performance correspond to a standard 7" Comfort Panel

More information is available on the Internet at:

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

#### Note:

The TP700 Comfort Panel Outdoor is comparable with the TP700 Comfort Panel Standard.

The TP1500 Comfort Panel Outdoor is comparable with the TP1200 Comfort Panel Standard with a 15" display.

A TP1500 Comfort Standard unit with the maximum possible configuration cannot be installed on a TP1500 Comfort Panel Outdoor.

### Overview



### SIPLUS HMI Comfort Panels Outdoor

Special HMI Panels have been developed which are designed to withstand outdoor environments.

It's not only extreme temperatures which call for robust hardware. Direct sunlight, too, must not be allowed to impair display readability and the panel front must be protected from UV radiation. The specially-bonded Outdoor fronts and the rugged hardware of the Outdoor Panels make the SIMATIC HMI Comfort Panels Outdoor a reliable partner in this environment.

- For outdoor operation without additional measures
- 7" and 15" daylight-readable display, widescreen
- Automatic, central or manual dimming of the backlight, with integrated sensor
- Panel front 100% UV protected
- Front resistant to salt mist
- Front IP66 and Nema4 x (indoor/outdoor)
- Many explosion protection and shipbuilding certifications
- Extended operating temperature range: from -30 °C to +60 °C at 3 000 m installation altitude
- TIA Portal central engineering tool (WinCC V13 SP1&HSP or higher)
- Comfort Panel functionality and performance

#### Notice:

The SIPLUS HMI 7" Comfort Panel Outdoor corresponds to a SIPLUS HMI 7" Comfort Panel Standard, the SIPLUS HMI 15" Comfort Panel Outdoor corresponds to a SIPLUS HMI 12" Comfort Panel Standard in respect of performance, functionality and quantity structure.

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

#### Note:

SIPLUS extreme products are based on SIMATIC standard products. The contents listed here were taken from the respective standard products. SIPLUS extreme-specific information was added.

### Ordering data

### Article No.

#### SIPLUS HMI Comfort Panel Outdoor

#### SIPLUS HMI TP700 Comfort Panel Outdoor

6AG1124-0GC13-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -30 ... +60 °C

Touch operation, 7" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable as from WinCC Comfort V13, SP1, HSP

#### SIPLUS HMI TP1500 Comfort Panel Outdoor

6AG1124-0QC13-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -30 ... +60 °C

Touch operation, 15" widescreen TFT display, 16 million colors, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, configurable as from WinCC Comfort V13, SP1, HSP

#### Accessories

See "SIMATIC HMI operator control and monitoring systems" -> "Accessories"



## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### SIPLUS Comfort Panels Outdoor

#### Technical specifications

Article number	<b>6AG1124-0GC13-2AX0</b> SIPLUS HMI TP700 COMFORT OUTDOOR	<b>6AG1124-0QC13-2AX0</b> SIPLUS HMI TP1500 Comfort Outdoor
<b>Ambient conditions</b>		
Suited for indoor use	Yes	Yes
Suited for outdoor use	Yes; Powder-coated, UV resistant	Yes; Powder-coated, UV resistant
<b>Ambient temperature during operation</b>		
• Operation (vertical installation)		
- For vertical installation, min.	-30 °C; = Tmin	-30 °C; = Tmin
- For vertical installation, max.	60 °C; (55 °C, see entry ID: 64847814)	60 °C; (55 °C, see entry ID: 64847814)
<b>Altitude during operation relating to sea level</b>		
• Installation altitude above sea level, max.	5 000 m	5 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
<b>Relative humidity</b>		
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning when condensation present), vertical mounting position	100 %; RH incl. condensation/frost (no commissioning when condensation present), vertical mounting position
<b>Resistance</b>		
<b>Coolants and lubricants</b>		
- Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>		
- to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
- to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
- to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>		
- to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
- to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
- to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>		
- Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)	Yes; Class 3 (excluding trichlorethylene)
- Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)	
<b>Remark</b>		
- Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>		
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A	Yes; Conformal coating, Class A

Additional information is available on the Internet at:  
<http://www.siemens.com/comfort-panels-outdoor>

#### Note:

The SIPLUS HMI TP700 Comfort Panel Outdoor is comparable with the SIPLUS HMI TP700 Comfort Panel Standard.

The SIPLUS HMI TP1500 Comfort Panel Outdoor is comparable with the SIPLUS HMI TP1200 Comfort Panel Standard with a 15" display. A TP1500 Comfort Standard unit with the maximum possible configuration cannot be installed on a SIPLUS HMI TP1500 Comfort Panel Outdoor.

### Overview



**SIMATIC HMI Comfort PRO: The new Comfort Panel PRO with all-round IP65 protection – powerful, ready-to-use, and can be installed directly at the machine**

SIMATIC HMI Comfort Panels PRO with 12", 15", 19" and 22" widescreen format expand the Comfort Panel portfolio to include devices with glass fronts.

The rugged aluminum housing enables it to be used directly at the machine and guarantees durability, even in harsh and extreme operating environments.

