

## Operator panels



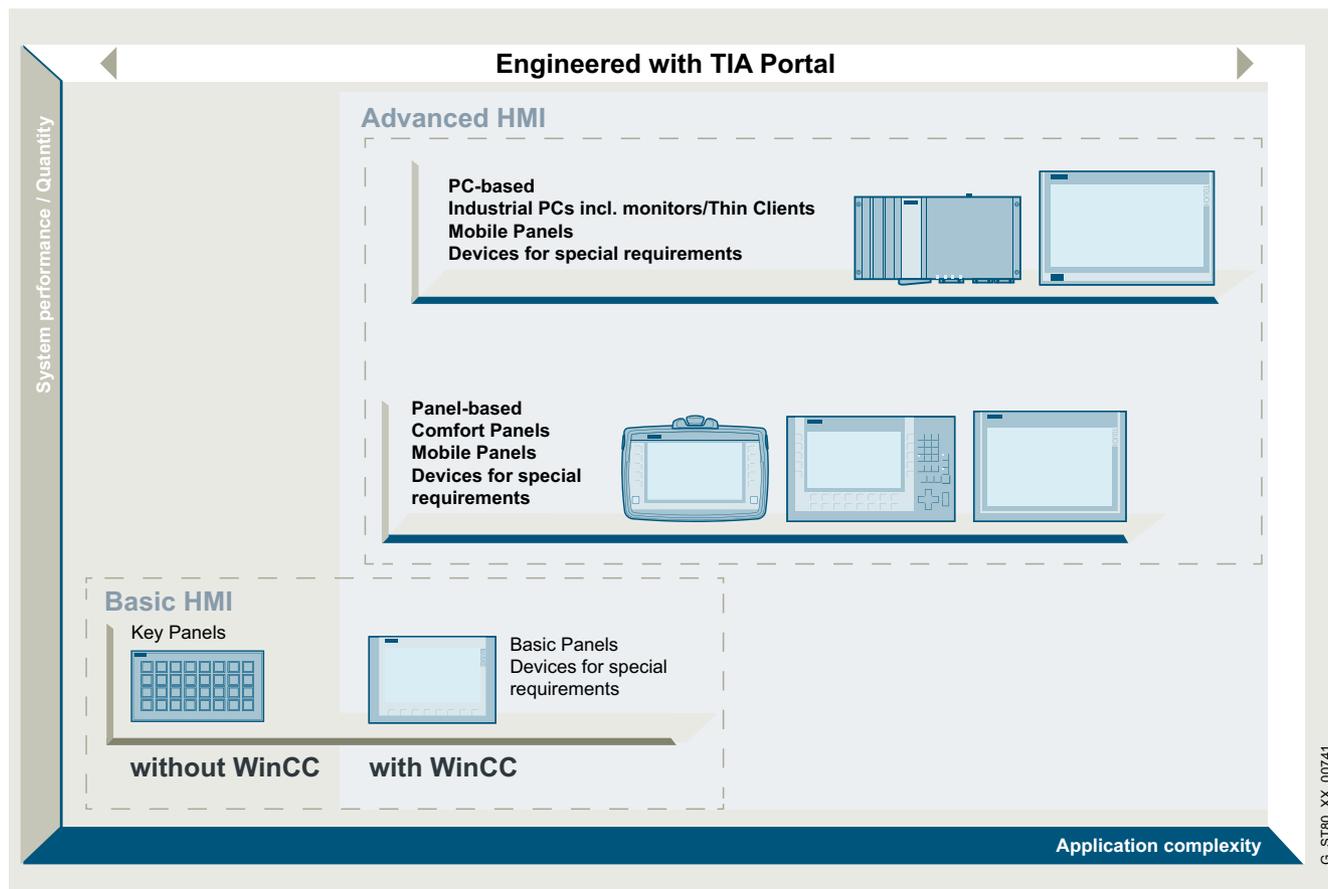
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# Operator panels

## Introduction

### HMI devices

#### Overview



#### **SIMATIC HMI Panels – HMI devices for efficient machine-level interaction**

A complete range of powerful and innovative operator control and monitoring devices is available for implementing efficient, machine-level HMI solutions in the most diverse applications and industries. One unique and highly efficient feature is the integrated configuring via SIMATIC WinCC in the TIA Portal, with which users can achieve significant savings with regard to engineering time, costs and effort.

More information is available at <http://www.siemens.com/hmi-panels>

#### Basic HMI

- **Panel-based:**  
HMI devices with excellent price-performance ratio for simple visualization tasks.

More information is available at <http://www.siemens.com/basic-hmi>

#### Advanced HMI

- **Panel-based:**  
Powerful HMI devices for demanding visualization tasks with a high level of convenience.

More information is available at <http://www.siemens.com/advanced-hmi-panel>

- **PC-based:**  
High-performance HMI devices for data-intensive and complex visualization tasks.

More information is available at <http://www.siemens.com/advanced-hmi-pc>

#### **Rugged and compact for use at machine level**

With IP65/NEMA 4 degree of protection on the front side, high EMC and extreme vibration resistance, the SIMATIC HMI devices are ideally suited for use at the machine level in harsh industrial environments. Thanks to their compact design with a shallow mounting depth, the stationary HMI devices can be fitted anywhere, even where only restricted space is available. For distributed configurations, there are also devices available with all-round IP65/NEMA 4 protection.

The extremely rugged and shock-proof enclosure with degree of protection IP65 makes the Mobile Panels especially suitable for industrial applications. Their low weight and ergonomic design means that they are user-friendly and easy to operate.

#### **One configuration software for everything**

SIMATIC WinCC (TIA Portal) is a tool for the uniform configuration of all SIMATIC HMI Panels as well as PC-based systems. Graded variants are available for every task. The software permits simple and efficient configuration. Programming experience is not required.

Once created, configurations can be reused within the family. Key Panels only need to be configured, not programmed.

# Operator panels

## Introduction

### HMI devices

#### Overview

##### Component of Totally Integrated Automation

Siemens provides the complete modular system of matched components for automation solutions from one source and — with Totally Integrated Automation — one of the most globally successful automation concepts. SIMATIC WinCC (TIA Portal) is an integral component of this world. It offers crucial advantages. Thanks to the triple uniformity in configuration/programming, data management and communication, automation solution engineering costs are significantly reduced.

##### Open for a wide variety of automation systems

Despite being consistently incorporated into the SIMATIC world, the panels are nevertheless open for connection to PLCs from many different manufacturers. The standard delivery includes a comprehensive range of user-friendly drivers.

##### Innovative operator control and monitoring

SIMATIC HMI Panels facilitate innovative operator control and monitoring combined with ruggedness, stability and simplicity. On the Comfort Panels in particular, standard hardware and software interfaces, e.g. the MultiMediaCard/SD card, USB, Ethernet, PROFINET, PROFIBUS DP and Visual Basic scripts, provide more flexibility and openness as well as access to the office world.

##### Worldwide application

The SIMATIC HMI Panels are ideally equipped for global use. Online language switching permits selection of up to 32 languages during operation simply by pressing a button. The wide variety of languages available also includes, for example, Asian logographic languages (Chinese, Taiwanese, Korean, Japanese) and Russian. The configuration interface of WinCC (TIA Portal) including the online help and the complete documentation is also multilingual. Up to 32 languages can be used in one project. And all this is complemented by global service and support from Siemens.

#### Configuration at a glance

Engineering software	WinCC Unified (TIA Portal)		WinCC (TIA Portal) engineering software			STEP 7	
	Comfort	PC	Basic	Comfort	Advanced	Professional	STEP 7
<b>Key Panels</b>	-	-	-	-	-	-	•
<b>Basic Panels 2<sup>nd</sup> Generation <sup>1)</sup></b>	•	•	•	•	•	•	-
<b>Basic Panels 1<sup>st</sup> Generation</b>	-	-	•	•	•	•	-
<b>Comfort Panels</b>	•	•	-	• <sup>3)</sup>	•	•	-
<b>Unified Comfort Panels</b>	•	•	-	-	-	-	-
<b>Mobile Panels 2<sup>nd</sup> Generation</b>	•	•	-	• <sup>2)</sup>	• <sup>2)</sup>	• <sup>2)</sup>	-
<b>Mobile Panels x77 Series</b>	-	-	-	•	•	•	-

• Possible

<sup>1)</sup> As of WinCC (TIA Portal) V13

<sup>2)</sup> As of WinCC (TIA Portal) V13 SP1

<sup>3)</sup> Outdoor versions from WinCC (TIA Portal) V13 SP1, Update 6 and HSP (download), or Comfort Panels 15" - 22" (-0AX1) from V14 SP1 HSP

# Operator panels

## Introduction

### HMI devices

#### Overview

	WinCC flexible engineering software			
	Micro	Compact	Standard	Advanced
<b>Key Panels</b>	-	-	-	-
<b>Basic Panels (1<sup>st</sup> Generation)</b>				
KTP400 Basic mono PN	-	•	•	•
KTP600 Basic	-	•	•	•
KTP1000 Basic	-	•	•	•
TP1500 Basic	-	•	•	•
<b>Mobile Panels</b>				
Mobile Panel 177	-	•	•	•
Mobile Panel 277	-	-	•	•
Mobile Panel 277(F) IWLAN	-	-	•	•
<b>Micro Panels</b>				
OP 73micro	•	•	•	•
TP 177micro	•	•	•	•
<b>Panels – 70 Series</b>				
OP 73	-	•	•	•
OP 77A/B	-	•	•	•
<b>Panels – 170 Series</b>				
TP 177A	-	•	•	•
TP/OP 177B	-	• 1)	• 1)	• 1)
<b>Panels – 270 Series</b>				
TP 277/OP 277	-	-	• 2)	• 2)
<b>Multi Panels – 170 Series</b>				
MP 177	-	• 5)	• 4)	• 4)
<b>Multi Panels – 270 Series</b>				
MP 277	-	-	•	•
<b>Panels – 370 Series</b>				
MP 377	-	-	• 3)	• 3)
<b>WinAC MP</b>				
WinAC MP 177	-	• 5)	• 5)	• 5)
WinAC MP 277	-	-	• 5)	• 5)
WinAC MP 377	-	-	• 5)	• 5)

• Possible

1) WinCC flexible 2005 or higher and TP 177B 4" with WinCC flexible 2008 and higher

2) WinCC flexible 2005 SP1 and higher

3) WinCC flexible 2007 and higher: Mobile Panel 277(F) IWLAN V1;  
WinCC flexible 2008 SP2 and higher: Mobile Panel 277(F) IWLAN V2

4) WinCC flexible 2008 and higher

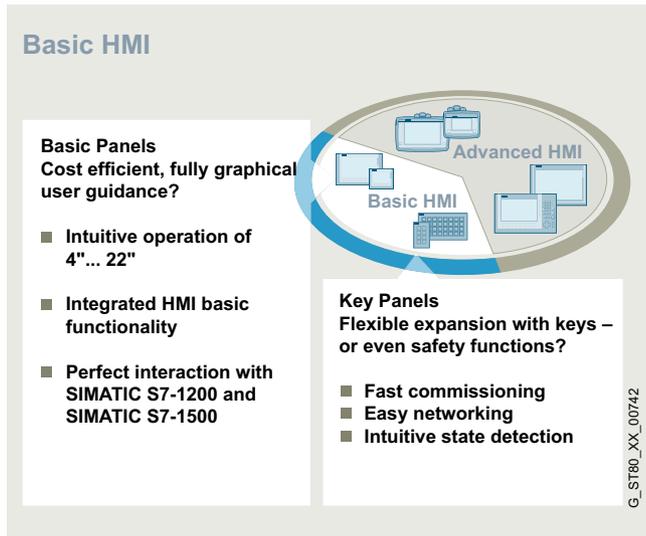
5) WinCC flexible 2008 SP1 and higher

# Operator panels

## Basic HMI

### Introduction

#### Overview



#### ***Inexpensive realization of simple HMI tasks***

Basic HMI is recommended for simple applications with a limited quantity structure, where the price-performance ratio counts as well as fast, intuitive operation.

The devices offer a brilliant display quality and high-power visualization, which significantly simplifies the operation of simple machines and equipment.

You can also save valuable time during installation, commissioning and engineering with turnkey and flexible solutions.

#### SIMATIC HMI Key Panels

You can use the Key Panels to realize operator panels quickly, as well as save a lot of time and money setting them up since they are prefabricated and ready for installation.

All illuminated pushbuttons are freely configurable and equipped with five colored LEDs (red, green, blue, yellow and white). All buttons can also easily be inscribed in IP65. On the back, there are integrated IO terminals for connecting actuators and sensors.

#### SIMATIC HMI Basic Panels

Basic Panels are perfect for the cost-effective implementation of simple visualization tasks at machine level. Their basic features and functionality as well as the especially attractive price make them perfect entry-level devices.

The following modules are available:

- Key Panels
  - SIMATIC HMI KP8/KP8F/KP32F (key devices with multi-colored LEDs)
- Basic Panels
  - Standard devices 2<sup>nd</sup> Generation
  - Standard devices 1<sup>st</sup> Generation

## Operator panels

### Basic HMI

#### Key Panels

##### Overview

##### **SIMATIC HMI Key Panels**

The Key Panels, PROFINET successors to the PROFIBUS-based Pushbutton Panels, are operator panels which are ready-to-run without any configuration effort at all.

Alternatives to individually wired long-stroke keys. They are designed for direct operator control of the machine.

Key Panels provide many basic functions for direct operator control and monitoring instead of machine operator control, a cost-effective, versatile and space-saving combination, and they reduce configuration and installation costs to a minimum. Furthermore, additional actuators and sensors can also be optionally connected directly on the rear of the devices. For applications directly next to a monitor, a very slim KP8 option is available (KP8 PN LX with 8 keys on top of each other).

The Key Panels can be used directly in line and ring topologies thanks to an integrated switch and two RJ45 PN sockets.

In addition there are two fully configured IP65 installation enclosures for KP8(F) available.

Exact cutouts included. Even supply cables with plugs can easily be connected in IP65 without any drilling or milling. These ready-made enclosures can be used as small local operator stations.

They can be found under Accessories -> Fixing elements, and depending on the option can come supplied with features such as emergency off pushbuttons.

- SIMATIC HMI blank front design
- SIMATIC HMI KP8 PN
- SIMATIC HMI KP8 PN LX
- SIMATIC HMI KP8F PN (shared device with GSD file possible)
- SIMATIC HMI KP32F PN (PROFIsafe can be switched off)
- Installation enclosure KP8 (Accessories -> Fixing elements)
- Installation enclosure KP8F (Accessories -> Fixing elements)

More information is available at

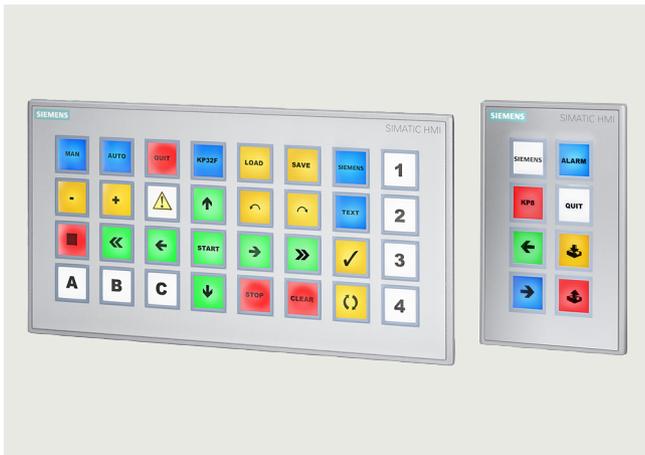
<http://www.siemens.com/key-panels>

## Operator panels

Basic HMI  
Key Panels

### SIMATIC HMI KP8/KP8F/KP32F

#### Overview



SIMATIC HMI KP8 PN LX, 8 short-stroke keys, long, 1–6 mm sheet thickness, PN interfaces, black neutral design, 8 configurable DI/DQ pins



Key Panel, blank front, at the front, populated



Key Panel, blank front, at the back, not populated

#### **SIMATIC HMI Key Panels**

- Optimum operability thanks to large mechanical keys and multi-colored LED backlighting (daylight readable)
- Over 60% time savings for wiring and installation (Plug&Play)
- More than 30% savings in material costs compared to conventional keypad operator panels
- 2 PROFINET ports (incl. switch) already integrated for setting up line and ring topologies
- Freely configurable digital I/Os on the rear for connecting key-operated switches, indicator lights, etc.
- Connection of fail-safe emergency stop buttons or other fail-safe signals with KP8F and KP32F (in SIL2 or SIL3)
- Functionally compatible with all standard PROFINET master CPUs, also non-Siemens
- KP8 PN LX is suitable for direct installation next to monitors
- KP8 and blank front design, also optimized for installation in IPC Extension Units in IP65
- Maximum flexibility due to parameterization
- Blank front design for standardized assembly of flexible operator panels
- Installation enclosure, fully-enclosed IP65, no drilling or milling necessary, KP8(F) not included; for accessories see technical specifications for installation enclosure

## Operator panels

Basic HMI  
Key Panels

### SIMATIC HMI KP8/KP8F/KP32F

Ordering data	Article No.
<b>SIMATIC HMI KP8 PN</b> Key Panel, 8 short-stroke keys with multi-colored LEDs, PROFINET interfaces, 2 x parameterizable with STEP 7 V5.5 or higher SIEMENS Design (4 x 2 pairs of keys)	<b>6AV3688-3AY36-0AX0</b>
<b>SIMATIC HMI KP8 PN LX</b> Neutral design black LX (8 keys on top of each other); Short-stroke keys long, 1-6 mm sheet thickness, PN interfaces, 8 configurable DI/DO pins, 24 V DC can be looped through, parameterizable with STEP 7 V5.5 or higher	<b>6AV2127-1AB00-0LX1</b>
<b>SIMATIC HMI KP8F PN</b> Key Panel, 8 short-stroke keys with multi-colored LEDs, PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; 4 additional fail-safe inputs. Can be used as 2 x SIL 2 or 1 x SIL 3 <ul style="list-style-type: none"> <li>• SIEMENS design</li> <li>• As neutral design without Siemens imprint</li> <li>• Blank front design for standard 22.5 mm operator controls, same mounting dimensions as KP8</li> </ul>	<b>6AV3688-3AF37-0AX0</b>  <b>6AV3688-3XY38-3AX0</b>
<b>SIMATIC HMI KP32F PN</b> Key Panel, SIEMENS design; 32 short-stroke keys with multi-colored LEDs, PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; including 8 fail-safe inputs. Can be used as 4 x SIL 2 or 2 x SIL 3	<b>6AV3688-3EH47-0AX0</b>
<b>Documentation</b> You can find the Equipment Manual for the Key Panels on the internet at:	<a href="http://support.automation.siemens.com/WW/view/en/56652789">http://support.automation.siemens.com/WW/view/en/56652789</a>
<b>Accessories</b>	See "SIMATIC HMI operator control and monitoring systems" -> "Accessories"