#### Highlights:

- All-round IP65 protection
- Comfort Panel functionality and performance
- Rugged, industrial 12", 15", 19" and 22" widescreen displays
- Slim, modern design
- Can be adapted to support arm system of various manufacturers
- Integration of operator controls with Extension Units
- High degree of investment security
- Fast integration capability

12", 15", 19" and 22" SIMATIC HMI Comfort Panels PRO are available in three different versions, depending on the application:

- For support arm (extendable, round tube): mounting by means of standard 48 mm round tube or Siemens round tube adapter
- For support arm (not extendable, flange on top): mounting by means of basic adapter and flange on top, included in scope of delivery
- For pedestal (extendable, flange below): mounting by means of basic adapter and flange below, included in scope of delivery

For more information, please go to:

<http://siemens.com/simatic-hmi-pro>

#### System components for fully-enclosed IP65-protected devices

System components for PRO devices are only suitable for SIMATIC HMI/IPC PRO devices.

In combination with the SIMATIC HMI PRO basic devices, these components enable easy adaptation to individual customer requirements for operator control and monitoring at the machine level, as well as offering a versatile and attractive solution for visualization and automation without a control cabinet.

The following system components are available:

- Fixing elements
  - Adapter sets
  - Basic adapter
  - Round tube adapter
- Extension Units 12" - 22" with operator controls
- Extension components
  - Stainless steel keyboard
  - Tool and keyboard tray

For more detailed information about system components refer to "PC-based Automation" -> "Devices for special requirements" -> "System components".

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Ordering data

##### Comfort Panels PRO

##### TP1200 Comfort PRO

12.1" TFT display,  
1 280 x 800 pixels, 16 M colors;  
touch screen;  
1 x MPI/PROFIBUS DP,  
1 x PROFINET/Industrial Ethernet  
interface with MRP and RT/IRT  
support (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slots;  
2 x USB

- For support arm (not extendable, flange on top)
- For support arm (extendable, round tube)
- For pedestal (extendable, flange below)

**6AV2124-0MC24-0AX0**

**6AV2124-0MC24-0BX0**

**6AV2124-0MC24-1AX0**

##### TP1500 Comfort PRO

15.6" TFT display,  
1 366 x 768 pixels, 16 M colors;  
touch screen;  
1 x MPI/PROFIBUS DP,  
1 x PROFINET/Industrial Ethernet  
Interface with MRP and RT/IRT  
support (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slots;  
2 x USB

- For support arm (not extendable, flange on top)
- For support arm (extendable, round tube)
- For pedestal (extendable, flange below)

**6AV2124-0QC24-0AX0**

**6AV2124-0QC24-0BX0**

**6AV2124-0QC24-1AX0**

##### TP1900 Comfort PRO

18.5" TFT display,  
1 366 x 768 pixels, 16 M colors;  
touch screen;  
1 x MPI/PROFIBUS DP,  
1 x PROFINET/Industrial Ethernet  
Interface with MRP and RT/IRT  
support (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slots;  
2 x USB

- For support arm (not extendable, flange on top)
- For support arm (extendable, round tube)
- For pedestal (extendable, flange below)

**6AV2124-0UC24-0AX0**

**6AV2124-0UC24-0BX0**

**6AV2124-0UC24-1AX0**

##### TP2200 Comfort PRO

21.5" TFT display,  
1 920 x 1 080 pixels, 16 M colors;  
touch screen;  
1 x MPI/PROFIBUS DP,  
1 x PROFINET/Industrial Ethernet  
Interface with MRP and RT/IRT  
support (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slots;  
2 x USB

- For support arm (not extendable, flange on top)
- For support arm (extendable, round tube)
- For pedestal (extendable, flange below)

**6AV2124-0XC24-0AX0**

**6AV2124-0XC24-0BX0**

**6AV2124-0XC24-1AX0**

#### Technical specifications

Article number	<b>6AV2124-0MC24-0AX0</b>	<b>6AV2124-0MC24-1AX0</b>	<b>6AV2124-0MC24-0BX0</b>
	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro
<b>General information</b>			
Product type designation	TP1200 PRO	TP1200 PRO	TP1200 PRO
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	12.1 in	12.1 in	12.1 in
Number of colors	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>			
• Horizontal image resolution	1 280 pixel	1 280 pixel	1 280 pixel
• Vertical image resolution	800 pixel	800 pixel	800 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	80 000 h	80 000 h	80 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	0	0	0
<b>Touch operation</b>			
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
<b>Installation type/mounting</b>			
Mounting	Support arm	Pedestal	Support arm
Mounting in portrait format possible	No	No	No

### Technical specifications

Article number	<b>6AV2124-0MC24-0AX0</b> SIMATIC HMI TP1200 Comfort Pro	<b>6AV2124-0MC24-1AX0</b> SIMATIC HMI TP1200 Comfort Pro	<b>6AV2124-0MC24-0BX0</b> SIMATIC HMI TP1200 Comfort Pro
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Memory</b>			
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte
<b>Type of output</b>			
Acoustics			
• Speaker	Yes	Yes	Yes
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	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
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of SD card slots	2	2	2
<b>Industrial Ethernet</b>			
• Number of ports of the integrated switch	2	2	2
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
IRT	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	Yes	Yes	Yes
<b>Degree and class of protection</b>			
NEMA (front)			
• Enclosure Type 4x at the front	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No; Available soon	No; Available soon	No; Available soon
EAC (formerly Gost-R)	No; Available soon	No; Available soon	No; Available soon
<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
- For vertical installation, max.	45 °C	45 °C	45 °C
<b>Relative humidity</b>			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	<b>6AV2124-0MC24-0AX0</b> SIMATIC HMI TP1200 Comfort Pro	<b>6AV2124-0MC24-1AX0</b> SIMATIC HMI TP1200 Comfort Pro	<b>6AV2124-0MC24-0BX0</b> SIMATIC HMI TP1200 Comfort Pro
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	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
<b>Functionality under WinCC (TIA Portal)</b>			
Applications/options			
• Web browser	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes
Task planner			
• time-controlled	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes
<b>Message system</b>			
• Bit messages			
- Number of bit messages	4 000	4 000	4 000
• Analog messages			
- Number of analog messages	200	200	200
• Message buffer			
- Number of entries	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
<b>Recipe management</b>			
• Number of recipes	300	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes	Yes
<b>Variables</b>			
• Number of variables per device	2 048	2 048	2 048
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	500	500	500
<b>Archiving</b>			
• Number of archives per device	50	50	50
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	Yes	Yes	Yes
<b>Logging through printer</b>			
• Alarms	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML

### Technical specifications

Article number	<b>6AV2124-0MC24-0AX0</b> SIMATIC HMI TP1200 Comfort Pro	<b>6AV2124-0MC24-1AX0</b> SIMATIC HMI TP1200 Comfort Pro	<b>6AV2124-0MC24-0BX0</b> SIMATIC HMI TP1200 Comfort Pro
<b>Transfer (upload/download)</b>			
• MPI/PROFIBUS DP	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes
<b>Process coupling</b>			
• S7-1200	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes
<b>Peripherals/Options</b>			
Printer	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
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes
Network camera	Yes	Yes	Yes
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	No	No	No
• Aluminum	Yes	Yes	Yes
• Stainless steel	No	No	No
<b>Dimensions</b>			
Width of the housing front	313 mm	313 mm	313 mm
Height of housing front	226 mm; Without basic adapter	226 mm; Without basic adapter	226 mm; Without basic adapter
Overall depth	101 mm; Without basic adapter	101 mm; Without basic adapter	101 mm; Without basic adapter
<b>Weights</b>			
Weight (without packaging)	4.9 kg	4.9 kg	4.5 kg

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	<b>6AV2124-0QC24-0AX0</b> SIMATIC HMI TP1500 Comfort PRO	<b>6AV2124-0QC24-0BX0</b> SIMATIC HMI TP1500 Comfort PRO	<b>6AV2124-0QC24-1AX0</b> SIMATIC HMI TP1500 Comfort PRO
<b>General information</b>			
Product type designation	TP1500 Comfort PRO	TP1500 Comfort PRO	TP1500 Comfort PRO
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	15.6 in	15.6 in	15.6 in
Number of colors	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>			
• Horizontal image resolution	1 366 pixel	1 366 pixel	1 366 pixel
• Vertical image resolution	768 pixel	768 pixel	768 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	0	0	0
<b>Touch operation</b>			
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
<b>Installation type/mounting</b>			
Mounting	Support arm	Support arm	Pedestal
Mounting in portrait format possible	No	No	No
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Memory</b>			
Memory available for user data	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>			
Acoustics			
• Speaker	Yes	Yes	Yes
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	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
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of SD card slots	2	2	2
<b>Industrial Ethernet</b>			
• Number of ports of the integrated switch	2	2	2
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
IRT	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	Yes	Yes	Yes

### Technical specifications

Article number	6AV2124-0QC24-0AX0	6AV2124-0QC24-0BX0	6AV2124-0QC24-1AX0
	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO
<b>Degree and class of protection</b>			
NEMA (front)			
• Enclosure Type 4x at the front	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No; Available soon	No; Available soon	No; Available soon
EAC (formerly Gost-R)	No; Available soon	No; Available soon	No; Available soon
<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
- For vertical installation, max.	45 °C	45 °C	45 °C
<b>Relative humidity</b>			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	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
<b>Functionality under WinCC (TIA Portal)</b>			
Applications/options			
• Web browser	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes
Task planner			
• time-controlled	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes
<b>Message system</b>			
• Bit messages			
- Number of bit messages	6 000	6 000	6 000
• Analog messages			
- Number of analog messages	200	200	200
• Message buffer			
- Number of entries	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
<b>Recipe management</b>			
• Number of recipes	500	500	500
• Size of internal recipe memory	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes



## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	<b>6AV2124-0QC24-0AX0</b> SIMATIC HMI TP1500 Comfort PRO	<b>6AV2124-0QC24-0BX0</b> SIMATIC HMI TP1500 Comfort PRO	<b>6AV2124-0QC24-1AX0</b> SIMATIC HMI TP1500 Comfort PRO
<b>Variables</b>			
• Number of variables per device	4 096	4 096	4 096
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	750	750	750
<b>Archiving</b>			
• Number of archives per device	50	50	50
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	Yes	Yes	Yes
<b>Logging through printer</b>			
• Alarms	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>			
• MPI/PROFIBUS DP	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes
<b>Process coupling</b>			
• S7-1200	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes
<b>Peripherals/Options</b>			
Printer	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
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes
Network camera	Yes	Yes	Yes
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	No	No	No
• Aluminum	Yes	Yes	Yes
• Stainless steel	No	No	No
<b>Dimensions</b>			
Width of the housing front	396 mm	396 mm	396 mm
Height of housing front	256 mm; Without basic adapter	256 mm; Without basic adapter	256 mm; Without basic adapter
Overall depth	101 mm; Without basic adapter	101 mm; Without basic adapter	101 mm; Without basic adapter
<b>Weights</b>			
Weight (without packaging)	6.3 kg	6.3 kg	6.3 kg