Technical specifications		
Article number	<b>6AV3688-3AY36-0AX0</b>	<b>6AV2127-1AB00-0LX1</b>
	SIMATIC HMI KP8 PN	SIMATIC HMI KP8 PN LX 6mm
<b>General information</b>		
Product type designation	KP8 PN	Key Panel KP8 PN LX (1 ... 6 mm)
<b>Control elements</b>		
With parameterizable keys	Yes	Yes
<b>Keyboard fonts</b>		
<ul style="list-style-type: none"> <li>• Membrane keyboard</li> <li>- user-definable label membrane keys</li> </ul>	Yes	No; possible via adjacent display with L-pattern at key edge
<ul style="list-style-type: none"> <li>• Function keys</li> <li>- Number of function keys</li> </ul>	8	8; 19 x 19 mm per button
<ul style="list-style-type: none"> <li>• Short-stroke keys</li> <li>- Number of short-stroke keys</li> </ul>	8	8
<b>Expansions for operator control of the process</b>		
<ul style="list-style-type: none"> <li>• DP direct LEDs (LEDs as S7 output I/O)</li> </ul>	8; Adjustable brightness	8; Adjustable brightness
<ul style="list-style-type: none"> <li>• Number of color modes for LED</li> </ul>	5; red, green, blue, yellow, white	5; red, green, blue, yellow, white
<ul style="list-style-type: none"> <li>• Direct keys (keys as S7 input I/O)</li> </ul>	8	8
<b>Installation type/mounting</b>		
Mounting type	Clamp terminals	clamp fastening with additional mounting clips
Front mounting	Yes; Compatible with Extension Units dimensions	Yes; mounting clip - Torx T20 tighten to 0.2 Nm; enclosure - Torx T10 tighten to 0.2 Nm
Rail mounting	No	No
Mounting in portrait format possible	Yes	Yes
Mounting in landscape format possible	Yes	Yes
maximum permissible angle of inclination without external ventilation	30°; To the front/rear	30°; To the front/rear
Number of slots for command devices and signaling units	0	0
<b>Supply voltage</b>		
Rated value (DC)	24 V; 24 V looped through at connector, no interruption on pulling	
<b>Digital inputs</b>		
Number of digital inputs	8; Max. 8 inputs and outputs (total)	
<b>Input voltage</b>		
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V	24 V

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# Operator panels

Basic HMI  
Key Panels

## SIMATIC HMI KP8/KP8F/KP32F

### Technical specifications

Article number	6AV3688-3AY36-0AX0 SIMATIC HMI KP8 PN	6AV2127-1AB00-0LX1 SIMATIC HMI KP8 PN LX 6mm
<b>Digital outputs</b>		
Number of digital outputs	8; Max. 8 inputs and outputs (total)	
Short-circuit protection	Yes	Yes
<b>Switching capacity of the outputs</b>		
• with resistive load, max.	100 mA	100 mA
<b>Output voltage</b>		
• Rated value (DC)	24 V; Non-isolated	24 V; Non-isolated
<b>Total current of the outputs</b>		
• Current per channel, max.	100 mA	100 mA
• Current per group, max.	800 mA	800 mA
<b>Interfaces</b>		
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch	2; Incl. switch
<b>Industrial Ethernet</b>		
• Number of ports of the integrated switch	2; Per port	2; Per port
<b>Protocols</b>		
PROFINET	Yes; also 3rd party PLC	Yes; also 3rd party PLC
PROFINET CBA	No	No
IRT	Yes	Yes
PROFIsafe	No	No
PROFIBUS	No	No
<b>Redundancy mode</b>		
<b>Media redundancy</b>		
- MRP	Yes	Yes
<b>Test commissioning functions</b>		
Illuminant test	Yes; During switch on	Yes; During switch on
Key and signal lamp test	Yes; automatically when switching on	Yes; automatically when switching on
<b>Degree and class of protection</b>		
IP (at the front)	IP65	IP64
IP (rear)	IP20	IP20
NEMA (front)		
• Enclosure Type 4x at the front	Yes; Incl. NEMA12	No
• Enclosure Type 12 at the front		No

Article number	6AV3688-3AY36-0AX0 SIMATIC HMI KP8 PN	6AV2127-1AB00-0LX1 SIMATIC HMI KP8 PN LX 6mm
<b>Standards, approvals, certificates</b>		
CE mark	Yes	Yes
CSA approval		No
UL approval		No
cULus	Yes	No
FM approval		No
RCM (formerly C-TICK)	Yes	No
KC approval	Yes	No
EAC (formerly Gost-R)		No
CCC		No; not necessary
Suitable for safety functions	No	No
Marine approval		No
<b>Use in hazardous areas</b>		
• ATEX Zone 2	Yes	No
• ATEX Zone 22	Yes	No
• cULus Class I Zone 2, Division 2	Yes	No
• FM Class I Division 2	Yes	No
<b>Ambient conditions</b>		
<b>Ambient temperature during operation</b>		
• min.	0 °C	0 °C
• max.	55 °C	60 °C
<b>Relative humidity</b>		
• Operation, max.	95 %; no condensation	95 %; no condensation
<b>Configuration</b>		
<b>Configuration software</b>		
• STEP 7 Basic (TIA Portal)	Yes	Yes
• STEP 7 Professional (TIA Portal)	Yes	Yes
<b>Functionality under WinCC (TIA Portal)</b>		
<b>Process coupling</b>		
• S7-1200	Yes; with ET 200pro CPU and ET 200S CPU	Yes; with ET 200pro CPU and ET 200S CPU
• S7-1500	Yes	Yes
• S7-200	No	No
• S7-300/400	Yes; STEP 7 or SIMATIC STEP 7 Basic V11 or higher	Yes; with F-CPU: STEP 7 V11 SP1 (or higher) and Safety V11 (or higher) or SIMATIC STEP 7 Basic V11 (or higher)
• LOGO!	No	No
• WinAC	Yes	Yes
• SIMOTION	No	No
• Allen Bradley (EtherNet/IP)	No	No
• Allen Bradley (DF1)	No	No
• Mitsubishi (MC TCP/IP)	No	No
• Mitsubishi (FX)	No	No
• OMRON (FINS TCP)	No	No
• OMRON (LINK/Multilink)	No	No
• Modicon (Modbus TCP/IP)	No	No
• Modicon (Modbus)	No	No

## Operator panels

Basic HMI  
Key Panels

### SIMATIC HMI KP8/KP8F/KP32F

#### Technical specifications

Article number	<b>6AV3688-3AY36-0AX0</b> SIMATIC HMI KP8 PN	<b>6AV2127-1AB00-0LX1</b> SIMATIC HMI KP8 PN LX 6mm
<b>Mechanics/material</b>		
Enclosure material (front)		Bayblend FR3010 enclosure, Autotex F150 front membrane
• Plastic	Yes	Yes; neutral enclosure, black RAL 9005
• Aluminum	No	No
<b>Service life</b>		
• Short-stroke keys (in switching cycles)	1 500 000	1 500 000
• LEDs (ON period)	100 %	100 %
<b>Dimensions</b>		
Width of the housing front	98 mm	40.7 mm
Height of housing front	155 mm	252.4 mm
Mounting cutout, width	67.7 mm; Max. thickness of mounting plate 2 - 6 mm	24 mm; tolerances +0.5 mm, not including connection plug (depending on connector type)
Mounting cutout, height	129.7 mm	244 mm; tolerances +0.5 mm, not including connection plug (depending on connector type)
Overall depth	49 mm; Incl. angled SIMATIC Ethernet connector	68.15 mm; mounting plate thickness max. 1 ... 6 mm
<b>Weights</b>		
Weight (without packaging)	270 g	297 g
<b>Other</b>		
Merchandise		Yes; KS28603
Manufacturer name		GETT Gerätetechnik GmbH
Manufacturer's address		Mittlerer Ring 1, 08233 Treuen (Vogtland), Germany
Note:		Key Panel must be configured as 6AV3688-3AY36-0AX0 Key Panel, compatible with 6AV2127-1AB00-0LX0

Article number	<b>6AV3688-3AF37-0AX0</b> SIMATIC HMI KP8F PN
<b>General information</b>	
Product type designation	KP8F PN
<b>Control elements</b>	
With parameterizable keys	Yes
<b>Keyboard fonts</b>	
• Membrane keyboard	
- user-definable label membrane keys	Yes
• Function keys	
- Number of function keys	8
• Short-stroke keys	
- Number of short-stroke keys	8
<b>Expansions for operator control of the process</b>	
• DP direct LEDs (LEDs as S7 output I/O)	8; Adjustable brightness
• Number of color modes for LED	5; red, green, blue, yellow, white
• Direct keys (keys as S7 input I/O)	8
<b>Installation type/mounting</b>	
Mounting type	Mounting clip
Front mounting	Yes; Compatible with Extension Units dimensions
Rail mounting	No
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
maximum permissible angle of inclination without external ventilation	30°; To the front/rear
Number of slots for command devices and signaling units	0
<b>Supply voltage</b>	
Rated value (DC)	24 V; 24 V can be looped through connector, interrupted when pulled
<b>Digital inputs</b>	
Number of digital inputs	8; total inputs and outputs max. 8 and 2x SIL 2 or 1x SIL 3
<b>Input voltage</b>	
• Rated value (DC)	24 V

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# Operator panels

## Basic HMI Key Panels

### SIMATIC HMI KP8/KP8F/KP32F

#### Technical specifications

Article number	<b>6AV3688-3AF37-0AX0</b> SIMATIC HMI KP8F PN
<b>Digital outputs</b>	
Number of digital outputs	8; Max. 8 inputs and outputs (total)
Short-circuit protection	Yes
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	100 mA
<b>Output voltage</b>	
• Rated value (DC)	24 V; Non-isolated
<b>Total current of the outputs</b>	
• Current per channel, max.	100 mA
• Current per group, max.	800 mA
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch
<b>Industrial Ethernet</b>	
• Number of ports of the integrated switch	2; Per port
<b>Protocols</b>	
PROFINET	Yes; also 3rd party PLC
PROFINET CBA	No
IRT	Yes
PROFIsafe	Yes; 1x SIL 3 (two-channel) or 2x SIL 2 (single-channel) emergency stop sensors
PROFIBUS	No
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
- MRP	Yes
<b>Test commissioning functions</b>	
Illuminant test	Yes; During switch on
Key and signal lamp test	Yes; automatically when switching on
<b>Degree and class of protection</b>	
IP (at the front)	IP65
IP (rear)	IP20
NEMA (front)	
• Enclosure Type 4x at the front	Yes; Incl. NEMA12
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
CCC	No; not necessary
Suitable for safety functions	Yes
<b>Use in hazardous areas</b>	
• ATEX Zone 2	Yes
• ATEX Zone 22	Yes
• cULus Class I Zone 2, Division 2	Yes
• FM Class I Division 2	Yes

Article number	<b>6AV3688-3AF37-0AX0</b> SIMATIC HMI KP8F PN
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	55 °C
<b>Relative humidity</b>	
• Operation, max.	95 %; no condensation
<b>configuration / header</b>	
<b>Configuration software</b>	
• STEP 7 Basic (TIA Portal)	Yes
• STEP 7 Professional (TIA Portal)	Yes
<b>Functionality under WinCC (TIA Portal)</b>	
<b>Process coupling</b>	
• S7-1200	Yes; with ET 200pro CPU and ET 200S CPU
• S7-1500	Yes
• S7-200	No
• S7-300/400	Yes; with F-CPU: STEP 7 V11 SP1 (or higher) and Safety V11 (or higher) or SIMATIC STEP 7 Basic V11 (or higher)
• LOGO!	No
• WinAC	Yes
• SIMOTION	No
• Allen Bradley (EtherNet/IP)	No
• Allen Bradley (DF1)	No
• Mitsubishi (MC TCP/IP)	No
• Mitsubishi (FX)	No
• OMRON (FINS TCP)	No
• OMRON (LINK/Multilink)	No
• Modicon (Modbus TCP/IP)	No
• Modicon (Modbus)	No
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	Yes
• Aluminum	No
<b>Service life</b>	
• Short-stroke keys (in switching cycles)	1 500 000
• LEDs (ON period)	100 %
<b>Dimensions</b>	
Width of the housing front	98 mm
Height of housing front	155 mm
Mounting cutout, width	67.7 mm; Max. thickness of mounting plate 2 - 6 mm
Mounting cutout, height	129.7 mm
Overall depth	49 mm; Incl. angled SIMATIC Ethernet connector
<b>Weights</b>	
Weight (without packaging)	280 g

# Operator panels

Basic HMI  
Key Panels

## SIMATIC HMI KP8/KP8F/KP32F

### Technical specifications

Article number	<b>6AV3688-3EH47-0AX0</b> SIMATIC HMI KP32F PN
<b>General information</b>	
Product type designation	KP32F PN
<b>Control elements</b>	
With parameterizable keys	Yes
<b>Keyboard fonts</b>	
• Membrane keyboard	
- user-definable label membrane keys	Yes
• Function keys	
- Number of function keys	32
• Short-stroke keys	
- Number of short-stroke keys	32
<b>Expansions for operator control of the process</b>	
• DP direct LEDs (LEDs as S7 output I/O)	8; Adjustable brightness
• Number of color modes for LED	5; red, green, blue, yellow, white
• Direct keys (keys as S7 input I/O)	32
<b>Installation type/mounting</b>	
Mounting type	Mounting clip
Front mounting	Yes
Rail mounting	No
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
maximum permissible angle of inclination without external ventilation	30°; To the front/rear
Number of slots for command devices and signaling units	0
<b>Supply voltage</b>	
Rated value (DC)	24 V; 24 V looped through at connector, no interruption on pulling
<b>Digital inputs</b>	
Number of digital inputs	32; Total inputs and outputs max. 32 and 2x SIL 2 or 4x SIL 3
<b>Input voltage</b>	
• Rated value (DC)	24 V
<b>Digital outputs</b>	
Number of digital outputs	16; Max. 32 inputs and outputs (total)
Short-circuit protection	Yes
<b>Switching capacity of the outputs</b>	
• with resistive load, max.	100 mA
<b>Output voltage</b>	
• Rated value (DC)	24 V; Non-isolated
<b>Total current of the outputs</b>	
• Current per channel, max.	100 mA
• Current per group, max.	800 mA

Article number	<b>6AV3688-3EH47-0AX0</b> SIMATIC HMI KP32F PN
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch
<b>Industrial Ethernet</b>	
• Number of ports of the integrated switch	2; Per port
<b>Protocols</b>	
PROFINET	Yes; incl. shared device, 3rd party PLC
PROFINET CBA	No
IRT	Yes
PROFIsafe	Yes; 2x SIL 3 (two-channel) or 4x SIL 2 (single-channel) emergency stop sensors
PROFIBUS	No
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
- MRP	Yes
<b>Test commissioning functions</b>	
Illuminant test	Yes; During switch on
Key and signal lamp test	Yes; automatically when switching on
<b>Degree and class of protection</b>	
IP (at the front)	IP65
IP (rear)	IP20
NEMA (front)	
• Enclosure Type 4x at the front	Yes; Incl. NEMA12
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
CCC	No; not necessary
Suitable for safety functions	Yes
<b>Use in hazardous areas</b>	
• ATEX Zone 2	No
• ATEX Zone 22	No
• cULus Class I Zone 2, Division 2	No
• FM Class I Division 2	No
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	55 °C
<b>Relative humidity</b>	
• Operation, max.	95 %; no condensation
<b>Configuration</b>	
<b>Configuration software</b>	
• STEP 7 Basic (TIA Portal)	Yes
• STEP 7 Professional (TIA Portal)	Yes

## Operator panels

Basic HMI  
Key Panels

### SIMATIC HMI KP8/KP8F/KP32F

#### Technical specifications

Article number	<b>6AV3688-3EH47-0AX0</b> SIMATIC HMI KP32F PN
<b>Functionality under WinCC (TIA Portal)</b>	
<b>Process coupling</b>	
• S7-1200	Yes; with ET 200pro CPU and ET 200S CPU
• S7-1500	Yes
• S7-200	No
• S7-300/400	Yes; with F-CPU: STEP 7 V11 SP1 or higher and Safety V11 (or higher), without F-CPU STEP 7 or SIMATIC STEP 7 Basic V11 (or higher)
• LOGO!	No
• WinAC	Yes
• SIMOTION	No
• Allen Bradley (EtherNet/IP)	No
• Allen Bradley (DF1)	No
• Mitsubishi (MC TCP/IP)	No
• Mitsubishi (FX)	No
• OMRON (FINS TCP)	No
• OMRON (LINK/Multilink)	No
• Modicon (Modbus TCP/IP)	No
• Modicon (Modbus)	No
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	No
• Aluminum	Yes
<b>Service life</b>	
• Short-stroke keys (in switching cycles)	1 500 000
• LEDs (ON period)	100 %
<b>Dimensions</b>	
Width of the housing front	295 mm
Height of housing front	155 mm
Mounting cutout, width	277 mm; Max. thickness of mounting plate 2 - 6 mm
Mounting cutout, height	137 mm
Overall depth	37 mm; Incl. angled SIMATIC Ethernet connector
<b>Weights</b>	
Weight (without packaging)	1 220 g

Article number	<b>6AV3688-3XY38-3AX0</b> KP8 Design blank Front
<b>General information</b>	
Product type designation	Empty front design
<b>Installation type/mounting</b>	
Mounting type	Clamp terminals
Rack mounting	No
Front mounting	Yes; Compatible with Extension Units dimensions
Rail mounting	No
Wall mounting/direct mounting	No
Mounting in portrait format possible	Yes
Mounting in landscape format possible	Yes
maximum permissible angle of inclination without external ventilation	180°; To the front/rear
Number of slots for command devices and signaling units	5; Max. 5 possible
<b>Supply voltage</b>	
Design of the power supply	external
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	0
Number of PROFINET interfaces	0
Number of USB interfaces	0
<b>Protocols</b>	
PROFINET	No
PROFIsafe	No
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
- MRP	No
<b>Test commissioning functions</b>	
Key and signal lamp test	No
<b>Degree and class of protection</b>	
IP (at the front)	IP65
IP (rear)	IP20
NEMA (front)	
• Enclosure Type 4x at the front	No
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	No
RCM (formerly C-TICK)	No
KC approval	No
<b>Use in hazardous areas</b>	
• ATEX Zone 2	No
• ATEX Zone 22	No
• cULus Class I Zone 1	No
• cULus Class I Zone 2, Division 2	No
• 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
• Lloyds Register of Shipping (LRS)	No
• Nippon Kaiji Kyokai (Class NK)	No
• Polski Rejestr Statkow (PRS)	No

## Operator panels

Basic HMI

Key Panels

### SIMATIC HMI KP8/KP8F/KP32F

#### Technical specifications

Article number	<b>6AV3688-3XY38-3AX0</b> KP8 Design blank Front
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	55 °C
<b>Relative humidity</b>	
• Operation, max.	95 %
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	No
• Aluminum	Yes
• Stainless steel	No
<b>Dimensions</b>	
Width	98 mm
Height	155 mm
Mounting cutout, width	68 mm; Max. thickness of mounting plate 2 - 6 mm
Mounting cutout, height	129 mm
Overall depth	49 mm
<b>Weights</b>	
Weight (without packaging)	240 g
<b>Other</b>	
Merchandise	Yes
Manufacturer name	SIEMENS AG
Manufacturer's address	Gleiwitzerstraße 555, 90475 Nuremberg, Germany

#### More information

More information is available on the internet at <http://www.siemens.com/key-panels>

For accessories see "SIMATIC HMI operator control and monitoring systems" -> "Accessories"

#### Note:

Do you need a specific modification or option for the products described here? Then look up "Customized Automation", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

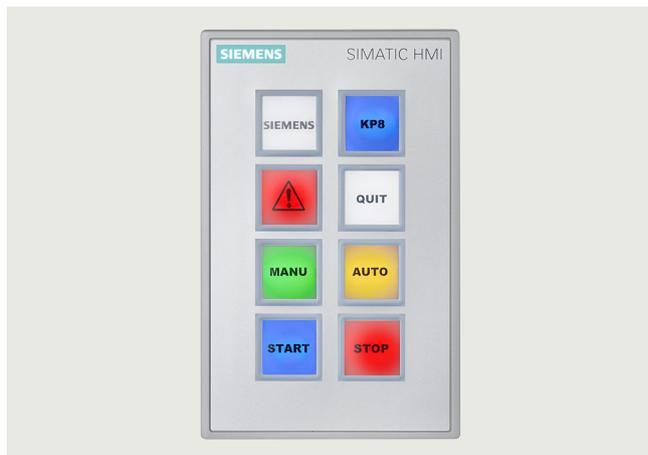
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## Operator panels

Basic HMI  
Key Panels

### SIPLUS HMI KP8/KP8F/KP32F

#### Overview



SIPLUS HMI KP8 PN



Blank front

#### SIPLUS HMI Key Panels

- Optimum operability thanks to large mechanical keys and multi-colored LED backlighting (daylight readable)
- Over 60% time savings for wiring and installation (Plug&Play)
- More than 30% savings in material costs compared to conventional keypad operator panels
- 2 PROFINET ports (incl. switch) already integrated for setting up line and ring topologies
- Freely configurable digital I/Os on the rear for connecting key-operated switches, indicator lights, etc.
- Connection of fail-safe emergency stop buttons or other fail-safe signals with KP8F and KP32F (in SIL 2 or SIL 3)
- Functionally compatible with all standard PROFINET master CPUs, also from other manufacturers
- KP8 and blank front design, also optimized for installation in IPC Extension Units in IP65
- Maximum flexibility due to parameterization
- Blank front design for standardized assembly of flexible operator panels

#### 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 KP8 PN

6AG1688-3AY36-2AX0

(extended temperature range and exposure to environmental substances)

Key Panel, 8 short-stroke keys with multi-colored LEDs, PROFINET interfaces, 2 x parameterizable with STEP 7 V5.5 or higher

##### SIPLUS HMI KP8F PN

6AG1688-3AF37-2AX0

(extended temperature range and exposure to environmental substances)

Key Panel, 8 short-stroke keys with multi-colored LEDs, PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; 4 additional fail-safe inputs. Can be used as 2 x SIL 2 or 1 x SIL 3

##### SIPLUS HMI KP32F PN

6AG1688-3EH47-2AX0

(extended temperature range and exposure to environmental substances)

Key Panel, 32 short-stroke keys with multi-colored LEDs, PROFINET interfaces with PROFIsafe, parameterizable with STEP 7 V5.5 or higher; including 8 fail-safe inputs. Can be used as 4 x SIL 2 or 2 x SIL 3

##### Blank front design

(Exposure to environmental substances)

For standard 22.5 mm operator controls, same mounting dimensions as KP8

6AG1688-3XY38-2AX0

##### Documentation

You can find the Equipment Manual for the Key Panels on the Internet at:

<http://support.automation.siemens.com/WWW/view/en/56652789>

##### Accessories

See SIMATIC HMI accessories

# Operator panels

Basic HMI  
Key Panels

## SIPLUS HMI KP8/KP8F/KP32F

### Technical specifications

Article number	<b>6AG1688-3AY36-2AX0</b> SIPLUS HMI KP8 PN	<b>6AG1688-3AF37-2AX0</b> SIPLUS HMI KP8F PN	<b>6AG1688-3EH47-2AX0</b> SIPLUS HMI KP32F PN
<b>General information</b>			
Product type designation	KP8 PN	KP8F PN	KP32F PN
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
• min.	-40 °C; = Tmin; Startup @ -25 °C	-20 °C; = Tmin (incl. condensation/frost)	-20 °C; = Tmin (incl. condensation/frost)
• max.	60 °C; = Tmax	55 °C; = Tmax	55 °C; = Tmax
<b>Altitude during operation relating to sea level</b>			
• Installation altitude above sea level, max.	5 000 m	2 000 m	2 000 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 at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 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 in bedewed state), horizontal installation	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
<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	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); *	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	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
- 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); *	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)		
- 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

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Overview



#### Basic Panels 2<sup>nd</sup> Generation

With their fully developed HMI basic functions, SIMATIC HMI Basic Panels 2<sup>nd</sup> Generation are the ideal entry-level series for simple HMI applications.

The device family offers panels with 4", 7", 9" and 12" displays, as well as combined key and touch operation.

The innovative high-resolution widescreen displays with 64 000 colors are also suitable for upright installation, and they can be dimmed down to 100%. The innovative operator interface with improved usability opens up a diverse range of options thanks to new controls and graphics. The new USB interface enables the connection of keyboard, mouse or bar code scanner, and supports the simple archiving of data on a USB flash drive as well as the manual backup and restoring of the complete panel.

The integrated Ethernet or RS 485/422 interface (version-specific) enables simple connection to the controller.

More information is available at

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

#### Ordering data

#### Article No.

##### SIMATIC HMI Basic Panels (2<sup>nd</sup> Generation)

##### Key and touch devices

##### SIMATIC HMI KTP400 Basic

Key/touch operation;  
4" TFT widescreen display,  
65 536 colors, PROFINET interface

6AV2123-2DB03-0AX0

##### SIMATIC HMI TP400 Basic Keyless

Touch screen operation;  
4" TFT widescreen display,  
65 536 colors, PROFINET interface

6AV2143-6DB00-0AA0

##### SIMATIC HMI KTP700 Basic

Key/touch operation; 7" TFT display,  
65 536 colors, PROFINET interface

6AV2123-2GB03-0AX0

##### SIMATIC HMI KTP700 Basic DP

Key/touch operation; 7" TFT display,  
65 536 colors, PROFIBUS interface

6AV2123-2GA03-0AX0

##### SIMATIC HMI TP700 Basic Keyless

Touch screen operation;  
7" TFT display, 65 536 colors,  
PROFINET interface

6AV2143-6GB00-0AA0

##### SIMATIC HMI KTP900 Basic

Key/touch operation; 9" TFT display,  
65 536 colors, PROFINET interface

6AV2123-2JB03-0AX0

##### SIMATIC HMI TP900 Basic Keyless

Touch screen operation;  
9" TFT display, 65 536 colors,  
PROFINET interface

6AV2143-6JB00-0AA0

##### SIMATIC HMI KTP1200 Basic

Key/touch operation;  
12" TFT display, 65 536 colors,  
PROFINET interface

6AV2123-2MB03-0AX0

##### SIMATIC HMI KTP1200 Basic DP

Key/touch operation;  
12" TFT display, 65 536 colors,  
PROFIBUS interface

6AV2123-2MA03-0AX0

##### Documentation

You can find the Equipment Manual for the Basic Panels on the Internet at:

<http://support.automation.siemens.com/WWW/view/en/56652789>

##### Accessories

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

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	<b>6AV2123-2DB03-0AX0</b> SIMATIC HMI KTP400 Basic	<b>6AV2143-6DB00-0AA0</b> SIMATIC HMI TP400 Basic OEM	<b>6AV2123-2GB03-0AX0</b> SIMATIC HMI KTP700 Basic	<b>6AV2123-2GA03-0AX0</b> SIMATIC HMI KTP700 Basic DP	<b>6AV2143-6GB00-0AA0</b> SIMATIC HMI TP700 Basic OEM
<b>General information</b>					
Product type designation	KTP400 Basic	TP400 Basic Keyless	KTP700 Basic color PN	KTP700 Basic color DP	TP700 Basic Keyless
<b>Display</b>					
Design of display	TFT widescreen display, LED backlighting				
Screen diagonal	4.3 in	4.3 in	7 in	7 in	7 in
Number of colors	65 536	65 536	65 536	65 536	65 536
<b>Resolution (pixels)</b>					
• Horizontal image resolution	480 pixel	480 pixel	800 pixel	800 pixel	800 pixel
• Vertical image resolution	272 pixel	272 pixel	480 pixel	480 pixel	480 pixel
<b>Backlighting</b>					
• MTBF backlighting (at 25 °C)	20 000 h	20 000 h	20 000 h	20 000 h	20 000 h
<b>Control elements</b>					
<b>Keyboard fonts</b>					
• Function keys		No			No
- Number of function keys	4	0	8	8	0
<b>Touch operation</b>					
• Design as touch screen	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive
• Design as multi-touch screen		No			
• Monitor keyboard		Yes			
<b>Installation type/mounting</b>					
Wall mounting/direct mounting	No	No	No		
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes
<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	10 Mbyte	10 Mbyte	10 Mbyte	10 Mbyte	10 Mbyte
<b>Type of output</b>					
<b>Acoustics</b>					
• Buzzer	Yes	Yes	Yes	Yes	Yes
<b>Time of day</b>					
<b>Clock</b>					
• Software clock	Yes	Yes	Yes	Yes	Yes
• retentive	Yes; Back-up duration typically 6 weeks	Yes	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
<b>Interfaces</b>					
Number of industrial Ethernet interfaces	1	1	1	0	1
Number of RS 485 interfaces	0	0	0	1	0
Number of USB interfaces	1; Up to 16 GB	1	1; Up to 16 GB	1; Up to 16 GB	1; Up to 16 GB
Number of SD card slots	0	0	0	0	0

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	6AV2123-2DB03-0AX0 SIMATIC HMI KTP400 Basic	6AV2143-6DB00-0AA0 SIMATIC HMI TP400 Basic OEM	6AV2123-2GB03-0AX0 SIMATIC HMI KTP700 Basic	6AV2123-2GA03-0AX0 SIMATIC HMI KTP700 Basic DP	6AV2143-6GB00-0AA0 SIMATIC HMI TP700 Basic OEM
<b>Protocols</b>					
PROFINET	Yes	Yes	Yes	No	Yes
IRT	No	No	No	No	No
PROFIBUS	No	No	No	Yes	No
MPI	No	No	No	Yes	No
<b>Redundancy mode</b>					
<b>Media redundancy</b>					
- MRP	No		No	No	No
<b>Degree and class of protection</b>					
IP (at the front)	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20	IP20
NEMA (front)					
• Enclosure Type 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
EAC (formerly Gost-R)		Yes			
<b>Use in hazardous areas</b>					
• ATEX Zone 2	No	No	No	No	No
• ATEX Zone 22	No	No	No	No	No
• IECEx Zone 2	No		No	No	No
• IECEx Zone 22	No		No	No	No
• cULus Class I Zone 2, Division 2	No	No	No	No	No
• FM Class I Division 2	No	No	No	No	No
<b>Marine approval</b>					
• Germanischer Lloyd (GL)	Yes		Yes	Yes	Yes
• American Bureau of Shipping (ABS)	Yes		Yes	Yes	Yes
• Bureau Veritas (BV)	Yes		Yes	Yes	Yes
• Det Norske Veritas (DNV)	Yes		Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes		Yes	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes		Yes	Yes	Yes
• Polski Rejestr Statkow (PRS)	No		No	No	No
• Chinese Classification Society (CCS)	No		No	No	No
<b>Ambient conditions</b>					
Suited for indoor use	Yes			Yes	
Suited for outdoor use	No			No	
<b>Ambient temperature during operation</b>					
<b>Operation (vertical installation)</b>					
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C	50 °C
<b>Relative humidity</b>					
• Operation, max.	90 %; no condensation	90 %	90 %; no condensation	90 %; no condensation	90 %; no condensation

# Operator panels

Basic HMI

Basic Panels

## Standard devices 2nd Generation

### Technical specifications

Article number	<b>6AV2123-2DB03-0AX0</b> SIMATIC HMI KTP400 Basic	<b>6AV2143-6DB00-0AA0</b> SIMATIC HMI TP400 Basic OEM	<b>6AV2123-2GB03-0AX0</b> SIMATIC HMI KTP700 Basic	<b>6AV2123-2GA03-0AX0</b> SIMATIC HMI KTP700 Basic DP	<b>6AV2143-6GB00-0AA0</b> SIMATIC HMI TP700 Basic OEM
<b>Configuration</b>					
<b>Configuration software</b>					
• WinCC flexible Compact	No	No	No	No	No
• WinCC Basic (TIA Portal)	Yes	Yes	Yes	Yes	Yes
<b>Languages</b>					
<b>Online languages</b>					
• Number of online/runtime languages	10	10	10	10	10
<b>Functionality under WinCC (TIA Portal)</b>					
Applications/options					
• Web browser	Yes		Yes	No	Yes
• SIMATIC WinCC Sm@rtServer	Yes; Available with WinCC (TIA Portal) V14 or higher		Yes; Available with WinCC (TIA Portal) V14 or higher	No	
Number of Visual Basic Scripts	No	No	No	No	No
Task planner	Yes	Yes	Yes	Yes	Yes
• time-controlled	No	No	No	No	No
• task-controlled	Yes	Yes	Yes	Yes	Yes
<b>Message system</b>					
• Bit messages					
- Number of bit messages	1 000	1 000	1 000	1 000	1 000
• Analog messages					
- Number of analog messages	25	25	25	25	25
• Message buffer					
- Number of entries	256	256	256	256	256
- Circulating buffer	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes
<b>Recipe management</b>					
• Number of recipes	50	50	50	50	50
• Size of internal recipe memory	256 kbyte	256 kbyte	256 kbyte	256 kbyte	256 kbyte
• Recipe memory expandable	No	No	No	No	No
<b>Variables</b>					
• Number of variables per device	800	800	800	800	800
• Number of variables per screen	100	100	100	100	100
<b>Images</b>					
• Number of configurable images	250	100	250	250	250
<b>Archiving</b>					
• Number of archives per device	2; One message and one process value archive	2	2; One message and one process value archive	2; One message and one process value archive	2
• Number of entries per archive	10 000	10 000	10 000	10 000	10 000
• Message archive	Yes	Yes	Yes	Yes	Yes
• Process value archive	Yes	Yes	Yes	Yes	Yes
• Archiving methods					
- Sequential archive	Yes	Yes	Yes	Yes	Yes
- Short-term archive	Yes	Yes	Yes	Yes	Yes
• Memory location					
- Memory card	No	No	No	No	No
- USB memory	Yes	Yes	Yes	Yes	Yes
- Ethernet	No	No	No	No	No
• Data storage format					
- CSV	No	Yes	No	No	No
- TXT	Yes	No	Yes	Yes	Yes
- RDB	No	No	No	No	No

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	<b>6AV2123-2DB03-0AX0</b> SIMATIC HMI KTP400 Basic	<b>6AV2143-6DB00-0AA0</b> SIMATIC HMI TP400 Basic OEM	<b>6AV2123-2GB03-0AX0</b> SIMATIC HMI KTP700 Basic	<b>6AV2123-2GA03-0AX0</b> SIMATIC HMI KTP700 Basic DP	<b>6AV2143-6GB00-0AA0</b> SIMATIC HMI TP700 Basic OEM
<b>Security</b>					
• Number of user groups	50	50	50	50	50
• Number of users	50		50	50	50
• SIMATIC Logon	No	No	No	No	No
<b>Transfer (upload/download)</b>					
• MPI/PROFIBUS DP	No	No	No	Yes	No
• Ethernet	Yes	Yes	Yes	No	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	No	Yes
• Allen Bradley (DF1)	No	No	No	Yes	No
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	No	Yes
• Mitsubishi (FX)	No	No	No	Yes	No
• OMRON (FINS TCP)	No	No	No	No	No
• OMRON (LINK/Multilink)	No	No	No	Yes	No
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	No	Yes
• Modicon (Modbus)	No	No	No	Yes	No
<b>Peripherals/Options</b>					
Printer	No	No	No	No	No
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	No	No	No	No	No
USB memory	Yes	Yes; USB storage medium can be connected	Yes	Yes	Yes
<b>Mechanics/material</b>					
Enclosure material (front)					
• Plastic	Yes	Yes	Yes	Yes	Yes
• Aluminum	No	No	No	No	No
• Stainless steel	No	No	No	No	No
<b>Dimensions</b>					
Width of the housing front	140 mm	140 mm	214 mm	214 mm	214 mm
Height of housing front	116 mm	116 mm	158 mm	158 mm	158 mm
Mounting cutout, width	124 mm	123 mm	198 mm	198 mm	197 mm
Mounting cutout, height	100 mm	99 mm	142 mm	142 mm	141 mm
Overall depth	34.9 mm	33 mm	39 mm	39 mm	39 mm
<b>Weights</b>					
Weight (without packaging)	360 g		780 g	800 g	780 g

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	<b>6AV2123-2JB03-0AX0</b> SIMATIC HMI KTP900 Basic	<b>6AV2143-6JB00-0AA0</b> SIMATIC HMI TP900 Basic OEM	<b>6AV2123-2MB03-0AX0</b> SIMATIC HMI KTP1200 Basic	<b>6AV2123-2MA03-0AX0</b> SIMATIC HMI KTP1200 Basic DP
<b>General information</b>				
Product type designation	KTP900 Basic color PN	TP900 Basic Keyless	KTP1200 Basic color PN	KTP1200 Basic color DP
<b>Display</b>				
Design of display	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting
Screen diagonal	9 in	9 in	12 in	12 in
Number of colors	65 536	65 536	65 536	65 536
<b>Resolution (pixels)</b>				
• Horizontal image resolution	800 pixel	800 pixel	1 280 pixel	1 280 pixel
• Vertical image resolution	480 pixel	480 pixel	800 pixel	800 pixel
<b>Backlighting</b>				
• MTBF backlighting (at 25 °C)	20 000 h	20 000 h	20 000 h	20 000 h
<b>Control elements</b>				
<b>Keyboard fonts</b>				
• Function keys		No		
- Number of function keys	8	0	10	10
<b>Touch operation</b>				
• Design as touch screen	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive
• Design as multi-touch screen		No		
• Monitor keyboard		Yes		
<b>Installation type/mounting</b>				
Mounting in portrait format possible	Yes	Yes	Yes	Yes
<b>Supply voltage</b>				
Rated value (DC)	24 V	24 V	24 V	24 V
<b>Memory</b>				
Memory available for user data	10 Mbyte	10 Mbyte	10 Mbyte	10 Mbyte
<b>Type of output</b>				
Acoustics		Buzzer		
• Buzzer	Yes	Yes	Yes	Yes
<b>Time of day</b>				
<b>Clock</b>				
• Software clock	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
• synchronizable	Yes	Yes	Yes	Yes
<b>Interfaces</b>				
Number of industrial Ethernet interfaces	1	1	1	0
Number of RS 485 interfaces	0	0	0	1
Number of USB interfaces	1; Up to 16 GB	1; USB 2.0, up to 16 GB respectively	1; Up to 16 GB	1; Up to 16 GB
Number of SD card slots	0	0	0	0
<b>Industrial Ethernet</b>				
• Number of ports of the integrated switch		0		

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## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	<b>6AV2123-2JB03-0AX0</b> SIMATIC HMI KTP900 Basic	<b>6AV2143-6JB00-0AA0</b> SIMATIC HMI TP900 Basic OEM	<b>6AV2123-2MB03-0AX0</b> SIMATIC HMI KTP1200 Basic	<b>6AV2123-2MA03-0AX0</b> SIMATIC HMI KTP1200 Basic DP
<b>Protocols</b>				
PROFINET	Yes	Yes	Yes	No
IRT	No	No	No	No
PROFIBUS	No	No	No	Yes
MPI	No	No	No	Yes
<b>Redundancy mode</b>				
<b>Media redundancy</b>				
- MRP	No	No	No	No
<b>Degree and class of protection</b>				
IP (at the front)	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20
NEMA (front)				
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
cULus	Yes		Yes	Yes
RCM (formerly C-TICK)	Yes		Yes	Yes
KC approval	Yes		Yes	Yes
<b>Use in hazardous areas</b>				
• ATEX Zone 2	No		No	No
• ATEX Zone 22	No		No	No
• IECEx Zone 2	No		No	No
• IECEx Zone 22	No		No	No
• cULus Class I Zone 2, Division 2	No		No	No
• FM Class I Division 2	No		No	No
<b>Marine approval</b>				
• Germanischer Lloyd (GL)	Yes		Yes	Yes
• American Bureau of Shipping (ABS)	Yes		Yes	Yes
• Bureau Veritas (BV)	Yes		Yes	Yes
• Det Norske Veritas (DNV)	Yes		Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes		Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes		Yes	Yes
• Polski Rejestr Statkow (PRS)	No		No	No
• Chinese Classification Society (CCS)	No		No	No
<b>Ambient conditions</b>				
Suited for indoor use				Yes
Suited for outdoor use				No
<b>Ambient temperature during operation</b>				
<b>Operation (vertical installation)</b>				
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C
<b>Relative humidity</b>				
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>				
<b>Configuration software</b>				
• WinCC flexible Compact	No	No	No	No
• WinCC Basic (TIA Portal)	Yes	Yes	Yes	Yes