### Technical specifications

Article number	<b>6AV2124-0UC24-0AX0</b> SIMATIC HMI TP1900 Comfort PRO	<b>6AV2124-0UC24-0BX0</b> SIMATIC HMI TP1900 Comfort PRO	<b>6AV2124-0UC24-1AX0</b> SIMATIC HMI TP1900 Comfort PRO
<b>General information</b>			
Product type designation	TP1900 Comfort PRO	TP1900 Comfort PRO	TP1900 Comfort PRO
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	18.5 in	18.5 in	18.5 in
Number of colors	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>			
• Horizontal image resolution	1 366 pixel	1 366 pixel	1 366 pixel
• Vertical image resolution	768 pixel	768 pixel	768 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	0	0	0
<b>Touch operation</b>			
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
<b>Installation type/mounting</b>			
Mounting	Support arm	Support arm	Pedestal
Mounting in portrait format possible	No	No	No
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Memory</b>			
Memory available for user data	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>			
Acoustics			
• Speaker	Yes	Yes	Yes
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	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
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of SD card slots	2	2	2
<b>Industrial Ethernet</b>			
• Number of ports of the integrated switch	2	2	2
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
IRT	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	<b>6AV2124-0UC24-0AX0</b> SIMATIC HMI TP1900 Comfort PRO	<b>6AV2124-0UC24-0BX0</b> SIMATIC HMI TP1900 Comfort PRO	<b>6AV2124-0UC24-1AX0</b> SIMATIC HMI TP1900 Comfort PRO
<b>Degree and class of protection</b>			
NEMA (front)			
• Enclosure Type 4x at the front	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No; Available soon	No; Available soon	No; Available soon
EAC (formerly Gost-R)	No; Available soon	No; Available soon	No; Available soon
<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
- For vertical installation, max.	45 °C	45 °C	45 °C
<b>Relative humidity</b>			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	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
<b>Functionality under WinCC (TIA Portal)</b>			
Applications/options			
• Web browser	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes
Task planner			
• time-controlled	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes
<b>Message system</b>			
• Bit messages			
- Number of bit messages	6 000	6 000	6 000
• Analog messages			
- Number of analog messages	200	200	200
• Message buffer			
- Number of entries	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes

### Technical specifications

Article number	6AV2124-0UC24-0AX0 SIMATIC HMI TP1900 Comfort PRO	6AV2124-0UC24-0BX0 SIMATIC HMI TP1900 Comfort PRO	6AV2124-0UC24-1AX0 SIMATIC HMI TP1900 Comfort PRO
<b>Recipe management</b>			
• Number of recipes	500	500	500
• Size of internal recipe memory	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes
<b>Variables</b>			
• Number of variables per device	4 096	4 096	4 096
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	750	750	750
<b>Archiving</b>			
• Number of archives per device	50	50	50
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	Yes	Yes	Yes
<b>Logging through printer</b>			
• Alarms	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>			
• MPI/PROFIBUS DP	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes
<b>Process coupling</b>			
• S7-1200	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes
<b>Peripherals/Options</b>			
Printer	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
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes
Network camera	Yes	Yes	Yes
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	No	No	No
• Aluminum	Yes	Yes	Yes
• Stainless steel	No	No	No
<b>Dimensions</b>			
Width of the housing front	462 mm	462 mm	462 mm
Height of housing front	296 mm; Without basic adapter	296 mm; Without basic adapter	296 mm; Without basic adapter
Overall depth	101 mm; Without basic adapter	101 mm; Without basic adapter	101 mm; Without basic adapter
<b>Weights</b>			
Weight (without packaging)	7.4 kg	7.4 kg	7.4 kg

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	<b>6AV2124-0XC24-0AX0</b> SIMATIC HMI TP2200 Comfort PRO	<b>6AV2124-0XC24-0BX0</b> SIMATIC HMI TP2200 Comfort PRO	<b>6AV2124-0XC24-1AX0</b> SIMATIC HMI TP2200 Comfort PRO
<b>General information</b>			
Product type designation	TP2200 Comfort PRO	TP2200 Comfort PRO	TP2200 Comfort PRO
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	21.5 in	21.5 in	21.5 in
Number of colors	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>			
• Horizontal image resolution	1 920 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	1 080 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	30 000 h	30 000 h	30 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	0	0	0
<b>Touch operation</b>			
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
<b>Installation type/mounting</b>			
Mounting	Support arm	Support arm	Pedestal
Mounting in portrait format possible	No	No	No
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Memory</b>			
Memory available for user data	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>			
Acoustics			
• Speaker	Yes	Yes	Yes
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	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
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of SD card slots	2	2	2
<b>Industrial Ethernet</b>			
• Number of ports of the integrated switch	2	2	2
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
IRT	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	Yes	Yes	Yes