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	<b>6AV2123-2JB03-0AX0</b> SIMATIC HMI KTP900 Basic	<b>6AV2143-6JB00-0AA0</b> SIMATIC HMI TP900 Basic OEM	<b>6AV2123-2MB03-0AX0</b> SIMATIC HMI KTP1200 Basic	<b>6AV2123-2MA03-0AX0</b> SIMATIC HMI KTP1200 Basic DP
<b>Languages</b>				
<b>Online languages</b>				
• Number of online/runtime languages	10	10	10	10
<b>Functionality under WinCC (TIA Portal)</b>				
Applications/options				
• Web browser	Yes	No	Yes	No
• SIMATIC WinCC Sm@rtServer	Yes; Available with WinCC (TIA Portal) V14 or higher	No	Yes; Available with WinCC (TIA Portal) V14 or higher	No
Number of Visual Basic Scripts	No	No	No	No
Task planner	Yes	Yes	Yes	Yes
• time-controlled	No	No	No	No
• task-controlled	Yes	Yes	Yes	Yes
<b>Message system</b>				
• Bit messages				
- Number of bit messages	1 000	1 000	1 000	1 000
• Analog messages				
- Number of analog messages	25	25	25	25
• Message buffer				
- Number of entries	256	256	256	256
- Circulating buffer	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes
<b>Recipe management</b>				
• Number of recipes				
	50	50	50	50
• Size of internal recipe memory				
	256 kbyte	256 kbyte	256 kbyte	256 kbyte
• Recipe memory expandable				
	No		No	No
<b>Variables</b>				
• Number of variables per device				
	800	800	800	800
• Number of variables per screen				
	100	100	100	100
<b>Images</b>				
• Number of configurable images				
	250	100	250	250
<b>Archiving</b>				
• Number of archives per device				
	2; One message and one process value archive	2	2; One message and one process value archive	2; One message and one process value archive
• Number of entries per archive				
	10 000	10 000	10 000	10 000
• Message archive				
	Yes	Yes	Yes	Yes
• Process value archive				
	Yes	Yes	Yes	Yes
• Archiving methods				
- Sequential archive	Yes	Yes	Yes	Yes
- Short-term archive	Yes	Yes	Yes	Yes
• Memory location				
- Memory card	No	No	No	No
- USB memory	Yes	Yes	Yes	Yes
- Ethernet	No	No	No	No
• Data storage format				
- CSV	No	No	No	No
- TXT	Yes	Yes	Yes	Yes
- RDB	No	No	No	No

## Operator panels

Basic HMI

Basic Panels

### Standard devices 2nd Generation

#### Technical specifications

Article number	6AV2123-2JB03-0AX0	6AV2143-6JB00-0AA0	6AV2123-2MB03-0AX0	6AV2123-2MA03-0AX0
	SIMATIC HMI KTP900 Basic	SIMATIC HMI TP900 Basic OEM	SIMATIC HMI KTP1200 Basic	SIMATIC HMI KTP1200 Basic DP
<b>Security</b>				
• Number of user groups	50	50	50	50
• Number of users	50		50	50
• SIMATIC Logon	No	No	No	No
<b>Transfer (upload/download)</b>				
• MPI/PROFIBUS DP	No	No	No	Yes
• Ethernet	Yes	Yes	Yes	No
<b>Process coupling</b>				
• S7-1200	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	No
• Allen Bradley (DF1)	No	No	No	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	No
• Mitsubishi (FX)	No	No	No	Yes
• OMRON (FINS TCP)	No	No	No	No
• OMRON (LINK/Multilink)	No	No	No	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	No
• Modicon (Modbus)	No	No	No	Yes
<b>Peripherals/Options</b>				
Printer	No	No	No	No
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	No	No	No	No
USB memory	Yes	Yes; USB storage medium can be connected	Yes	Yes
<b>Mechanics/material</b>				
Enclosure material (front)				
• Plastic	Yes	Yes	Yes	Yes
• Aluminum	No	No	No	No
• Stainless steel	No	No	No	No
<b>Dimensions</b>				
Width of the housing front	267 mm	267 mm	330 mm	330 mm
Height of housing front	182 mm	182 mm	245 mm	245 mm
Mounting cutout, width	251 mm	251 mm	310 mm	310 mm
Mounting cutout, height	166 mm	166 mm	221 mm	221 mm
Overall depth	39.4 mm	55 mm	54.9 mm	54.9 mm
<b>Weights</b>				
Weight (without packaging)	1 130 g	1 130 g	1 710 g	1 710 g

#### More information

More information is available on the internet at

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

Note:

Do you need a specific modification or extension to the products described here? Then look up "Customized products", where you will find information about additional and generally available sector-specific products, as well as options for customer-specific modifications and adaptations.

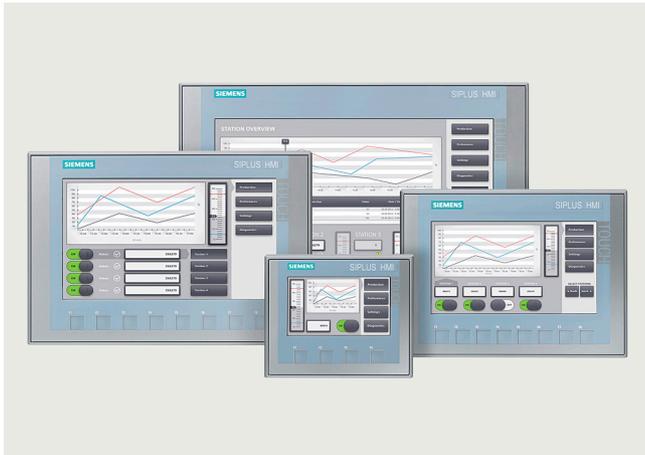
## Operator panels

Basic HMI

Basic Panels

### SIPLUS Basic Panels (2nd Generation)

#### Overview



With their fully developed HMI basic functions, 2<sup>nd</sup> Generation SIPLUS Basic Panels are the ideal entry-level series for simple HMI applications.

The device family offers panels with 4", 7", 9" and 12" displays, as well as combined key and touch operation.

The innovative high-resolution widescreen displays with 64 000 colors are also suitable for upright installation, and they can be dimmed down to 100%. The innovative operator interface with improved usability opens up a diverse range of options thanks to new controls and graphics. The new USB interface enables the connection of keyboard, mouse or barcode scanner, and supports the simple archiving of data on a USB flash drive.

The integrated Ethernet or RS 485/422 interface (version-specific) enables simple connection to the controller.

#### 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 Basic Panels, Key and Touch

##### SIPLUS HMI KTP400 Basic

6AG1123-2DB03-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +60 °C

##### SIPLUS HMI KTP700 Basic

6AG1123-2GB03-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +50 °C

##### SIPLUS HMI KTP700 Basic DP

6AG1123-2GA03-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +50 °C

##### SIPLUS HMI KTP900 Basic

6AG1123-2JB03-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -20 ... +50 °C

##### SIPLUS HMI KTP1200 Basic

6AG1123-2MB03-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -10 ... +50 °C

##### SIPLUS HMI KTP1200 Basic DP

6AG1123-2MA03-2AX0

For areas with extreme exposure to environmental substances (conformal coating); ambient temperature -10 ... +50 °C

#### Accessories

See SIMATIC Basic Panels 2<sup>nd</sup> Generation

#### Technical specifications

Article number	6AG1123-2DB03-2AX0	6AG1123-2GB03-2AX0	6AG1123-2GA03-2AX0
	SIPLUS HMI KTP400 BASIC	SIPLUS HMI KTP700 BASIC	SIPLUS HMI KTP700 BASIC DP
<b>General information</b>			
Product type designation	KTP400 Basic color PN	KTP700 Basic color PN	KTP700 Basic color DP
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
<b>Operation (vertical installation)</b>			
- For vertical installation, min.	-20 °C; = Tmin	-20 °C	-20 °C; = Tmin
- For vertical installation, max.	60 °C; = Tmax	50 °C	50 °C
<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 1 140 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)

## Operator panels

Basic HMI

Basic Panels

### SIPLUS Basic Panels (2nd Generation)

#### Technical specifications

Article number	<b>6AG1123-2DB03-2AX0</b> SIPLUS HMI KTP400 BASIC	<b>6AG1123-2GB03-2AX0</b> SIPLUS HMI KTP700 BASIC	<b>6AG1123-2GA03-2AX0</b> SIPLUS HMI KTP700 BASIC DP
<b>Relative humidity</b>			
<ul style="list-style-type: none"> <li>With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	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 when condensation present), vertical mounting position
<b>Resistance</b>			
<b>Coolants and lubricants</b>			
<ul style="list-style-type: none"> <li>Resistant to commercially available coolants and lubricants</li> </ul>	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>			
<ul style="list-style-type: none"> <li>to biologically active substances according to EN 60721-3-3</li> <li>to chemically active substances according to EN 60721-3-3</li> <li>to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>			
<ul style="list-style-type: none"> <li>to biologically active substances according to EN 60721-3-6</li> <li>to chemically active substances according to EN 60721-3-6</li> <li>to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>			
<ul style="list-style-type: none"> <li>Against chemically active substances acc. to EN 60654-4</li> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	Yes; Class 3 (excluding trichlorethylene) 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)	Yes; Class 3 (excluding trichlorethylene) 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)	Yes; Class 3 (excluding trichlorethylene) 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>			
<ul style="list-style-type: none"> <li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* 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>			
<ul style="list-style-type: none"> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>Protection against fouling acc. to EN 60664-3</li> <li>Military testing according to MIL-I-46058C, Amendment 7</li> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	Yes; Class 2 for high reliability Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A	Yes; Class 2 for high reliability Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A	Yes; Class 2 for high reliability Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A

# Operator panels

Basic HMI

Basic Panels

## SIPLUS Basic Panels (2nd Generation)

### Technical specifications

Article number	<b>6AG1123-2JB03-2AX0</b> SIPLUS HMI KTP900 BASIC	<b>6AG1123-2MB03-2AX0</b> SIPLUS HMI KTP1200 BASIC	<b>6AG1123-2MA03-2AX0</b> SIPLUS HMI KTP1200 BASIC DP
<b>General information</b>			
Product type designation	KTP900 Basic color PN	KTP1200 Basic color PN	KTP1200 Basic color DP
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
<b>Operation (vertical installation)</b>			
- For vertical installation, min.	-20 °C	-10 °C; = Tmin	-10 °C; = Tmin
- For vertical installation, max.	50 °C	50 °C	50 °C
<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 1 140 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 in bedewed state), horizontal installation	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	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	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); *	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	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); *	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)	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)	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!

## Operator panels

Basic HMI

Basic Panels

### SIPLUS Basic Panels (2nd Generation)

#### Technical specifications

Article number	<b>6AG1123-2JB03-2AX0</b> SIPLUS HMI KTP900 BASIC	<b>6AG1123-2MB03-2AX0</b> SIPLUS HMI KTP1200 BASIC	<b>6AG1123-2MA03-2AX0</b> SIPLUS HMI KTP1200 BASIC DP
<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

More information is available on the internet at <http://www.siemens.com/basic-panels>

Note:

Do you need a specific modification or extension to the products described here? Then look up "Customized products", where you will find information about additional and generally available sector-specific products, as well as options for customer-specific modifications and adaptations.

## Operator panels

### Basic HMI

#### SIMATIC HMI Unified Basic Panels

##### Overview



##### **SIMATIC HMI Unified Basic Panels**

SIMATIC HMI Unified Basic Panels consist of four different devices with varying display sizes. All devices come with the same number of hardware interfaces and the same functionality – just select the perfect device for your needs based on the screen size.

Each Unified Basic Panel is available in the standard design with Siemens and SIMATIC HMI branding.

SIMATIC WinCC Unified contains visualization, communication, alarms/warnings, administration of parameter sets, archiving of user administration.

Furthermore, a WinCC Unified Client Operate for remote operator control and monitoring is included.

Client access is based on native web technologies such as HTML5, SVG and JavaScript. The visualization can be accessed via any modern web browser – without the need for additional installation.

##### Ordering data

##### Article No.

##### **SIMATIC HMI MTP400, Unified Basic Panel**

Touch operation,  
4" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as of  
WinCC Unified Basic V18 Upd. 3,  
contains open source SW which is  
provided free of charge  
See enclosed Blu-Ray

6AV2123-3DB32-0AW0

##### **SIMATIC HMI MTP700, Unified Basic Panel**

Touch operation,  
7" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as of  
WinCC Unified Basic V18 Upd. 3,  
contains open source SW which is  
provided free of charge  
See enclosed Blu-Ray

6AV2123-3GB32-0AW0

##### **SIMATIC HMI MTP1000, Unified Basic Panel**

Touch operation,  
10" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as of  
WinCC Unified Basic V18 Upd. 3,  
contains open source SW which is  
provided free of charge  
See enclosed Blu-Ray

6AV2123-3KB32-0AW0

##### **SIMATIC HMI MTP1200, Unified Basic Panel**

Touch operation,  
12" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as of  
WinCC Unified Basic V18 Upd. 3,  
contains open source SW which is  
provided free of charge  
See enclosed Blu-Ray

6AV2123-3MB32-0AW0

# Operator panels

## Basic HMI

### SIMATIC HMI Unified Basic Panels

#### Technical specifications

Article number	<b>6AV2123-3DB32-0AW0</b> SIMATIC HMI MTP400 Unified Basic	<b>6AV2123-3GB32-0AW0</b> SIMATIC HMI MTP700 Unified Basic	<b>6AV2123-3KB32-0AW0</b> SIMATIC HMI MTP1000 Unified Basic	<b>6AV2123-3MB32-0AW0</b> SIMATIC HMI MTP1200 Unified Basic
<b>General information</b>				
Product type designation	MTP400 Unified Basic	MTP700 Unified Basic	MTP1000 Unified Basic	MTP1200 Unified Basic
<b>Display</b>				
Design of display	TFT	TFT	TFT	TFT
Screen diagonal	4.3 in	7 in	10.1 in	12.1 in
Number of colors	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
• Vertical image resolution	480 pixel	480 pixel	800 pixel	800 pixel
<b>Backlighting</b>				
• MTBF backlighting (at 25 °C)	20 000 h; At 25°C	20 000 h; At 25°C	20 000 h; At 25°C	20 000 h; At 25°C
<b>Control elements</b>				
<b>Touch operation</b>				
• Design as touch screen	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes
• Monitor keyboard	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>				
Mounting in portrait format possible	Yes	Yes	Yes	Yes
<b>Supply voltage</b>				
Rated value (DC)	24 V	24 V	24 V	24 V
<b>Type of output</b>				
<b>Acoustics</b>				
• Buzzer	No	No	No	No
<b>Time of day</b>				
<b>Clock</b>				
• Software clock	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
• synchronizable	Yes	Yes	Yes	Yes
<b>Interfaces</b>				
Number of industrial Ethernet interfaces	1; Gigabit Ethernet (IE/PN), RJ45	1; Gigabit Ethernet (IE/PN), RJ45	1; Gigabit Ethernet (IE/PN), RJ45	1; Gigabit Ethernet (IE/PN), RJ45
Number of RS 485 interfaces	0	0	0	0
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of SD card slots	0	0	0	0
<b>Industrial Ethernet</b>				
• Number of ports of the integrated switch	1	1	1	1
<b>Protocols</b>				
PROFINET	Yes	Yes	Yes	Yes
IRT	No	No	No	No
MPI	No	No	No	No
<b>Redundancy mode</b>				
<b>Media redundancy</b>				
- MRP	No	No	No	No
<b>Degree and class of protection</b>				
IP (at the front)	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20
NEMA (front)	NEMA 4, NEMA 4x (when installed)	NEMA 4, NEMA 4x (when installed)	NEMA 4, NEMA 4x (when installed)	NEMA 4, NEMA 4x (when installed)
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	No	No	No	No
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes
FM approval	No	No	No	No

# Operator panels

## Basic HMI

### SIMATIC HMI Unified Basic Panels

#### Technical specifications

Article number	<b>6AV2123-3DB32-0AW0</b> SIMATIC HMI MTP400 Unified Basic	<b>6AV2123-3GB32-0AW0</b> SIMATIC HMI MTP700 Unified Basic	<b>6AV2123-3KB32-0AW0</b> SIMATIC HMI MTP1000 Unified Basic	<b>6AV2123-3MB32-0AW0</b> SIMATIC HMI MTP1200 Unified Basic
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	No	No	No	No
CCC	No	No	No	No
<b>Use in hazardous areas</b>				
• ATEX Zone 2	No	No	No	No
• ATEX Zone 22	No	No	No	No
• IECEx Zone 2	No	No	No	No
• IECEx Zone 22	No	No	No	No
• cULus Class I Zone 2, Division 2	No	No	No	No
• cULus Class II Division 2	No	No	No	No
• FM Class I Division 2	No	No	No	No
• FM Class II Division 2	No	No	No	No
<b>Marine approval</b>				
• Germanischer Lloyd (GL)	No; included in DNV	No; included in DNV	No; included in DNV	No; included in DNV
• American Bureau of Shipping (ABS)	Yes; in preparation	Yes; in preparation	Yes; in preparation	Yes; in preparation
• Bureau Veritas (BV)	Yes; in preparation	Yes; in preparation	Yes; in preparation	Yes; in preparation
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes
• Korean Register of Shipping (KRS)	Yes	Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes	Yes
• Chinese Classification Society (CCS)	Yes	Yes	Yes	Yes
<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>				
<b>Operation (vertical installation)</b>				
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C
<b>Relative humidity</b>				
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>configuration / header</b>				
<b>Configuration software</b>				
• WinCC Unified Basic Engineering (TIA Portal)	Yes	Yes	Yes	Yes
• WinCC Unified Comfort Engineering (TIA Portal)	Yes	Yes	Yes	Yes
• WinCC Unified PC Engineering (TIA Portal)	Yes	Yes	Yes	Yes
<b>Languages</b>				
<b>Online languages</b>				
• Number of online/runtime languages	32	32	32	32
<b>Functionality under WinCC Unified</b>				
Applications/options	No	No	No	No
Number of Visual Basic Scripts	No	No	No	No
JavaScript	Yes	Yes	Yes	Yes
Task planner				
• time-controlled	Yes	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes	Yes
<b>functionality under WinCC Unified / alarm system / header</b>				
• Bit messages				
- Number of bit messages	2 000	2 000	2 000	2 000
• Analog messages				
- Number of analog messages	100	100	100	100
• Message buffer	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive
- Circulating buffer	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes

# Operator panels

## Basic HMI

### SIMATIC HMI Unified Basic Panels

#### Technical specifications

Article number	<b>6AV2123-3DB32-0AW0</b> SIMATIC HMI MTP400 Unified Basic	<b>6AV2123-3GB32-0AW0</b> SIMATIC HMI MTP700 Unified Basic	<b>6AV2123-3KB32-0AW0</b> SIMATIC HMI MTP1000 Unified Basic	<b>6AV2123-3MB32-0AW0</b> SIMATIC HMI MTP1200 Unified Basic
<b>Parameter set management (recipes)</b>				
• Number of parameter set types	250	250	250	250
• Size of internal parameter set memory	5 Mbyte	5 Mbyte	5 Mbyte	5 Mbyte
• Parameter set memory expandable	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>				
• Number of variables per device	1 000	1 000	1 000	1 000
• Number of variables per screen	300	300	300	300
<b>Functionality under WinCC Unified / screens</b>				
• Number of configurable images	300	300	300	300
<b>Functionality under WinCC Unified / archiving</b>				
• Number of archives per device	10	10	10	10
<b>Security</b>				
• Number of roles	50	50	50	50
• Number of users	200	200	200	200
• Central user administration	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / transfer (upload/download)</b>				
• Ethernet	Yes	Yes	Yes	Yes
<b>Process coupling</b>				
• S7-1200	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes
• S7-200	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes
• Number of S7 connections	8	8	8	8
• LOGO!	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20
• SIMOTION	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes
• OPC UA Server	No	No	No	No
• Software Controller/Open Controller	No	No	No	No
<b>Peripherals/Options</b>				
Peripherals	Barcode reader	Barcode reader	Barcode reader	Barcode reader
Printer	No	No	No	No
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	No	No	No	No
USB memory	Yes	Yes	Yes	Yes
Network camera	No	No	No	No
<b>Mechanics/material</b>				
Enclosure material (front)				
• Plastic	Yes	Yes	Yes	Yes
<b>Dimensions</b>				
Width of the housing front	140 mm	214 mm	280 mm	326 mm
Height of housing front	116 mm	158 mm	205 mm	237 mm
Mounting cutout, width	123 mm	197 mm	264 mm	310 mm
Mounting cutout, height	99 mm	141 mm	189 mm	221 mm
Overall depth	36 mm	36 mm	55 mm	55 mm
<b>Weights</b>				
Weight (without packaging)	0.45 kg	0.85 kg	1.55 kg	2.08 kg

# Operator panels

## Advanced HMI Panel-based

### Introduction

#### Overview

##### ***Realization of demanding HMI tasks with a high level of user convenience***

Advanced HMI is the Panel-based solution for demanding applications with large configuration limits. The user benefits from excellent functionality and a wide range of devices and applications, with key or touch operation. Both stationary and mobile solutions are available.

##### SIMATIC HMI Unified Comfort Panels

The new generation of high-end, 7–22" operator panels, part of the new SIMATIC WinCC Unified System, boasts numerous improvements over the predecessor devices in terms of performance, openness and user-friendliness.

- Rugged multi-touch technology
- Innovative SIMATIC WinCC Unified visualization software
- Integrated Edge functionality
- Remote Client support

##### SIMATIC HMI Comfort Panels

SIMATIC HMI Comfort Panels are designed for implementing high-performance visualization tasks at machine-level. High performance, functionality and numerous integrated interfaces offer the greatest convenience in high-end applications.

- Brilliant widescreen display of 4" to 22"
- Easy commissioning and service concept

##### SIMATIC HMI Mobile Panels

Panels for high-end mobile applications – even in the fail-safe area of machines and widely distributed plants. The process communication can be wired or via WLAN.

- Innovative operation from 4" to 9"
- Rugged for location-related local operation
- Integrated security concept

## Operator panels

Advanced HMI Panel-based

### SIMATIC HMI Unified Comfort Panels

#### Overview



#### **SIMATIC HMI Unified Comfort Panels**

The new generation of high-end, 7–22-inch HMI devices, part of the new SIMATIC WinCC Unified System, boasts numerous improvements over the predecessor devices in terms of performance, openness and user-friendliness.

Thanks to their capacitive glass front with multi-touch technology, the Unified Comfort Panels are as convenient to use as a smartphone or tablet. The sharp colors and high contrast improve the readability and ease of use.

Visualization on the devices is based on SIMATIC WinCC Unified, the new visualization system in the TIA Portal. This opens up many new opportunities and functionalities for the user – across all device sizes.

Brand new to the SIMATIC HMI product portfolio is the option to expand device functionality with apps. Previously, HMI Panels were used exclusively for visualization software. Thanks to the integration of Siemens Industrial Edge, users can now run other programs simultaneously alongside this standard device functionality. Project-specific requirements can thus be implemented quickly and easily.

The following SIMATIC HMI Unified Comfort Panels are available:

- Standard design:
  - MTP700 Comfort
  - MTP1000 Comfort
  - MTP1200 Comfort
  - MTP1500 Comfort
  - MTP1900 Comfort
  - MTP2200 Comfort
- Neutral design:
  - MTP700 Comfort
  - MTP1000 Comfort
  - MTP1200 Comfort
  - MTP1500 Comfort
  - MTP1900 Comfort
  - MTP2200 Comfort

Starter Kits are available for standard design devices.

These consist of:

- HMI Unified Comfort Panel
- WinCC Unified V16 Comfort
- EDGE Runtime for Unified Comfort (Device-managed) license
- 1.5 m PROFINET cable
- Memory card (32 GB)
- Protective film

More information is available at <https://www.siemens.com/unified-comfort-panels>

#### **SIMATIC WinCC Unified options**

- WinCC Unified Audit Basis
- WinCC Unified Clients (Operate Client and Monitor Client)
- WinCC Unified Database Storage
- WinCC Unified Logging
- WinCC Unified Parameter Control
- WinCC Unified Report Execution
- WinCC Unified Collaboration

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Standard

#### Overview



SIMATIC HMI MTP2200 Unified Comfort Panel Standard design front view

#### **SIMATIC HMI Unified Comfort Panels - standard devices**

SIMATIC HMI Unified Comfort Panels consist of six different devices with varying display sizes.

All devices come with the same number of hardware interfaces and the same functionality – just select the perfect device for your needs based on the screen size.

Each Unified Comfort Panel is available in the standard design with Siemens and SIMATIC HMI branding and a silver-colored aluminum frame.

All Unified Comfort Panels come with integrated Edge functionality.

SIMATIC WinCC Unified contains visualization, communication, alarms/warnings, report creation, administration of parameter sets, archiving of user administration.

Furthermore, a WinCC Unified Client Operate (V17 or higher) for remote operator control and monitoring, and a WinCC Unified Client Monitor (V18 or higher) for monitoring only are also included. Additional clients can be enabled with a license. Up to three client licenses can be used.

Client access is based on native web technologies such as HTML5, SVG and JavaScript. The visualization can be accessed via any modern web browser – without the need for additional installation.

Siemens Industrial Edge can be used in two different ways:

- Device-managed Edge
- Centrally-managed Edge (planned)

SIMATIC HMI Unified Comfort Panels can also be ordered with a neutral design.

#### Note:

The technical specifications of the neutral design devices correspond to the technical specifications of the devices with standard design.

#### Ordering data

#### Article No.

##### Touch devices for SIMATIC HMI Unified Comfort Panels

##### Standard design

##### **SIMATIC HMI MTP700 Unified Comfort Panel**

6AV2128-3GB06-0AX1

7" widescreen TFT display, touch operation, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source SW which is provided free of charge. See enclosed DVD

##### **SIMATIC HMI MTP1000 Unified Comfort Panel**

6AV2128-3KB06-0AX1

10.1" widescreen TFT display, touch operation, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source SW which is provided free of charge. See enclosed DVD

##### **SIMATIC HMI MTP1200 Unified Comfort Panel**

6AV2128-3MB06-0AX1

12.1" widescreen TFT display, touch operation, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source SW which is provided free of charge. See enclosed DVD

##### **SIMATIC HMI MTP1500 Unified Comfort Panel**

6AV2128-3QB06-0AX1

15.6" widescreen TFT display, touch operation, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source SW which is provided free of charge. See enclosed DVD

##### **SIMATIC HMI MTP1900 Unified Comfort Panel**

6AV2128-3UB06-0AX1

18.5" widescreen TFT display, touch operation, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Standard

Ordering data	Article No.	Article No.	
<p><b>SIMATIC HMI MTP2200 Unified Comfort Panel</b> 21.5" widescreen TFT display, touch operation, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3XB06-0AX1	<p><b>SIMATIC HMI MTP1500 Unified Comfort Panel</b> Neutral, touch operation; 15.6" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3QB36-0AX1
<p><b>Neutral design</b></p> <p><b>SIMATIC HMI MTP700 Unified Comfort Panel</b> Neutral, touch operation; 7" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3GB36-0AX1	<p><b>SIMATIC HMI MTP1900 Unified Comfort Panel</b> Neutral, touch operation; 18.5" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3UB36-0AX1
<p><b>SIMATIC HMI MTP1000 Unified Comfort Panel</b> Neutral, touch operation; 10.1" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3KB36-0AX1	<p><b>SIMATIC HMI MTP2200 Unified Comfort Panel</b> Neutral, touch operation; 21.5" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3XB36-0AX1
<p><b>SIMATIC HMI MTP1200 Unified Comfort Panel</b> Neutral, touch operation; 12.1" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16; with additional certifications for explosion-proof areas and for use in marine engineering (see Technical specifications). Contains open source software, which is provided free of charge. See enclosed DVD</p>	6AV2128-3MB36-0AX1	<p><b>Software</b></p> <p><b>EDGE Runtime for SIMATIC Unified Comfort</b> Runtime software, single license, license key for download, without software and documentation, Class A, email address required for delivery</p>	6AV2170-2BA00-0AA0

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Article number	6AV2128-3GB06-0AX1	6AV2128-3KB06-0AX1	6AV2128-3MB06-0AX1	6AV2128-3QB06-0AX1	6AV2128-3UB06-0AX1	6AV2128-3XB06-0AX1
	SIMATIC HMI MTP700 Unified Comfort	SIMATIC HMI MTP1000 Unified Comfort	SIMATIC HMI MTP1200 Unified Comfort	SIMATIC HMI MTP1500 Unified Comfort	SIMATIC HMI MTP1900 Unified Comfort	SIMATIC HMI MTP2200 Unified Comfort
<b>General information</b>						
Product type designation	MTP700 Unified Comfort	MTP1000 Unified Comfort	MTP1200 Unified Comfort	MTP1500 Unified Comfort	MTP1900 Unified Comfort	MTP2200 Unified Comfort
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	10.1 in	12.1 in	15.6 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	1 280 pixel	1 280 pixel	1 366 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	480 pixel	800 pixel	800 pixel	768 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h	50 000 h; At 25°C	30 000 h; At 25°C
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes	Yes
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Type of output</b>						
<b>Acoustics</b>						
• Speaker	No	No	No	No	No	No
<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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	4; USB 3.1 Gen. 1 (type A)					
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes

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Article number	6AV2128-3GB06-0AX1	6AV2128-3KB06-0AX1	6AV2128-3MB06-0AX1	6AV2128-3QB06-0AX1	6AV2128-3UB06-0AX1	6AV2128-3XB06-0AX1
	SIMATIC HMI MTP700 Unified Comfort	SIMATIC HMI MTP1000 Unified Comfort	SIMATIC HMI MTP1200 Unified Comfort	SIMATIC HMI MTP1500 Unified Comfort	SIMATIC HMI MTP1900 Unified Comfort	SIMATIC HMI MTP2200 Unified Comfort
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20	IP20	IP20
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UKCA 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	Yes	Yes	Yes
CCC	Yes	Yes	Yes	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	Yes	Yes
• cULus Class II Division 2	Yes	Yes	Yes	Yes	Yes	Yes
• FM Class I Division 2	Yes	Yes	Yes	Yes	Yes	Yes
• FM Class II Division 2	Yes	Yes	Yes	Yes	Yes	Yes
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No; included in DNV					
• American Bureau of Shipping (ABS)	Yes	Yes	Yes	Yes	Yes	Yes
• Bureau Veritas (BV)	Yes	Yes	Yes	Yes	Yes	Yes
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes	Yes	Yes
• Korean Register of Shipping (KRS)	Yes	Yes	Yes	Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes	Yes	Yes	Yes
• Chinese Classification Society (CCS)	Yes	Yes	Yes	Yes	Yes	Yes
<b>Ambient conditions</b>						
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C	45 °C	45 °C
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Comfort Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
• WinCC Unified PC Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32

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Article number	6AV2128-3GB06-0AX1	6AV2128-3KB06-0AX1	6AV2128-3MB06-0AX1	6AV2128-3QB06-0AX1	6AV2128-3UB06-0AX1	6AV2128-3XB06-0AX1
	SIMATIC HMI MTP700 Unified Comfort	SIMATIC HMI MTP1000 Unified Comfort	SIMATIC HMI MTP1200 Unified Comfort	SIMATIC HMI MTP1500 Unified Comfort	SIMATIC HMI MTP1900 Unified Comfort	SIMATIC HMI MTP2200 Unified Comfort
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes					
• Web browser	Yes	Yes	Yes	Yes	Yes	Yes
• PDF Viewer	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
• Unified Collaboration	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	No					
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte	12 Mbyte	12 Mbyte	12 Mbyte	12 Mbyte	12 Mbyte
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	600	600	600	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes; as of WinCC V17	Yes; as of WinCC V17	Yes; as of WinCC V17	Yes; as of WinCC V17	Yes; as of WinCC V17	Yes; as of WinCC V17
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• 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	No	No	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20	Yes	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes

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Article number	<b>6AV2128-3GB06-0AX1</b>	<b>6AV2128-3KB06-0AX1</b>	<b>6AV2128-3MB06-0AX1</b>	<b>6AV2128-3QB06-0AX1</b>	<b>6AV2128-3UB06-0AX1</b>	<b>6AV2128-3XB06-0AX1</b>
	SIMATIC HMI MTP700 Unified Comfort	SIMATIC HMI MTP1000 Unified Comfort	SIMATIC HMI MTP1200 Unified Comfort	SIMATIC HMI MTP1500 Unified Comfort	SIMATIC HMI MTP1900 Unified Comfort	SIMATIC HMI MTP2200 Unified Comfort
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
USB memory	Yes	Yes	Yes	Yes	Yes	Yes
Network camera	No	No	No	No	No	No
<b>Mechanics/material</b>						
Enclosure material (front)						
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
<b>Dimensions</b>						
Width of the housing front	214 mm	280 mm	326 mm	398 mm	464 mm	529 mm
Height of housing front	158 mm	205 mm	237 mm	257 mm	294 mm	331 mm
Mounting cutout, width	198.3 mm	264.6 mm	310.6 mm	382 mm	448 mm	513 mm
Mounting cutout, height	142 mm	189.1 mm	221.1 mm	241 mm	278 mm	315 mm
Overall depth	63.6 mm	63.6 mm	64 mm	73 mm	73 mm	73 mm
<b>Weights</b>						
Weight (without packaging)	1.4 kg	2.1 kg	2.8 kg	4.3 kg	5.5 kg	6.9 kg

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	SIMATIC HMI MTP700 Unified Comfort Neutr	SIMATIC HMI MTP1000 Unified Comfort Neut	SIMATIC HMI MTP1200 Unified Comfort Neut	SIMATIC HMI MTP1500 Unified Comfort Neut	SIMATIC HMI MTP1900 Unified Comfort Neut	SIMATIC HMI MTP2200 Unified Comfort Neut
<b>General information</b>						
Product type designation	MTP700 Unified Comfort	MTP1000 Unified Comfort	MTP1200 Unified Comfort	MTP1500 Unified Comfort	MTP1900 Unified Comfort	MTP2200 Unified Comfort
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	10.1 in	12.1 in	15.6 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	1 280 pixel	1 280 pixel	1 366 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	480 pixel	800 pixel	800 pixel	768 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h	50 000 h; At 25°C	30 000 h; At 25°C
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes	Yes
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Type of output</b>						
<b>Acoustics</b>						
• Speaker	No	No	No	No	No	No
<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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	4; USB 3.1 Gen. 1 (type A)					
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes

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	SIMATIC HMI MTP700 Unified Comfort Neutr	SIMATIC HMI MTP1000 Unified Comfort Neut	SIMATIC HMI MTP1200 Unified Comfort Neut	SIMATIC HMI MTP1500 Unified Comfort Neut	SIMATIC HMI MTP1900 Unified Comfort Neut	SIMATIC HMI MTP2200 Unified Comfort Neut
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20	IP20	IP20
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UKCA 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	Yes	Yes	Yes
CCC	Yes	Yes	Yes	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	Yes	Yes
• cULus Class II Division 2	Yes	Yes	Yes	Yes	Yes	Yes
• FM Class I Division 2	Yes	Yes	Yes	Yes	Yes	Yes
• FM Class II Division 2	Yes	Yes	Yes	Yes	Yes	Yes
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No; included in DNV					
• American Bureau of Shipping (ABS)	Yes	Yes	Yes	Yes	Yes	Yes
• Bureau Veritas (BV)	Yes	Yes	Yes	Yes	Yes	Yes
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes	Yes	Yes
• Korean Register of Shipping (KRS)	Yes	Yes	Yes	Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes	Yes	Yes	Yes
• Chinese Classification Society (CCS)	Yes	Yes	Yes	Yes	Yes	Yes
<b>Ambient conditions</b>						
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C					
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C	45 °C	45 °C
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Comfort Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
• WinCC Unified PC Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32

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#### Technical specifications

Article number	6AV2128-3GB36-0AX1	6AV2128-3KB36-0AX1	6AV2128-3MB36-0AX1	6AV2128-3QB36-0AX1	6AV2128-3UB36-0AX1	6AV2128-3XB36-0AX1
	SIMATIC HMI MTP700 Unified Comfort Neutr	SIMATIC HMI MTP1000 Unified Comfort Neut	SIMATIC HMI MTP1200 Unified Comfort Neut	SIMATIC HMI MTP1500 Unified Comfort Neut	SIMATIC HMI MTP1900 Unified Comfort Neut	SIMATIC HMI MTP2200 Unified Comfort Neut
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes					
• Web browser	Yes	Yes	Yes	Yes	Yes	Yes
• PDF Viewer	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
• Unified Collaboration	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	No					
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive					
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte					
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	600	600	600	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes; as of WinCC V17					
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• 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	No	No	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20	Yes	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20	Yes; as of WinCC Unified V20
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes

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#### Technical specifications

Article number	6AV2128-3GB36-0AX1	6AV2128-3KB36-0AX1	6AV2128-3MB36-0AX1	6AV2128-3QB36-0AX1	6AV2128-3UB36-0AX1	6AV2128-3XB36-0AX1
	SIMATIC HMI MTP700 Unified Comfort Neutr	SIMATIC HMI MTP1000 Unified Comfort Neut	SIMATIC HMI MTP1200 Unified Comfort Neut	SIMATIC HMI MTP1500 Unified Comfort Neut	SIMATIC HMI MTP1900 Unified Comfort Neut	SIMATIC HMI MTP2200 Unified Comfort Neut
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader					
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
USB memory	Yes	Yes	Yes	Yes	Yes	Yes
Network camera	No	No	No	No	No	No
<b>Mechanics/material</b>						
Enclosure material (front)						
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
<b>Dimensions</b>						
Width of the housing front	214 mm	280 mm	326 mm	398 mm	464 mm	529 mm
Height of housing front	158 mm	205 mm	237 mm	257 mm	294 mm	331 mm
Mounting cutout, width	198.3 mm	264.6 mm	310.6 mm	382 mm	447.9 mm	513 mm
Mounting cutout, height	142 mm	189.1 mm	221.1 mm	241 mm	277.9 mm	315 mm
Overall depth	63.6 mm	63.6 mm	64 mm	73 mm	73 mm	73 mm
<b>Weights</b>						
Weight (without packaging)	1.4 kg	2.1 kg	2.8 kg	4.3 kg	5.5 kg	6.9 kg

#### More information

Every Unified Comfort Panel is available in two different design variants.

- The standard design has Siemens and SIMATIC HMI branding on the front and a silver-colored aluminum frame.
- The neutral design has no branding on the front and a black aluminum frame.

#### Note:

The devices with the Article No. extension \*-0AX1 have additional certifications for explosion-proof areas as well as for use in shipbuilding (see technical specifications). All other functions and properties are fully compatible with the devices with Article No. extension \*-0AX0.