### Technical specifications

Article number	6AV2124-0XC24-0AX0	6AV2124-0XC24-0BX0	6AV2124-0XC24-1AX0
	SIMATIC HMI TP2200 Comfort PRO	SIMATIC HMI TP2200 Comfort PRO	SIMATIC HMI TP2200 Comfort PRO
<b>Degree and class of protection</b>			
NEMA (front)			
• Enclosure Type 4x at the front	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No; Available soon	No; Available soon	No; Available soon
EAC (formerly Gost-R)	No; Available soon	No; Available soon	No; Available soon
<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
- For vertical installation, max.	45 °C	45 °C	45 °C
<b>Relative humidity</b>			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	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
<b>Functionality under WinCC (TIA Portal)</b>			
Applications/options			
• Web browser	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes
Task planner			
• time-controlled	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes
<b>Message system</b>			
• Bit messages			
- Number of bit messages	6 000	6 000	6 000
• Analog messages			
- Number of analog messages	200	200	200
• Message buffer			
- Number of entries	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
<b>Recipe management</b>			
• Number of recipes	500	500	500
• Size of internal recipe memory	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	<b>6AV2124-0XC24-0AX0</b> SIMATIC HMI TP2200 Comfort PRO	<b>6AV2124-0XC24-0BX0</b> SIMATIC HMI TP2200 Comfort PRO	<b>6AV2124-0XC24-1AX0</b> SIMATIC HMI TP2200 Comfort PRO
<b>Variables</b>			
• Number of variables per device	4 096	4 096	4 096
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	750	750	750
<b>Archiving</b>			
• Number of archives per device	50	50	50
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	Yes	Yes	Yes
<b>Logging through printer</b>			
• Alarms	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>			
• MPI/PROFIBUS DP	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes
<b>Process coupling</b>			
• S7-1200	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes
<b>Peripherals/Options</b>			
Printer	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
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes
Network camera	Yes	Yes	Yes
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	No	No	No
• Aluminum	Yes	Yes	Yes
• Stainless steel	No	No	No
<b>Dimensions</b>			
Width of the housing front	527 mm	527 mm	527 mm
Height of housing front	330 mm; Without basic adapter	330 mm; Without basic adapter	330 mm; Without basic adapter
Overall depth	101 mm; Without basic adapter	101 mm; Without basic adapter	101 mm; Without basic adapter
<b>Weights</b>			
Weight (without packaging)	8.5 kg	8.5 kg	8.5 kg

## Overview



SIMATIC HMI TP1200 Comfort INOX PCT

### **SIMATIC HMI TP Comfort Panels INOX and INOX PCT (PCT = Projected Capacitive Touchscreen)**

Panels with touch screens (analog-resistive or projective-capacitive) and stainless steel fronts are designed for use in the food, beverages and tobacco industry, the pharmaceutical industry, fine chemicals and in other hygiene areas for machine-level operator control and monitoring.

For this reason, the devices with stainless steel front have been developed in compliance with EN 1672-2 "Food processing machinery – Safety and Hygiene Requirements".

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

## Ordering data

## Article No.

### **SIMATIC HMI TP Comfort Panel INOX**

*With analog-resistive touch and front film*

#### **SIMATIC HMI TP700 Comfort Panel INOX**

With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.

6AV2144-8GC10-0AA0

#### **SIMATIC HMI TP900 Comfort Panel INOX**

With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.

6AV2144-8JC10-0AA0

#### **SIMATIC HMI TP1200 Comfort Panel INOX**

With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.

6AV2144-8MC10-0AA0

### **SIMATIC HMI TP Comfort Panel INOX PCT**

*With projective-capacitive touch and front glass*

#### **SIMATIC HMI TP700 Comfort Panel INOX PCT**

Stainless steel front, glass pane, capacitive touch, IP69K degree of protection front, 7" widescreen TFT display, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0, Windows CE 6.0, WinCC Comfort V15.1

6AV2144-8GC20-0AA0

#### **SIMATIC HMI TP900 Comfort Panel INOX PCT**

With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.

6AV2144-8JC20-0AA0

#### **SIMATIC HMI TP1200 Comfort Panel INOX PCT**

With accessory pack consisting of: clamping frame, device seal, mounting clamps, connection terminal, as well as installation instructions.

6AV2144-8MC20-0AA0

### **Comfort Panels Large Front**

#### **SIMATIC HMI TP1200 Comfort INOX LF**

12" widescreen TFT display with long stainless steel front, decorative membrane, IP66K degree of protection front, PROFINET interface, MPI/PROFIBUS DP interface, 12 MB configuration memory, Windows CE 6.0 (Microsoft support including safety updates set), configurable as from WinCC Comfort V11 or higher

6AV2144-8MC10-0AC0

### **Accessories**

See "SIMATIC HMI operator control and monitoring systems" -> "Accessories"

The device seals can be replaced using the corresponding service packages from the accessories.



## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### Technical specifications

Article number	<b>6AV2144-8GC10-0AA0</b>	<b>6AV2144-8JC10-0AA0</b>	<b>6AV2144-8MC10-0AA0</b>
	SIMATIC HMI TP700 COMFORT INOX	SIMATIC HMI TP900 COMFORT INOX	SIMATIC HMI TP1200 COMFORT INOX
<b>General information</b>			
Product type designation	TP700 Comfort INOX	TP900 INOX	TP1200 Comfort INOX
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	7 in	9 in	12.1 in
Number of colors	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>			
• Horizontal image resolution	800 pixel	800 pixel	1 280 pixel
• Vertical image resolution	480 pixel	480 pixel	800 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	80 000 h	80 000 h	80 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	0	0	0
<b>Touch operation</b>			
• Design as touch screen	Yes	Yes	Yes
<b>Installation type/mounting</b>			
Mounting in portrait format possible	Yes	Yes	Yes
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Memory</b>			
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte
<b>Type of output</b>			
Acoustics			
• Speaker	Yes	Yes	Yes
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	1; 2 ports (switch)	1; 2 ports (switch)	1; 2 ports (switch)
Number of RS 485 interfaces	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined
Number of USB interfaces	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 SD card slots	2	2	2
<b>Industrial Ethernet</b>			
• Number of ports of the integrated switch	2	2	2
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
IRT	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12
PROFIBUS	Yes	Yes	Yes
MPI	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