More information is available on the internet at <https://www.siemens.com/unified-comfort-panels>

For selected SIMATIC HMI Unified Comfort Panels, the option exists to apply the customer name or logo or to select the membrane color in accordance with the customer's corporate design. This is also possible for small quantities.

More information is available at

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

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIPLUS HMI Unified Comfort Panels Standard

#### Overview



#### SIPLUS HMI Unified Comfort Panels - standard devices

SIPLUS HMI Unified Comfort Panels consist of six different devices with varying display sizes. All devices come with the same number of hardware interfaces and the same functionality – just select the perfect device for your needs based on the screen size.

Each Unified Comfort Panel is available in the standard design with Siemens and SIMATIC HMI branding and a silver-colored aluminum frame.

All Unified Comfort Panels come with integrated Edge functionality.

SIMATIC WinCC Unified contains visualization, communication, alarms/warnings, report creation, administration of parameter sets, archiving of user administration. Furthermore, a WinCC Unified Client Operate (V17 or higher) for remote operator control and monitoring, and a WinCC Unified Client Monitor (V18 or higher) for monitoring only are also included. Additional clients can be enabled with a license. Up to three client licenses can be used.

Client access is based on native web technologies such as HTML5, SVG and JavaScript. The visualization can be accessed via any modern web browser – without the need for additional installation.

Siemens Industrial Edge can be used in two different ways:

- Device-managed Edge
- Centrally-managed Edge (planned)

SIMATIC HMI Unified Comfort Panels can also be ordered with a neutral design.

#### Note:

The technical specifications of the neutral design devices correspond to the technical specifications of the devices with standard design.

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 Unified Comfort Panels

##### Standard design

SIPLUS HMI MTP700 Unified Comfort, with conformal coating

**6AG1128-3GB06-4AX1**

SIMATIC HMI MTP1000 Unified Comfort Panel, with conformal coating

**6AG1128-3KB06-4AX1**

SIMATIC HMI MTP1200 Unified Comfort Panel, with conformal coating

**6AG1128-3MB06-4AX1**

##### Accessories

##### EDGE Runtime for SIMATIC Unified Comfort

Runtime software, single license, license key for download, without software and documentation, Class A, email address required for delivery

**6AV2170-2BA00-0AA0**

##### Accessories

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

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIPLUS HMI Unified Comfort Panels Standard

#### Technical specifications

Article number	6AG1128-3GB06-4AX1 SIPLUS HMI MTP700 Unified Comfort	6AG1128-3KB06-4AX1 SIPLUS HMI MTP1000 Unified Comfort	6AG1128-3MB06-4AX1 SIPLUS HMI MTP1200 Unified Comfort
<b>General information</b>			
Product type designation	MTP700 Unified Comfort	MTP1000 Unified Comfort	MTP1200 Unified Comfort
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
<b>Operation (vertical installation)</b>			
- For vertical installation, min.	0 °C; = Tmin	0 °C; = Tmin	0 °C; = Tmin
- For vertical installation, max.	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
• 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)
<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), horizontal at vertical mounting position	100 %; RH incl. condensation/frost (no commissioning when condensation present), horizontal at vertical mounting position	100 %; RH incl. condensation/frost (no commissioning when condensation present), horizontal at 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	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	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); *	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, fungal and dry rot spores (excluding fauna)	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
- 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); *	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)	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)	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

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Overview



SIMATIC HMI MTP2200 Unified Comfort Panel Hygienic, neutral design

#### **SIMATIC HMI Unified Comfort Panels Hygienic - standard devices**

SIMATIC HMI Unified Comfort Panels Hygienic comprise six different devices with different display sizes. All devices come with the same number of hardware interfaces and the same functionality – just select the perfect device for your needs based on the screen size.

Each Unified Comfort Panel Hygienic is available in a standard design with Siemens and SIMATIC HMI branding and a silver-colored aluminum frame.

All Unified Comfort Panels Hygienic are supplied with integrated Edge functionality.

SIMATIC WinCC Unified includes visualization, communication, alarms/messages, report generation, parameter set management, archiving, and user administration.

Furthermore, a WinCC Unified Client Operate (V17 or higher) for remote operator control and monitoring, and a WinCC Unified Client Monitor (V18 or higher) for monitoring only are also included. Additional clients can be enabled with a license.

In total, up to three client licenses can be used.

Client access is based on native web technologies such as HTML5, SVG and JavaScript. The visualization can be accessed via any modern web browser – without the need for additional installation.

Siemens Industrial Edge can be used in two different ways:

- Device-managed Edge
- Centrally-managed Edge (planned)

SIMATIC HMI Unified Comfort Panels Hygienic can also be ordered with a neutral design.

#### Note:

The technical specifications of the neutral design devices correspond to the technical specifications of the devices with standard design.

#### Ordering data

#### Article No.

##### Unified Comfort Panels Hygienic

##### **SIMATIC HMI MTP700 Unified Comfort Hygienic**

6AV2128-3GB40-0AX0

Touch operation,  
7" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as from  
WinCC Unified Comfort V17,  
contains open source software,  
which is provided free of charge,  
see enclosed DVD

##### **SIMATIC HMI MTP1000 Unified Comfort Hygienic**

6AV2128-3KB40-0AX0

Touch operation,  
10.1" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as from  
WinCC Unified Comfort V17,  
contains open source software,  
which is provided free of charge,  
see enclosed DVD

##### **SIMATIC HMI MTP1200 Unified Comfort Hygienic**

6AV2128-3MB40-0AX0

Touch operation,  
12.1" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as from  
WinCC Unified Comfort V17,  
contains open source software,  
which is provided free of charge,  
see enclosed DVD

##### **SIMATIC HMI MTP1500 Unified Comfort Hygienic**

6AV2128-3QB40-0AX0

Touch operation,  
15.6" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as from  
WinCC Unified Comfort V17,  
contains open source software,  
which is provided free of charge,  
see enclosed DVD

##### **SIMATIC HMI MTP1900 Unified Comfort Hygienic**

6AV2128-3UB40-0AX0

Touch operation,  
18.5" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as from  
WinCC Unified Comfort V17,  
contains open source software,  
which is provided free of charge,  
see enclosed DVD

##### **SIMATIC HMI MTP2200 Unified Comfort Hygienic**

6AV2128-3XB40-0AX0

Touch operation,  
21.5" widescreen TFT display,  
16 million colors,  
PROFINET interface,  
configurable as from  
WinCC Unified Comfort V17,  
contains open source software,  
which is provided free of charge,  
see enclosed DVD

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

Ordering data	Article No.	Ordering data	Article No.
<b>SIMATIC HMI MTP700 Unified Comfort Hygienic Neutral</b> Neutral, touch operation, 7" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V16, contains open source software, which is provided free of charge, see enclosed DVD	6AV2128-3GB70-0AX0	<b>SIMATIC HMI MTP1900 Unified Comfort Hygienic Neutral</b> Neutral, touch operation, 18.5" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V17, contains open source software, which is provided free of charge, see enclosed DVD	6AV2128-3UB70-0AX0
<b>SIMATIC HMI MTP1000 Unified Comfort Hygienic Neutral</b> Neutral, touch operation, 10.1" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V17, contains open source software, which is provided free of charge, see enclosed DVD	6AV2128-3KB70-0AX0	<b>SIMATIC HMI MTP2200 Unified Comfort Hygienic Neutral</b> Neutral, touch operation, 21.5" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V17, contains open source software, which is provided free of charge, see enclosed DVD	6AV2128-3XB70-0AX0
<b>SIMATIC HMI MTP1200 Unified Comfort Hygienic Neutral</b> Neutral, touch operation, 12.1" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V17, contains open source software, which is provided free of charge, see enclosed DVD	6AV2128-3MB70-0AX0	<b>MTP700 Hygienic Service Pack 7"</b>	6AV2185-4GA20-0AX0
<b>SIMATIC HMI MTP1500 Unified Comfort Hygienic Neutral</b> Neutral, touch operation, 15.6" widescreen TFT display, 16 million colors, PROFINET interface, configurable as from WinCC Unified Comfort V17, contains open source software, which is provided free of charge, see enclosed DVD	6AV2128-3QB70-0AX0	<b>MTP1000 Hygienic Service Pack 10"</b>	6AV2185-4KA20-0AX0
		<b>MTP1200 Hygienic Service Pack, IFP1200 Hygienic 12"</b>	6AV2185-4MA20-0AX0
		<b>MTP1500 Hygienic Service Pack, IFP1500 Hygienic 15"</b>	6AV2185-4QA20-0AX0
		<b>MTP1900 Hygienic Service Pack, IFP1900 Hygienic 19"</b>	6AV2185-4UA20-0AX0
		<b>MTP2200 Hygienic Service Pack, IFP2200 Hygienic 22"</b>	6AV2185-4XA20-0AX0

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB40-0AX0	6AV2128-3KB40-0AX0	6AV2128-3MB40-0AX0	6AV2128-3QB40-0AX0	6AV2128-3UB40-0AX0	6AV2128-3XB40-0AX0
	SIMATIC HMI MTP700 Hygienic	SIMATIC HMI MTP1000 Hygienic	SIMATIC HMI MTP1200 Hygienic	SIMATIC HMI MTP1500 Hygienic	SIMATIC HMI MTP1900 Hygienic	SIMATIC HMI MTP2200 Hygienic
<b>General information</b>						
Product type designation	MTP700 Unified Comfort Hygienic	MTP1000 Unified Comfort	MTP1200 Unified Comfort Hygienic	MTP1500 Unified Comfort	MTP1900 Unified Comfort	MTP2200 Unified Comfort Hygienic
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	10.1 in	12.1 in	15.6 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	1 280 pixel	1 280 pixel	1 366 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	480 pixel	800 pixel	800 pixel	768 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h	50 000 h; At 25°C	30 000 h
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Monitor keyboard	Yes	Yes		Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes	Yes
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Type of output</b>						
Acoustics						
• Speaker	No	No	No	No	No	No
<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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	4; USB 3.1 Gen. 1 (type A)					
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB40-0AX0	6AV2128-3KB40-0AX0	6AV2128-3MB40-0AX0	6AV2128-3QB40-0AX0	6AV2128-3UB40-0AX0	6AV2128-3XB40-0AX0
	SIMATIC HMI MTP700 Hygienic	SIMATIC HMI MTP1000 Hygienic	SIMATIC HMI MTP1200 Hygienic	SIMATIC HMI MTP1500 Hygienic	SIMATIC HMI MTP1900 Hygienic	SIMATIC HMI MTP2200 Hygienic
<b>Degree and class of protection</b>						
IP (at the front)	IP69	IP69	IP69	IP69	IP69	IP69
IP (rear)	IP20	IP20	IP20	IP20	IP20	IP20
NEMA (front)						
• Enclosure Type 4x at the front	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation
• Enclosure Type 12 at the front	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation
<b>Standards, approvals, certificates</b>						
CE mark	Yes; CE marking / EC Declaration of Conformity	Yes; CE marking / EC Declaration of Conformity	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approval	No	No				
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation
EAC (formerly Gost-R)	Yes	Yes	Yes	Yes	Yes	Yes
CCC	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation
<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	Yes	Yes
• cULus Class II Division 2	Yes	Yes	Yes	Yes	Yes	Yes
• FM Class I Division 2	No	No	No	No	No	No
• FM Class II Division 2	No	No	No	No	No	No
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No	No	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No	No	No
• Korean Register of Shipping (KRS)	No	No	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)	No	No	No	No	No	No
<b>Ambient conditions</b>						
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C	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

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB40-0AX0	6AV2128-3KB40-0AX0	6AV2128-3MB40-0AX0	6AV2128-3QB40-0AX0	6AV2128-3UB40-0AX0	6AV2128-3XB40-0AX0
	SIMATIC HMI MTP700 Hygienic	SIMATIC HMI MTP1000 Hygienic	SIMATIC HMI MTP1200 Hygienic	SIMATIC HMI MTP1500 Hygienic	SIMATIC HMI MTP1900 Hygienic	SIMATIC HMI MTP2200 Hygienic
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Comfort Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
• WinCC Unified PC Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes	Yes	Yes	Yes	Yes	Yes
• Web browser	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	No	No	No	No	No	No
• Unified Collaboration	No	No	No	No	No	No
Number of Visual Basic Scripts	No	No	No	No	No	No
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive					
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte	12 Mbyte		12 Mbyte	12 Mbyte	12 Mbyte
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	600	600	600	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes; as of WinCC Unified V17					

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB40-0AX0	6AV2128-3KB40-0AX0	6AV2128-3MB40-0AX0	6AV2128-3QB40-0AX0	6AV2128-3UB40-0AX0	6AV2128-3XB40-0AX0
	SIMATIC HMI MTP700 Hygienic	SIMATIC HMI MTP1000 Hygienic	SIMATIC HMI MTP1200 Hygienic	SIMATIC HMI MTP1500 Hygienic	SIMATIC HMI MTP1900 Hygienic	SIMATIC HMI MTP2200 Hygienic
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• 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	No	No	No	No	No	Yes
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	No	No	No	No	No	No
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader					
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
USB memory	Yes	Yes	Yes	Yes	Yes	Yes
Network camera	No	No	No	No	No	No
<b>Accessories</b>						
Further accessories are available	No; Service Pack available soon					
<b>Mechanics/material</b>						
Enclosure material (front)						
• Plastic	Yes; shatter protection film					
• Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes
<b>Dimensions</b>						
Width of the housing front	225.6 mm	292 mm	338 mm	412 mm	479 mm	556 mm
Height of housing front	169.6 mm	217 mm	249 mm	273 mm	309 mm	358 mm
Mounting cutout, width	198.3 mm	264 mm	310 mm	382 mm	448 mm	513 mm
Mounting cutout, height	142.1 mm	189 mm	221 mm	241 mm	278 mm	315 mm
Overall depth	66.3 mm	67 mm	64 mm	79 mm	79 mm	79 mm
<b>Weights</b>						
Weight (without packaging)	1.9 kg	2.65 kg	3.4 kg	5.4 kg	6.7 kg	8.15 kg

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB70-0AX0	6AV2128-3KB70-0AX0	6AV2128-3MB70-0AX0	6AV2128-3QB70-0AX0	6AV2128-3UB70-0AX0	6AV2128-3XB70-0AX0
	SIMATIC HMI MTP700 Hygienic Neutral	SIMATIC HMI MTP1000 Hygienic Neutral	SIMATIC HMI MTP1200 Hygienic Neutral	SIMATIC HMI MTP1500 Hygienic Neutral	SIMATIC HMI MTP1900 Hygienic Neutral	SIMATIC HMI MTP2200 Hygienic Neutral
<b>General information</b>						
Product type designation	MTP700 Unified Comfort Hygienic	MTP1000 Unified Comfort	MTP1200 Unified Comfort Hygienic	MTP1500 Unified Comfort	MTP1900 Unified Comfort	MTP2200 Unified Comfort Hygienic
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	10.1 in	12.1 in	15.6 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	1 280 pixel	1 280 pixel	1 366 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	480 pixel	800 pixel	800 pixel	768 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h	50 000 h; At 25°C	30 000 h
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Monitor keyboard	Yes	Yes		Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting in portrait format possible	Yes	Yes	Yes	Yes	Yes	Yes
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Type of output</b>						
<b>Acoustics</b>						
• Speaker	No	No	No	No	No	No
<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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	4; USB 3.0	4; USB 3.1 Gen. 1 (type A)				
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>						
IP (at the front)	IP69	IP69	IP69	IP69	IP69	IP69
IP (rear)	IP20	IP20	IP20	IP20	IP20	IP20
NEMA (front)						
• Enclosure Type 4x at the front	No; in preparation					
• Enclosure Type 12 at the front	No; in preparation					

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB70-0AX0	6AV2128-3KB70-0AX0	6AV2128-3MB70-0AX0	6AV2128-3QB70-0AX0	6AV2128-3UB70-0AX0	6AV2128-3XB70-0AX0
	SIMATIC HMI MTP700 Hygienic Neutral	SIMATIC HMI MTP1000 Hygienic Neutral	SIMATIC HMI MTP1200 Hygienic Neutral	SIMATIC HMI MTP1500 Hygienic Neutral	SIMATIC HMI MTP1900 Hygienic Neutral	SIMATIC HMI MTP2200 Hygienic Neutral
<b>Standards, approvals, certificates</b>						
CE mark	Yes; CE marking / EC Declaration of Conformity	Yes; CE marking / EC Declaration of Conformity	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approval	No	No				
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation
EAC (formerly Gost-R)	Yes	Yes	Yes	Yes	Yes	Yes
CCC	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation	No; in preparation
<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	Yes	Yes
• cULus Class II Division 2	Yes	Yes	Yes	Yes	Yes	Yes
• FM Class I Division 2	No	No	No	No	No	No
• FM Class II Division 2	No	No	No	No	No	No
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No	No	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No	No	No
• Korean Register of Shipping (KRS)	No	No	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)	No	No	No	No	No	No
<b>Ambient conditions</b>						
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	50 °C	50 °C	45 °C	45 °C
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Comfort Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes
• WinCC Unified PC Engineering (TIA Portal)	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB70-0AX0	6AV2128-3KB70-0AX0	6AV2128-3MB70-0AX0	6AV2128-3QB70-0AX0	6AV2128-3UB70-0AX0	6AV2128-3XB70-0AX0
	SIMATIC HMI MTP700 Hygienic Neutral	SIMATIC HMI MTP1000 Hygienic Neutral	SIMATIC HMI MTP1200 Hygienic Neutral	SIMATIC HMI MTP1500 Hygienic Neutral	SIMATIC HMI MTP1900 Hygienic Neutral	SIMATIC HMI MTP2200 Hygienic Neutral
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes	Yes	Yes	Yes	Yes	Yes
• Web browser	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	No	No	No	No	No	No
• Unified Collaboration	No	No	No	No	No	No
Number of Visual Basic Scripts	No	No	No	No	No	No
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive	Yes; Configured as alarm archive
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte	12 Mbyte		12 Mbyte	12 Mbyte	12 Mbyte
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	600	600	600	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	No	Yes; as of WinCC Unified V17				
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panels Hygienic

#### Technical specifications

Article number	6AV2128-3GB70-0AX0	6AV2128-3KB70-0AX0	6AV2128-3MB70-0AX0	6AV2128-3QB70-0AX0	6AV2128-3UB70-0AX0	6AV2128-3XB70-0AX0
	SIMATIC HMI MTP700 Hygienic Neutral	SIMATIC HMI MTP1000 Hygienic Neutral	SIMATIC HMI MTP1200 Hygienic Neutral	SIMATIC HMI MTP1500 Hygienic Neutral	SIMATIC HMI MTP1900 Hygienic Neutral	SIMATIC HMI MTP2200 Hygienic Neutral
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	No	No	No	No	No	Yes
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	No	No	No	No	No	No
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader	Printer, barcode reader
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
USB memory	Yes	Yes	Yes	Yes	Yes	Yes
Network camera	No	No	No	No	No	No
<b>Accessories</b>						
Further accessories are available		No; Service Pack available soon				
<b>Mechanics/material</b>						
Enclosure material (front)						
• Plastic	Yes; shatter protection film	Yes; shatter protection film	Yes; shatter protection film	Yes; shatter protection film	Yes; shatter protection film	Yes; shatter protection film
• Stainless steel	Yes	Yes	Yes	Yes	Yes	Yes
<b>Dimensions</b>						
Width of the housing front	225.6 mm	292 mm	338 mm	412 mm	479 mm	556 mm
Height of housing front	169.6 mm	217 mm	249 mm	273 mm	309 mm	358 mm
Mounting cutout, width	197 mm	264 mm	310 mm	382 mm	448 mm	513 mm
Mounting cutout, height	141 mm	189 mm	221 mm	241 mm	278 mm	315 mm
Overall depth	66 mm	67 mm	64 mm	79 mm	79 mm	79 mm
<b>Weights</b>						
Weight (without packaging)	1.9 kg	2.65 kg	3.4 kg	5.4 kg	6.7 kg	8.15 kg

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Overview



**SIMATIC HMI Unified Comfort PRO: fully-enclosed IP65 degree of protection, ready-to-use, can be installed directly at the machine**

SIMATIC HMI Unified Comfort Panels PRO in 12", 15", 19" and 22" widescreen formats expand the Unified Comfort Panel portfolio to include devices with fully-enclosed IP65 protection. The rugged aluminum enclosure enables it to be used directly at the machine and guarantees durability, even in harsh and extreme operating environments.

#### Highlights:

- All-round IP65 degree of protection
- 100% Unified Comfort Panel functionality incl. Siemens Industrial Edge
- Identical display resolutions as the SIMATIC HMI Unified Comfort Panels
- Can be adapted to support arm system of various manufacturers
- Extension with hardware operator controls by means of Extension Units
- Fast integration capability
- Mechanical compatibility with SIMATIC HMI Comfort Panel PRO devices (support arm and Extension Unit connection)
- Devices can be ordered in Siemens and neutral design (without Siemens brand)

More information is available at  
<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 SIMATIC HMI PRO basic devices, these components enable flexible adaptation to individual customer requirements for operator control and monitoring at the machine level, as well as offering a versatile and attractive solution for cabinet-free visualization and automation.

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 "Industrial Computing" -> "Devices for special requirements" -> "PROtected devices and system components".

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Ordering data

##### SIMATIC Unified Comfort Panel PRO

##### MTP1200 Unified Comfort PRO

12.1" TFT display,  
1280 x 800 pixels,  
16 million colors; multi-touch;  
1 x RS422/485,  
1 x PROFINET/Industrial Ethernet  
interface with MRP (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slot; 4 x USB;

- For support arm (not extendable, flange on top)
- For support arm (not extendable, flange on top), neutral front
- For support arm (extendable, round tube)
- For support arm (extendable, round tube), neutral front
- For supporting foot (extendable, flange below)
- For supporting foot (extendable, flange below), neutral front

6AV2128-3MB27-0AX0

6AV2128-3MB57-0AX0

6AV2128-3MB27-0BX0

6AV2128-3MB57-0BX0

6AV2128-3MB27-1BX0

6AV2128-3MB57-1BX0

##### MTP1500 Unified Comfort PRO

15.6" TFT display,  
1366 x 768 pixels,  
16 million colors; multi-touch;  
1 x RS422/485,  
1 x PROFINET/Industrial Ethernet  
interface with MRP (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slot; 4 x USB;

- For support arm (not extendable, flange on top)
- For support arm (not extendable, flange on top), neutral front
- For support arm (extendable, round tube)
- For support arm (extendable, round tube), neutral front
- For supporting foot (extendable, flange below)
- For supporting foot (extendable, flange below), neutral front

6AV2128-3QB27-0AX0

6AV2128-3QB57-0AX0

6AV2128-3QB27-0BX0

6AV2128-3QB57-0BX0

6AV2128-3QB27-1BX0

6AV2128-3QB57-1BX0

##### MTP1900 Unified Comfort PRO

18.5" TFT display,  
1920 x 1080 pixels,  
16 million colors; multi-touch;  
1 x RS422/485,  
1 x PROFINET/Industrial Ethernet  
interface with MRP (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slot; 4 x USB;

- For support arm (not extendable, flange on top)
- For support arm (not extendable, flange on top), neutral front
- For support arm (extendable, round tube)
- For support arm (extendable, round tube), neutral front
- For supporting foot (extendable, flange below)
- For supporting foot (extendable, flange below), neutral front

6AV2128-3UB27-0AX0

6AV2128-3UB57-0AX0

6AV2128-3UB27-0BX0

6AV2128-3UB57-0BX0

6AV2128-3UB27-1BX0

6AV2128-3UB57-1BX0

##### MTP2200 Unified Comfort PRO

21.5" TFT display,  
1920 x 1080 pixels,  
16 million colors; multi-touch;  
1 x RS422/485,  
1 x PROFINET/Industrial Ethernet  
interface with MRP (2 ports);  
1 x Ethernet (Gigabit);  
2 x SD card slot; 4 x USB;

- For support arm (not extendable, flange on top)
- For support arm (not extendable, flange on top), neutral front
- For support arm (extendable, round tube)
- For support arm (extendable, round tube), neutral front
- For supporting foot (extendable, flange below)
- For supporting foot (extendable, flange below), neutral front

6AV2128-3XB27-0AX0

6AV2128-3XB57-0AX0

6AV2128-3XB27-0BX0

6AV2128-3XB57-0BX0

6AV2128-3XB27-1BX0

6AV2128-3XB57-1BX0

#### Technical specifications

Article number	6AV2128-3MB27-0AX0	6AV2128-3MB57-0AX0	6AV2128-3MB27-0BX0	6AV2128-3MB57-0BX0	6AV2128-3MB27-1BX0	6AV2128-3MB57-1BX0
	SIMATIC HMI MTP1200 Unified Comfort PRO					
<b>General information</b>						
Product type designation	MTP1200 Unified Comfort PRO		MTP1200 Unified Comfort PRO		MTP1200 Unified Comfort PRO	
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	12.1 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	1 280 pixel					
• Vertical image resolution	800 pixel					
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h					
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3MB27-0AX0	6AV2128-3MB57-0AX0	6AV2128-3MB27-0BX0	6AV2128-3MB57-0BX0	6AV2128-3MB27-1BX0	6AV2128-3MB57-1BX0
	SIMATIC HMI MTP1200 Unified Comfort PRO					
<b>Installation type/mounting</b>						
Mounting	Support arm	Support arm	Support arm	Support arm	Pedestal	Pedestal
Mounting in portrait format possible	No	No	No	No	No	No
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Type of output</b>						
Acoustics						
• Speaker	No	No	No	No	No	No
<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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	4; USB 3.1 Gen. 1 (type A)					
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3MB27-0AX0	6AV2128-3MB57-0AX0	6AV2128-3MB27-0BX0	6AV2128-3MB57-0BX0	6AV2128-3MB27-1BX0	6AV2128-3MB57-1BX0
	SIMATIC HMI MTP1200 Unified Comfort PRO					
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approval	No; in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	No; in preparation					
EAC (formerly Gost-R)	No; in preparation					
CCC	No; in preparation					
<b>Use in hazardous areas</b>						
• ATEX Zone 2	No; in preparation					
• ATEX Zone 22	No; in preparation					
• IECEx Zone 2	No; in preparation					
• IECEx Zone 22	No; in preparation					
• cULus Class I Zone 2, Division 2	No; in preparation					
• cULus Class II Division 2	No	No	No	No	No	No
• FM Class I Division 2	No; in preparation					
• FM Class II Division 2	No	No	No	No	No	No
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No	No	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No	No	No
• Korean Register of Shipping (KRS)	No	No	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)	No	No	No	No	No	No
<b>Ambient conditions</b>						
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C					
- For vertical installation, max.	45 °C					
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Basic Engineering (TIA Portal)	No	No	No	No	No	No
• WinCC Unified Comfort Engineering (TIA Portal)	Yes; V18 or higher					
• WinCC Unified PC Engineering (TIA Portal)	Yes; V18 or higher					

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3MB27-0AX0	6AV2128-3MB57-0AX0	6AV2128-3MB27-0BX0	6AV2128-3MB57-0BX0	6AV2128-3MB27-1BX0	6AV2128-3MB57-1BX0
	SIMATIC HMI MTP1200 Unified Comfort PRO					
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes	Yes	Yes	Yes	Yes	Yes
• Web browser	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
• Unified Collaboration	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	No	No	No	No	No	No
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive					
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte					
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	600	600	600	600	600	600
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3MB27-0AX0	6AV2128-3MB57-0AX0	6AV2128-3MB27-0BX0	6AV2128-3MB57-0BX0	6AV2128-3MB27-1BX0	6AV2128-3MB57-1BX0
	SIMATIC HMI MTP1200 Unified Comfort PRO					
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	No	No	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	No	No	No	No	No	No
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader					
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
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	313 mm					
Height of housing front	225 mm; Without basic adapter					
<b>Weights</b>						
Weight (without packaging)	5.1 kg	5.1 kg	5 kg	5 kg	5.1 kg	5.1 kg

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3QB27-0AX0	6AV2128-3QB57-0AX0	6AV2128-3QB27-0BX0	6AV2128-3QB57-0BX0	6AV2128-3QB27-1BX0	6AV2128-3QB57-1BX0
	SIMATIC HMI MTP1500 Unified Comfort PRO	SIMATIC HMI MTP1500 Unified Comfort PRO	SIMATIC HMI MTP1500 Unified Comfort PRO	SIMATIC HMI MTP1500 Unified Comfort PRO	SIMATIC HMI MTP1500 Unified Comfort PRO	SIMATIC HMI MTP1500 Unified Comfort PRO
<b>General information</b>						
Product type designation	MTP1500 Unified Comfort PRO	MTP1500 Unified Comfort PRO Neutral Front	MTP1500 Unified Comfort PRO		MTP1500 Unified Comfort PRO	MTP1500 Unified Comfort PRO Neutral Front
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	15.6 in	15.6 in	15.6 in	15.6 in	15.6 in	15.6 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	1 366 pixel	1 366 pixel	1 366 pixel	1 366 pixel	1 366 pixel	1 366 pixel
• Vertical image resolution	768 pixel	768 pixel	768 pixel	768 pixel	768 pixel	768 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting	Support arm	Support arm	Support arm	Support arm	Pedestal	Pedestal
Mounting in portrait format possible	No	No	No	No	No	No
<b>Supply voltage</b>						
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
<b>Type of output</b>						
Acoustics						
• Speaker	No	No	No	No	No	No
<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	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	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	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3QB27-0AX0	6AV2128-3QB57-0AX0	6AV2128-3QB27-0BX0	6AV2128-3QB57-0BX0	6AV2128-3QB27-1BX0	6AV2128-3QB57-1BX0
	SIMATIC HMI MTP1500 Unified Comfort PRO					
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approval	No; in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	No; in preparation					
EAC (formerly Gost-R)	No; in preparation					
CCC	No; in preparation					
<b>Use in hazardous areas</b>						
• ATEX Zone 2	No; in preparation					
• ATEX Zone 22	No; in preparation					
• IECEx Zone 2	No; in preparation					
• IECEx Zone 22	No; in preparation					
• cULus Class I Zone 2, Division 2	No; in preparation					
• cULus Class II Division 2	No	No	No	No	No	No
• FM Class I Division 2	No; in preparation					
• FM Class II Division 2	No	No	No	No	No	No
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No	No	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No	No	No
• Korean Register of Shipping (KRS)	No	No	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)	No	No	No	No	No	No
<b>Ambient conditions</b>						
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C					
- For vertical installation, max.	45 °C					
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Basic Engineering (TIA Portal)	No	No	No	No	No	No
• WinCC Unified Comfort Engineering (TIA Portal)	Yes; V18 or higher					
• WinCC Unified PC Engineering (TIA Portal)	Yes; V18 or higher					

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3QB27-0AX0	6AV2128-3QB57-0AX0	6AV2128-3QB27-0BX0	6AV2128-3QB57-0BX0	6AV2128-3QB27-1BX0	6AV2128-3QB57-1BX0
	SIMATIC HMI MTP1500 Unified Comfort PRO					
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes	Yes	Yes	Yes	Yes	Yes
• Web browser	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
• Unified Collaboration	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	No	No	No	No	No	No
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive					
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte					
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	800	800	800	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3QB27-0AX0	6AV2128-3QB57-0AX0	6AV2128-3QB27-0BX0	6AV2128-3QB57-0BX0	6AV2128-3QB27-1BX0	6AV2128-3QB57-1BX0
	SIMATIC HMI MTP1500 Unified Comfort PRO					
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	No	No	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	No	No	No	No	No	No
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader					
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
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	396 mm					
Height of housing front	255 mm; Without basic adapter					
<b>Weights</b>						
Weight (without packaging)	6.1 kg	6.1 kg	6 kg	6 kg	6.1 kg	6.1 kg

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3UB27-0AX0	6AV2128-3UB57-0AX0	6AV2128-3UB27-0BX0	6AV2128-3UB57-0BX0	6AV2128-3UB27-1BX0	6AV2128-3UB57-1BX0
	SIMATIC HMI MTP1900 Unified Comfort PRO	SIMATIC HMI MTP1900 Unified Comfort PRO	SIMATIC HMI MTP1900 Unified Comfort PRO	SIMATIC HMI MTP1900 Unified Comfort PRO	SIMATIC HMI MTP1900 Unified Comfort PRO	SIMATIC HMI MTP1900 Unified Comfort PRO
<b>General information</b>						
Product type designation	MTP1900 Unified Comfort PRO	MTP1900 Unified Comfort PRO Neutral Front	MTP1900 Unified Comfort PRO		MTP1900 Unified Comfort PRO	MTP1900 Unified Comfort PRO Neutral Front
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	18.5 in	18.5 in	18.5 in	18.5 in	18.5 in	18.5 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	1 920 pixel	1 920 pixel	1 920 pixel	1 920 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	1 080 pixel	1 080 pixel	1 080 pixel	1 080 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting	Support arm	Support arm	Support arm	Support arm	Pedestal	Pedestal
Mounting in portrait format possible	No	No	No	No	No	No
<b>Supply voltage</b>						
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
<b>Type of output</b>						
Acoustics						
• Speaker	No	No	No	No	No	No
<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	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	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	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3UB27-0AX0	6AV2128-3UB57-0AX0	6AV2128-3UB27-0BX0	6AV2128-3UB57-0BX0	6AV2128-3UB27-1BX0	6AV2128-3UB57-1BX0
	SIMATIC HMI MTP1900 Unified Comfort PRO					
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approval	No; in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	No; in preparation					
EAC (formerly Gost-R)	No; in preparation					
CCC	No; in preparation					
<b>Use in hazardous areas</b>						
• ATEX Zone 2	No; in preparation					
• ATEX Zone 22	No; in preparation					
• IECEx Zone 2	No; in preparation					
• IECEx Zone 22	No; in preparation					
• cULus Class I Zone 2, Division 2	No; in preparation					
• cULus Class II Division 2	No	No	No	No	No	No
• FM Class I Division 2	No; in preparation					
• FM Class II Division 2	No	No	No	No	No	No
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No	No	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No	No	No
• Korean Register of Shipping (KRS)	No	No	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)	No	No	No	No	No	No
<b>Ambient conditions</b>						
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C					
- For vertical installation, max.	45 °C					
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Basic Engineering (TIA Portal)	No	No	No	No	No	No
• WinCC Unified Comfort Engineering (TIA Portal)	Yes; V18 or higher					
• WinCC Unified PC Engineering (TIA Portal)	Yes; V18 or higher					

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3UB27-0AX0	6AV2128-3UB57-0AX0	6AV2128-3UB27-0BX0	6AV2128-3UB57-0BX0	6AV2128-3UB27-1BX0	6AV2128-3UB57-1BX0
	SIMATIC HMI MTP1900 Unified Comfort PRO					
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes	Yes	Yes	Yes	Yes	Yes
• Web browser	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
• Unified Collaboration	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	No	No	No	No	No	No
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive					
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte					
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	800	800	800	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3UB27-0AX0	6AV2128-3UB57-0AX0	6AV2128-3UB27-0BX0	6AV2128-3UB57-0BX0	6AV2128-3UB27-1BX0	6AV2128-3UB57-1BX0
	SIMATIC HMI MTP1900 Unified Comfort PRO					
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	No	No	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	No	No	No	No	No	No
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader					
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
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	462 mm					
Height of housing front	292 mm; Without basic adapter					
<b>Weights</b>						
Weight (without packaging)	7.1 kg	7.1 kg	7 kg	7 kg	7.1 kg	7.1 kg

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3XB27-0AX0	6AV2128-3XB57-0AX0	6AV2128-3XB27-0BX0	6AV2128-3XB57-0BX0	6AV2128-3XB27-1BX0	6AV2128-3XB57-1BX0
	SIMATIC HMI MTP2200 Unified Comfort PRO	SIMATIC HMI MTP2200 Unified Comfort PRO	SIMATIC HMI MTP2200 Unified Comfort PRO	SIMATIC HMI MTP2200 Unified Comfort PRO	SIMATIC HMI MTP2200 Unified Comfort PRO	SIMATIC HMI MTP2200 Unified Comfort PRO
<b>General information</b>						
Product type designation	MTP2200 Unified Comfort PRO	MTP2200 Unified Comfort PRO Neutral Front	MTP2200 Unified Comfort PRO		MTP2200 Unified Comfort PRO	MTP2200 Unified Comfort PRO Neutral Front
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	21.5 in	21.5 in	21.5 in	21.5 in	21.5 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	1 920 pixel	1 920 pixel	1 920 pixel	1 920 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	1 080 pixel	1 080 pixel	1 080 pixel	1 080 pixel	1 080 pixel	1 080 pixel
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	30 000 h; At 25°C	30 000 h; At 25°C	30 000 h; At 25°C	30 000 h; At 25°C	30 000 h; At 25°C	30 000 h; At 25°C
<b>Control elements</b>						
<b>Touch operation</b>						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes	Yes	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>						
Mounting	Support arm	Support arm	Support arm	Support arm	Pedestal	Pedestal
Mounting in portrait format possible	No	No	No	No	No	No
<b>Supply voltage</b>						
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
<b>Type of output</b>						
Acoustics						
• Speaker	No	No	No	No	No	No
<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	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port	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	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)	4; USB 3.1 Gen. 1 (type A)
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3XB27-0AX0	6AV2128-3XB57-0AX0	6AV2128-3XB27-0BX0	6AV2128-3XB57-0BX0	6AV2128-3XB27-1BX0	6AV2128-3XB57-1BX0
	SIMATIC HMI MTP2200 Unified Comfort PRO					
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UKCA mark	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes
FM approval	No; in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	No; in preparation					
EAC (formerly Gost-R)	No; in preparation					
CCC	No; in preparation					
<b>Use in hazardous areas</b>						
• ATEX Zone 2	No; in preparation					
• ATEX Zone 22	No; in preparation					
• IECEx Zone 2	No; in preparation					
• IECEx Zone 22	No; in preparation					
• cULus Class I Zone 2, Division 2	No; in preparation					
• cULus Class II Division 2	No	No	No	No	No	No
• FM Class I Division 2	No; in preparation					
• FM Class II Division 2	No	No	No	No	No	No
<b>Marine approval</b>						
• Germanischer Lloyd (GL)	No	No	No	No	No	No
• American Bureau of Shipping (ABS)	No	No	No	No	No	No
• Bureau Veritas (BV)	No	No	No	No	No	No
• Det Norske Veritas (DNV)	No	No	No	No	No	No
• Korean Register of Shipping (KRS)	No	No	No	No	No	No
• Lloyds Register of Shipping (LRS)	No	No	No	No	No	No
• Nippon Kaiji Kyokai (Class NK)	No	No	No	No	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No
• Chinese Classification Society (CCS)	No	No	No	No	No	No
<b>Ambient conditions</b>						
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C					
- For vertical installation, max.	45 °C					
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Configuration</b>						
<b>Configuration software</b>						
• WinCC Unified Basic Engineering (TIA Portal)	No	No	No	No	No	No
• WinCC Unified Comfort Engineering (TIA Portal)	Yes; V18 or higher					
• WinCC Unified PC Engineering (TIA Portal)	Yes; V18 or higher					