### Technical specifications

Article number	<b>6AV2144-8GC10-0AA0</b> SIMATIC HMI TP700 COMFORT INOX	<b>6AV2144-8JC10-0AA0</b> SIMATIC HMI TP900 COMFORT INOX	<b>6AV2144-8MC10-0AA0</b> SIMATIC HMI TP1200 COMFORT INOX
<b>Degree and class of protection</b>			
NEMA (front)			
• Enclosure Type 4x at the front	Yes; indoor use only	Yes; indoor use only	Yes; indoor use only
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
FM approval	Yes		Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	Yes		Yes
EAC (formerly Gost-R)	Yes	Yes	Yes
<b>Use in hazardous areas</b>			
• ATEX Zone 2	Yes	Yes	Yes
• ATEX Zone 22	Yes	Yes	Yes
• IECEx Zone 2	Yes	Yes	Yes
• IECEx Zone 22	Yes	Yes	Yes
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes
• FM Class I Division 2	Yes	No	Yes
<b>Marine approval</b>			
• Germanischer Lloyd (GL)	No	No	No
• American Bureau of Shipping (ABS)	No	No	No
• Bureau Veritas (BV)	No	No	No
• Det Norske Veritas (DNV)	No	No	No
• Korean Register of Shipping (KRS)			No
• Lloyds Register of Shipping (LRS)	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
• Operation (vertical installation)			
- For vertical installation, min.	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C
<b>Relative humidity</b>			
• Operation, max.	90 %; no condensation	90 %; no condensation	80 %; no condensation
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	Yes; from V11	Yes; from V11	Yes; from V11
<b>Languages</b>			
<b>Online languages</b>			
• Number of online/runtime languages	32	32	32

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### Technical specifications

Article number	6AV2144-8GC10-0AA0	6AV2144-8JC10-0AA0	6AV2144-8MC10-0AA0
	SIMATIC HMI TP700 COMFORT INOX	SIMATIC HMI TP900 COMFORT INOX	SIMATIC HMI TP1200 COMFORT INOX
<b>Functionality under WinCC (TIA Portal)</b>			
Applications/options			
• Web browser	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes
Task planner			
• time-controlled	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes
<b>Message system</b>			
• Bit messages			
- Number of bit messages	4 000	4 000	4 000
• Analog messages			
- Number of analog messages	200	200	200
• Message buffer			
- Number of entries	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
<b>Recipe management</b>			
• Number of recipes	300	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes	Yes
<b>Variables</b>			
• Number of variables per device	2 048	2 048	2 048
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	500	500	500
<b>Archiving</b>			
• Number of archives per device	50	50	50
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	Yes	Yes	Yes
<b>Logging through printer</b>			
• Alarms	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>			
• MPI/PROFIBUS DP	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes

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### Technical specifications

Article number	6AV2144-8GC10-0AA0	6AV2144-8JC10-0AA0	6AV2144-8MC10-0AA0
	SIMATIC HMI TP700 COMFORT INOX	SIMATIC HMI TP900 COMFORT INOX	SIMATIC HMI TP1200 COMFORT INOX
<b>Process coupling</b>			
• S7-1200	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes
<b>Peripherals/Options</b>			
Printer	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
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes
Network camera	Yes	Yes	Yes
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	No	No	No
• Aluminum	No	No	No
• Stainless steel	Yes	Yes	Yes
<b>Dimensions</b>			
Width of the housing front	214 mm	274 mm	330 mm
Height of housing front	158 mm	190 mm	241 mm
Mounting cutout, width	197 mm	250 mm	310 mm
Mounting cutout, height	141 mm	166 mm	221 mm
Overall depth	65 mm	65 mm	67 mm
<b>Weights</b>			
Weight (without packaging)	1.9 kg	2.5 kg	3.6 kg

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels INOX and INOX PCT

#### Technical specifications

Article number	<b>6AV2144-8GC20-0AA0</b> SIMATIC HMI TP700 Comfort INOX PCT	<b>6AV2144-8JC20-0AA0</b> SIMATIC HMI TP900 COMFORT INOX PCT	<b>6AV2144-8MC20-0AA0</b> SIMATIC HMI TP1200 COMFORT INOX PCT
<b>General information</b>			
Product type designation	TP700 Comfort INOX PCT	TP900 Comfort INOX PCT	TP1200 Comfort INOX PCT
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	7 in	9 in	12.1 in
Number of colors	16 777 216	16 777 216	16 777 216
<b>Resolution (pixels)</b>			
• Horizontal image resolution	800 pixel	800 pixel	1 280 pixel
• Vertical image resolution	480 pixel	480 pixel	800 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	80 000 h	80 000 h	80 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	0	0	0
<b>Touch operation</b>			
• Design as touch screen	Yes	Yes	Yes
• Design as multi-touch screen	No	No	No
• Monitor keyboard	Yes	Yes	Yes
<b>Installation type/mounting</b>			
Mounting in portrait format possible	No	Yes	Yes
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Memory</b>			
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte
<b>Type of output</b>			
Acoustics	Speaker	Speaker	Speaker
• Speaker	Yes	Yes	Yes
<b>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	1; 2 ports (switch)	1; 2 ports (switch)	1; 2 ports (switch)
Number of RS 485 interfaces	1; RS 422 / 485 combined	1; RS 422 / 485 combined	1; RS 422 / 485 combined
Number of USB interfaces	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 SD card slots	2	2	2
<b>Industrial Ethernet</b>			
• Number of ports of the integrated switch	2	2	2
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
IRT	Yes; As of WinCC V15.1	Yes; As of WinCC V15	Yes; As of WinCC V15
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	Yes; As of WinCC V15.1	Yes; As of WinCC V15	Yes; As of WinCC V15

### Technical specifications

Article number	<b>6AV2144-8GC20-0AA0</b> SIMATIC HMI TP700 Comfort INOX PCT	<b>6AV2144-8JC20-0AA0</b> SIMATIC HMI TP900 COMFORT INOX PCT	<b>6AV2144-8MC20-0AA0</b> SIMATIC HMI TP1200 COMFORT INOX PCT
<b>Degree and class of protection</b>			
IP (at the front)	IP66 / IPx6K and IP69 / IPx9K	IP66 / IPx6K and IP69 / IPx9K	IP66 / IPx6K and IP69 / IPx9K
NEMA (front)			NEMA 4, NEMA 12 (when installed)
• Enclosure Type 4x at the front		No	Yes
• Enclosure Type 12 at the front	No	No	Yes
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No	No	No
EAC (formerly Gost-R)	Yes	Yes	Yes
<b>Use in hazardous areas</b>			
• ATEX Zone 2	Yes	Yes	Yes
• ATEX Zone 22	Yes	Yes	Yes
• IECEx Zone 2	Yes	Yes	Yes
• IECEx Zone 22	Yes	Yes	Yes
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes
• cULus Class II Division 2	No	No	No
• FM Class I Division 2	No	No	No
• FM Class II Division 2	No	No	No
<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)	0 to +50 °C	0 to +50 °C	0 to +50 °C
- For vertical installation, min.	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
<b>Altitude during operation relating to sea level</b>			
• Installation altitude above sea level, max.	2 000 m	2 000 m	2 000 m
<b>Relative humidity</b>			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	Yes; From WinCC V15.1 HSP	Yes; As of WinCC V15	Yes; As of WinCC V15
<b>Languages</b>			
<b>Online languages</b>			
• Number of online/runtime languages	32	32	32

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels INOX and INOX PCT

#### Technical specifications

Article number	<b>6AV2144-8GC20-0AA0</b> SIMATIC HMI TP700 Comfort INOX PCT	<b>6AV2144-8JC20-0AA0</b> SIMATIC HMI TP900 COMFORT INOX PCT	<b>6AV2144-8MC20-0AA0</b> SIMATIC HMI TP1200 COMFORT INOX PCT
<b>Functionality under WinCC (TIA Portal)</b>			
Applications/options	Internet Explorer, PDF/Word/Excel Viewer, Sm@rtService, Sm@rtAccess, ProAgent	Internet Explorer, PDF/Word/Excel Viewer, Sm@rtService, Sm@rtAccess, ProAgent	Internet Explorer, PDF/Word/Excel Viewer, Sm@rtService, Sm@rtAccess, ProAgent
• Web browser	Yes	Yes	Yes
• Pocket Word	Yes; Viewer	Yes; Viewer	Yes; Viewer
• Pocket Excel	Yes; Viewer	Yes; Viewer	Yes; Viewer
• PDF Viewer	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes
Task planner	Yes	Yes	Yes
• time-controlled	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes
<b>Message system</b>			
• Bit messages			
- Number of bit messages	4 000	4 000	4 000
• Analog messages			
- Number of analog messages	200	200	200
• Message buffer	Ring buffer (n x 1024 entries), retentive, maintenance-free	Ring buffer (n x 1024 entries), retentive, maintenance-free	Ring buffer (n x 1024 entries), retentive, maintenance-free
- Number of entries	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes
- retentive	Yes	Yes	Yes
<b>Recipe management</b>			
• Number of recipes	300	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes	Yes
<b>Variables</b>			
• Number of variables per device	2 048	2 048	2 048
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	500	500	500
<b>Archiving</b>			
• Number of archives per device	50	50	50
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	Yes	Yes	Yes
<b>Logging through printer</b>			
• Alarms	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes
• Electronic print to file	No	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>			
• MPI/PROFIBUS DP	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes

### Technical specifications

Article number	<b>6AV2144-8GC20-0AA0</b> SIMATIC HMI TP700 Comfort INOX PCT	<b>6AV2144-8JC20-0AA0</b> SIMATIC HMI TP900 COMFORT INOX PCT	<b>6AV2144-8MC20-0AA0</b> SIMATIC HMI TP1200 COMFORT INOX PCT
<b>Process coupling</b>			
• S7-1200	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes
<b>Peripherals/Options</b>			
Printer	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
SIMATIC HMI SD memory card: Secure Digital memory card	Yes; Up to 2 GB	Yes; Up to 2 GB	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes
Network camera	Yes	Yes	Yes
<b>Accessories</b>			
Further accessories are available	Yes; Service Pack (seal, mounting clips, clamping frame, power supply connector)	Yes; Service Pack (seal, mounting clips, clamping frame, power supply connector)	Yes; Service Pack (seal, mounting clips, clamping frame, power supply connector)
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	No	No	No
• Aluminum	No	No	No
• Stainless steel	Yes	Yes	Yes
<b>Dimensions</b>			
Width of the housing front	214 mm	274 mm	330 mm
Height of housing front	158 mm	190 mm	241 mm
Mounting cutout, width	197 mm	251 mm	310 mm
Mounting cutout, height	141 mm	166 mm	221 mm
Overall depth	66 mm	66 mm	65 mm
<b>Weights</b>			
Weight (without packaging)	2 kg	2.9 kg	4.2 kg



## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels INOX and INOX PCT

#### Technical specifications

Article number	<b>6AV2144-8MC10-0AC0</b> SIMATIC HMI TP1200 COMFORT INOX LF
<b>General information</b>	
Product type designation	TP1200 Comfort INOX LF
<b>Display</b>	
Design of display	TFT
Screen diagonal	12.1 in
Number of colors	16 777 216
<b>Resolution (pixels)</b>	
• Horizontal image resolution	1 280 pixel
• Vertical image resolution	800 pixel
<b>Backlighting</b>	
• MTBF backlighting (at 25 °C)	80 000 h
<b>Control elements</b>	
<b>Keyboard fonts</b>	
• Function keys	
- Number of function keys	0
<b>Touch operation</b>	
• Design as touch screen	Yes
<b>Installation type/mounting</b>	
Mounting in portrait format possible	Yes
<b>Supply voltage</b>	
Rated value (DC)	24 V
<b>Memory</b>	
Memory available for user data	12 Mbyte
<b>Type of output</b>	
Acoustics	
• Speaker	Yes
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time)	Yes
• retentive	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	1; 2 ports (switch)
Number of RS 485 interfaces	1; RS 422 / 485 combined
Number of USB interfaces	2; USB 2.0
• USB Mini B	1; 5-pole
Number of SD card slots	2
<b>Industrial Ethernet</b>	
• Number of ports of the integrated switch	2
<b>Protocols</b>	
PROFINET	Yes
IRT	Yes; As of WinCC V12
PROFIBUS	Yes
MPI	Yes
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
- MRP	Yes; As of WinCC V12

Article number	<b>6AV2144-8MC10-0AC0</b> SIMATIC HMI TP1200 COMFORT INOX LF
<b>Degree and class of protection</b>	
NEMA (front)	
• Enclosure Type 4x at the front	Yes; indoor use only
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	No
KC approval	No
EAC (formerly Gost-R)	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 2, Division 2	Yes
• FM Class I Division 2	No
<b>Marine approval</b>	
• Germanischer Lloyd (GL)	No
• American Bureau of Shipping (ABS)	No
• Bureau Veritas (BV)	No
• Det Norske Veritas (DNV)	No
• Korean Register of Shipping (KRS)	No
• Lloyds Register of Shipping (LRS)	No
• Nippon Kaiji Kyokai (Class NK)	No
• 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.	80 %; no condensation
<b>Configuration</b>	
<b>Configuration software</b>	
• WinCC Comfort (TIA Portal)	Yes; from V11
<b>Languages</b>	
<b>Online languages</b>	
• Number of online/runtime languages	32

### Technical specifications

Article number	6AV2144-8MC10-0AC0 SIMATIC HMI TP1200 COMFORT INOX LF
<b>Functionality under WinCC (TIA Portal)</b>	
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
<b>Message system</b>	
• Bit messages	
- Number of bit messages	4 000
• Analog messages	
- Number of analog messages	200
• Message buffer	
- Number of entries	1 024
- Circulating buffer	Yes
- retentive	Yes
<b>Recipe management</b>	
• Number of recipes	300
• Size of internal recipe memory	2 Mbyte
• Recipe memory expandable	Yes
<b>Variables</b>	
• Number of variables per device	2 048
• Number of variables per screen	400
<b>Images</b>	
• Number of configurable images	500
<b>Archiving</b>	
• Number of archives per device	50
<b>Security</b>	
• Number of user groups	50
• Number of users	50
• SIMATIC Logon	Yes
<b>Logging through printer</b>	
• Alarms	Yes
• Report (shift log)	Yes
• Hardcopy	Yes
• Electronic print to file	Yes; PDF, HTML
<b>Transfer (upload/download)</b>	
• MPI/PROFIBUS DP	Yes
• Ethernet	Yes

Article number	6AV2144-8MC10-0AC0 SIMATIC HMI TP1200 COMFORT INOX LF
<b>Process coupling</b>	
• S7-1200	Yes
• S7-1500	Yes
• S7-200	Yes
• S7-300/400	Yes
• LOGO!	Yes
• WinAC	Yes
• 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>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
USB memory	Yes
Network camera	Yes
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	No
• Aluminum	No
• Stainless steel	Yes
<b>Dimensions</b>	
Width of the housing front	330 mm
Height of housing front	269 mm
Mounting cutout, width	310 mm
Mounting cutout, height	248 mm
Overall depth	67 mm
<b>Weights</b>	
Weight (without packaging)	4.2 kg

### More information:

#### Customer-specific modifications

- Customized design (logo, type designation and background color)
- Protection against condensation and corrosive gases

More information is available on the Internet at:

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