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3XB27-0AX0	6AV2128-3XB57-0AX0	6AV2128-3XB27-0BX0	6AV2128-3XB57-0BX0	6AV2128-3XB27-1BX0	6AV2128-3XB57-1BX0
	SIMATIC HMI MTP2200 Unified Comfort PRO					
<b>Languages</b>						
<b>Online languages</b>						
• Number of online/runtime languages	32	32	32	32	32	32
<b>Functionality under WinCC Unified</b>						
Applications/options						
• Writer	Yes	Yes	Yes	Yes	Yes	Yes
• Calc	Yes	Yes	Yes	Yes	Yes	Yes
• Web browser	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
• Unified Collaboration	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	No	No	No	No	No	No
JavaScript	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>Functionality under WinCC Unified / alarm system</b>						
• Bit messages						
- Number of bit messages	9 000	9 000	9 000	9 000	9 000	9 000
• Analog messages						
- Number of analog messages	300	300	300	300	300	300
• Message buffer	Yes; Configured as alarm archive					
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Parameter set management (recipes)</b>						
• Number of parameter set types	750	750	750	750	750	750
• Size of internal parameter set memory	12 Mbyte					
• Parameter set memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / variables</b>						
• Number of variables per device	8 000	8 000	8 000	8 000	8 000	8 000
• Number of variables per screen	800	800	800	800	800	800
<b>Functionality under WinCC Unified / screens</b>						
• Number of configurable images	1 200	1 200	1 200	1 200	1 200	1 200
<b>Functionality under WinCC Unified / archiving</b>						
• Number of archives per device	50	50	50	50	50	50
<b>Security</b>						
• Number of roles	50	50	50	50	50	50
• Number of users	200	200	200	200	200	200
• Central user administration	Yes	Yes	Yes	Yes	Yes	Yes
<b>Functionality under WinCC Unified / transfer (upload/download)</b>						
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC HMI Unified Comfort Panel PRO

#### Technical specifications

Article number	6AV2128-3XB27-0AX0	6AV2128-3XB57-0AX0	6AV2128-3XB27-0BX0	6AV2128-3XB57-0BX0	6AV2128-3XB27-1BX0	6AV2128-3XB57-1BX0
	SIMATIC HMI MTP2200 Unified Comfort PRO					
<b>Process coupling</b>						
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	No	No	No	No	No	No
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes
• Number of S7 connections	16	16	16	16	16	16
• LOGO!	No	No	No	No	No	No
• SIMOTION	No	No	No	No	No	No
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes
• Software Controller/Open Controller	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>						
Peripherals	Printer, barcode reader					
Printer	Yes	Yes	Yes	Yes	Yes	Yes
SIMATIC HMI MM memory card: Multi Media Card	No	No	No	No	No	No
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes	Yes	Yes	Yes
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	527 mm					
Height of housing front	329 mm; Without basic adapter					
<b>Weights</b>						
Weight (without packaging)	8.5 kg	8.5 kg	8.4 kg	8.4 kg	8.5 kg	8.5 kg

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC WinCC Unified options

#### Overview

##### **SIMATIC WinCC Unified options**

###### WinCC Unified Audit

Contains the functionality to trace all operator actions related to value changes on tags. Other entries in the Audit Trail can be made by system and script functions.

###### Licensing:

One RT license is required for each RT station (Panel or PC) to be monitored. The WinCC Unified Report license is required for automatic creation of reports.

When upgrading to a new WinCC Unified version, no additional upgrade license is required. This option is upgraded with the upgrade license of the Unified base system.

###### WinCC Unified Clients

WinCC Unified Client is the graphical user interface for interacting with WinCC Unified Runtime.

The WinCC Unified Client accesses the WinCC Unified Runtime via web mechanisms (on the runtime station itself or via a network) for operator control and monitoring of machines and plants. Using the standard web mechanisms, the WinCC Unified images can be displayed on any PCs or mobile devices in the HTML5-capable browser. No additional know-how of the web is necessary for engineering of the WinCC Unified Screens in the TIA Portal.

A distinction is made between WinCC Unified Client Operate and WinCC Unified Client Monitor.

###### WinCC Unified Client Operate

The WinCC Unified Client Operate is used for operator control and monitoring of the WinCC Unified Runtime (Panel or PC).

###### WinCC Unified Client Monitor

The WinCC Unified Client Monitor is used purely for monitoring the WinCC Unified Runtime (PC).

It can be navigated using the operating screens, but the connection to the field for tags is no longer active. Moreover, defined functions, e.g. acknowledgment in the alarm and tag logging control is blocked.

###### Licensing:

A (server-based) license of the WinCC Unified Runtime is required for each WinCC Unified Client.

The client licenses are provided on the runtime station (the server or HMI Unified Panel) and are graded in accordance with the number of simultaneous WinCC Unified Web Client access operations.

The number of version-independent licenses can be increased at any time via additive WinCC Unified Client licenses (countable licenses).

WinCC Unified Client Operate: License packages in stages of 1, 3, 10, 30 and 100 WinCC Unified Clients Operate.

WinCC Unified Client Monitor: License packages in stages of 1, 3 and 10 WinCC Unified Clients Monitor.

License-free client access to the PC Runtime (PC) contained in the WinCC Unified PC Runtime:

- 1 x WinCC Unified Client Operate for local operator control and monitoring
- 1 x WinCC Unified Client Operate for operator control and monitoring via the web client (local or remote)
- 1 x WinCC Unified Client Monitor for monitoring via the web client (local or remote)

License-free access to the Panel Runtime (Panel) contained in the HMI Unified Comfort Panel:

- 1 x local operator control and monitoring on the HMI Unified Comfort Panel
- 1 x WinCC Unified Client Operate for operator control and monitoring via the web client (remote)
- The Unified Comfort Panel supports up to 3 web clients

###### WinCC Unified Database Storage

WinCC Unified PC uses a file-based database (SQLite) in the basic system for the archiving of process values and messages. The WinCC Unified Databased Storage option is available for use with greater quantity frameworks or lengthy archiving periods. All archive data is stored in an MS SQL server after installing the option and the license.

###### Licensing:

WinCC Unified PC: One license per WinCC Unified PC Runtime is required for activating the functionality.

When upgrading to a new WinCC Unified version, an additional upgrade license is required.

###### WinCC Unified Logging

Option for WinCC Unified for archiving of process values and messages. Process value archiving for the recording, compression and storage of measured values and alarm logging to record events. Online evaluation of process value archives and alarm logs with display and possible operations, for example representation of trends and display of tables, as well as further processing. Powerful standard functions permit user-friendly and flexible utilization of the logs.

###### Licensing:

SIMATIC Unified Comfort Panels:

- Messages can be logged without an additional license.
- Process values (tags) can be archived without an additional license.
- Use of file-based archiving, with the possibility of a maximum 5,000 logging tags

WinCC Unified PC:

- Messages can be logged without an additional license.
- Graded licenses for the number of logging tags used are available for the archiving of process values (tags). This number can be increased at any time via additive WinCC Unified Logging Tags (countable licenses).
- The licenses are divided into 100, 500, 1 000, 5 000, 10 000 and 30 000 logging tags.
- A maximum of 5,000 logging tags are possible when using file-based archiving (default)
- When using the database-based archiving (optional), the number of logging tags is limited by the performance capability of the PC system being used.

## Operator panels

Advanced HMI Panel-based  
Unified Comfort Panels

### SIMATIC WinCC Unified options

#### Overview

##### WinCC Unified Parameter Control

Option for SIMATIC WinCC Unified for the generation and management of parameter sets which contain associated machine or production data. The structure of a user data type (PLC UDT or HMI UDT) can be adopted for one or more parameter set types and can be changed automatically using a new user data type version.

##### Licensing:

SIMATIC Unified Comfort Panels:

- No license is required

WinCC Unified PC:

- One license per WinCC Unified PC Runtime is required for activating the functionality.  
When upgrading to a new WinCC Unified version, no additional upgrade license is required. This option is upgraded with the upgrade license of the Unified base system.

##### WinCC Unified Report Execution

Excel Addin is included in the scope of supply of WinCC Unified to connect WinCC Unified Tags, Logging Tags and Alarms with an Excel report template. The report templates are imported into the WinCC Unified Runtime without the engineering system at runtime, and connected with execution parameters. Afterwards, reports are automatically created cyclically, needs-oriented or event-oriented, stored in Excel and/or PDF format and/or sent by Email.

##### Licensing:

No license is required for the creation of reports in Excel and manual execution of the reports in Excel or from the Report Runtime Control. A WinCC Unified Report Execution license (Panel or PC) is required for the automated cyclic report depending on requirements and events.  
When upgrading to a new WinCC Unified version, no additional upgrade license is required. This option is upgraded with the upgrade license of the Unified base system.

##### WinCC Unified Collaboration

##### Licensing:

Each WinCC Unified Station (Panel or PC) to be connected via Collaboration requires a corresponding license.  
The scope and type of exchanged data is not limited.  
The configuration of Collaboration in the engineering system does not require additional licensing.  
When upgrading to a new WinCC Unified version, no additional upgrade license is required. This option is upgraded with the upgrade license of the Unified base system.

## 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 PROFlenergy, 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.

More information is available at

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

#### Ordering data

#### Article No.

##### SIMATIC HMI Comfort Panels

##### 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;  
Ambient temperature up to 50 °C  
(up to 55 °C with restriction)

**SIMATIC HMI TP1500 Comfort** 6AV2124-0QC02-0AX2

Touch operation;  
15" widescreen display;  
Ambient temperature up to 45 °C

**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 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;  
Ambient temperature up to 50 °C  
(up to 55 °C with restriction)

**SIMATIC HMI KP1500 Comfort** 6AV2124-1QC02-0AX2

Key operation;  
15" widescreen display;  
Ambient temperature up to 45 °C

##### Accessories

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

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX1	6AV2124-1QC02-0AX2
	SIMATIC HMI KP700 Comfort	SIMATIC HMI KP900 Comfort	SIMATIC HMI KP1200 Comfort	SIMATIC HMI KP1500 Comfort	SIMATIC HMI KP1500 Comfort
<b>General information</b>					
Product type designation	KP700 Comfort	KP900 Comfort	KP1200 Comfort	KP1500 Comfort	KP1500 Comfort
<b>Display</b>					
Design of display	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	9 in	12.1 in	15.4 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	800 pixel	800 pixel	1 280 pixel	1 280 pixel	1 280 pixel
• Vertical image resolution	480 pixel	480 pixel	800 pixel	800 pixel	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	24	26	34	36	36
<b>Touch operation</b>					
• Design as touch screen	No; without	No; without	No; without	No; without	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				
<b>Memory</b>					
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>					
<b>Acoustics</b>					
• Speaker	Yes	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; 2 ports (switch)	1; 2 ports (switch)	1; 2 ports (switch)	2; 2 ports (switch) + independent port	2; 2 ports (switch) + independent port
Number of RS 485 interfaces	1; RS 422 / 485 combined				
Number of USB interfaces	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
<b>Industrial Ethernet</b>					
• Number of ports of the integrated switch	2	2	2	2	2

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX1	6AV2124-1QC02-0AX2
	SIMATIC HMI KP700 Comfort	SIMATIC HMI KP900 Comfort	SIMATIC HMI KP1200 Comfort	SIMATIC HMI KP1500 Comfort	SIMATIC HMI KP1500 Comfort
<b>Protocols</b>					
PROFINET	Yes	Yes	Yes	Yes	Yes
IRT	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes	Yes; WinCC V14 SP1 HSP or higher
PROFIBUS	Yes	Yes	Yes	Yes	Yes
MPI	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
<b>Degree and class of protection</b>					
IP (at the front)	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20	IP20
NEMA (front)					
• Enclosure Type 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	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; For inscription on device rating plate	Yes
• cULus Class II Division 2				No; in preparation	No
• FM Class I Division 2	Yes	Yes	Yes	Yes; For inscription on device rating plate	Yes
• FM Class II Division 2				No; in preparation	No
<b>Marine approval</b>					
• Germanischer Lloyd (GL)	Yes	Yes	Yes; As of product version: 10	No	No
• American Bureau of Shipping (ABS)	Yes	Yes	Yes; As of product version: 10	No	Yes
• Bureau Veritas (BV)	Yes	Yes	Yes; As of product version: 10	No	Yes
• Det Norske Veritas (DNV)	Yes	Yes	Yes; As of product version: 10	No	Yes
• Korean Register of Shipping (KRS)				No	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes; As of product version: 10	No	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes; As of product version: 10	No	Yes
• Polski Rejestr Statkow (PRS)	No	No	No	No	No
• Chinese Classification Society (CCS)				No	Yes
<b>Ambient conditions</b>					
Suited for indoor use				Yes	Yes
Suited for outdoor use				No	No
<b>Ambient temperature during operation</b>					
<b>Operation (vertical installation)</b>					
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C; (55 °C, see entry ID: 64847814)				45 °C
<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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### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX1	6AV2124-1QC02-0AX2
	SIMATIC HMI KP700 Comfort	SIMATIC HMI KP900 Comfort	SIMATIC HMI KP1200 Comfort	SIMATIC HMI KP1500 Comfort	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; 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
<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		
- Number of bit messages	4 000	4 000	4 000	6 000	6 000
• Analog messages	Yes	Yes	Yes		
- Number of analog messages	200	200	200	200	200
• Message buffer					
- Number of entries	1 024	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	300	300	300	500	500
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes	Yes
<b>Variables</b>					
• Number of variables per device	2 048	2 048	2 048	4 096	4 096
• Number of variables per screen	400	400	400	400	400
<b>Images</b>					
• Number of configurable images	500	500	500	750	750
<b>Archiving</b>					
• Number of archives per device	50	50	50	50	50
<b>Security</b>					
• Number of user groups	50	50	50	50	50
• Number of users	50	50	50	50	50
• SIMATIC Logon	Yes	Yes	Yes	Yes	Yes
<b>Logging through printer</b>					
• Alarms	Yes	Yes	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML
<b>Transfer (upload/download)</b>					
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-1GC01-0AX0	6AV2124-1JC01-0AX0	6AV2124-1MC01-0AX0	6AV2124-1QC02-0AX1	6AV2124-1QC02-0AX2
	SIMATIC HMI KP700 Comfort	SIMATIC HMI KP900 Comfort	SIMATIC HMI KP1200 Comfort	SIMATIC HMI KP1500 Comfort	SIMATIC HMI KP1500 Comfort
<b>Process coupling</b>					
• S7-1200	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes	Yes	Yes
• 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	No	No	No	No	No
• Aluminum	Yes	Yes	Yes	Yes	Yes
• Stainless steel	No	No	No	No	No
<b>Dimensions</b>					
Width of the housing front	308 mm	361.2 mm	454 mm	483 mm	483 mm
Height of housing front	204 mm	230 mm	289 mm	310 mm	310 mm
Mounting cutout, width	282 mm	338 mm	434 mm	450 mm	450 mm
Mounting cutout, height	178 mm	206 mm	269 mm	291 mm	291 mm
Overall depth	63 mm	63 mm	64.6 mm	73.2 mm	73.2 mm
<b>Weights</b>					
Weight (without packaging)	2.2 kg	2.7 kg	4.4 kg	4.7 kg	4.7 kg

## 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	6AV2124-0QC02-0AX2 SIMATIC HMI TP1500 Comfort	6AV2124-0UC02-0AX1 SIMATIC HMI TP1900 Comfort	6AV2124-0XC02-0AX1 SIMATIC HMI TP2200 Comfort
<b>General information</b>							
Product type designation	TP700 Comfort	TP900 Comfort	TP1200 Comfort	TP1500 Comfort	TP1500 Comfort	TP1900 Comfort	TP2200 Comfort
<b>Display</b>							
Design of display	TFT	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	7 in	9 in	12.1 in	15.4 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	16 777 216
<b>Resolution (pixels)</b>							
• Horizontal image resolution	800 pixel	800 pixel	1 280 pixel	1 280 pixel	1 280 pixel	1 366 pixel	1 920 pixel
• Vertical image resolution	480 pixel	480 pixel	800 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	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	0
<b>Touch operation</b>							
• Design as touch screen	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive	Yes; Analog-resistive	Yes	Yes; Analog-resistive	Yes; Analog-resistive
<b>Installation type/mounting</b>							
Wall mounting/direct mounting	No	No	No				
Mounting in portrait format possible	Yes	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	24 V
<b>Memory</b>							
Memory available for user data	12 Mbyte	12 Mbyte	12 Mbyte	24 Mbyte	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>							
Acoustics							
• Speaker	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Time of day</b>							
<b>Clock</b>							
• Hardware clock (real-time)	Yes	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	Yes; Back-up duration typically 6 weeks
• synchronizable	Yes	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			
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	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	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	2
<b>Industrial Ethernet</b>							
• Number of ports of the integrated switch	2	2	2	2	2	2	2
<b>Protocols</b>							
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IRT	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes; As of WinCC V12	Yes	Yes; WinCC V14 SP1 HSP or higher	Yes	Yes
PROFIBUS	Yes	Yes	Yes	Yes	Yes	Yes	Yes
MPI	Yes	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	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-0GC01-0AX0	6AV2124-0JC01-0AX0	6AV2124-0MC01-0AX0	6AV2124-0QC02-0AX1	6AV2124-0QC02-0AX2	6AV2124-0UC02-0AX1	6AV2124-0XC02-0AX1
	SIMATIC HMI TP700 Comfort	SIMATIC HMI TP900 Comfort	SIMATIC HMI TP1200 Comfort	SIMATIC HMI TP1500 Comfort	SIMATIC HMI TP1500 Comfort	SIMATIC HMI TP1900 Comfort	SIMATIC HMI TP2200 Comfort
<b>Degree and class of protection</b>							
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP20	IP20	IP20	IP20	IP20	IP20	IP20
NEMA (front)							
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>							
CE mark	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FM approval					Yes		
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)				Yes	Yes	Yes	Yes
<b>Use in hazardous areas</b>							
• ATEX Zone 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• ATEX Zone 22	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• IECEx Zone 2	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• IECEx Zone 22	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• cULus Class I Zone 2, Division 2	Yes	Yes	Yes	Yes; For inscription on device rating plate	Yes	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• cULus Class II Division 2				No; in preparation	No	No; in preparation	No; in preparation
• FM Class I Division 2	Yes	Yes	Yes	Yes; For inscription on device rating plate	Yes	Yes; For inscription on device rating plate	Yes; For inscription on device rating plate
• FM Class II Division 2				No; in preparation	No	No; in preparation	No; in preparation
<b>Marine approval</b>							
• Germanischer Lloyd (GL)	Yes	Yes	Yes; As of product version: 10	No	No	No	No
• American Bureau of Shipping (ABS)	Yes	Yes	Yes; As of product version: 10	Yes	Yes	No	No
• Bureau Veritas (BV)	Yes	Yes	Yes; As of product version: 10	Yes	Yes	No	No
• Det Norske Veritas (DNV)	Yes	Yes	Yes; As of product version: 10	Yes	Yes	No	No
• Korean Register of Shipping (KRS)				Yes	Yes	No	No
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes; As of product version: 10	Yes	Yes	No	No
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes; As of product version: 10	Yes	Yes	No	No
• Polski Rejestr Statkow (PRS)	No	No	No	No	No	No	No
• Chinese Classification Society (CCS)				Yes	Yes	No	No
<b>Ambient conditions</b>							
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No	No
<b>Ambient temperature during operation</b>							
<b>Operation (vertical installation)</b>							
- For vertical installation, min.	0 °C	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	45 °C

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### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-0GC01-0AX0	6AV2124-0JC01-0AX0	6AV2124-0MC01-0AX0	6AV2124-0QC02-0AX1	6AV2124-0QC02-0AX2	6AV2124-0UC02-0AX1	6AV2124-0XC02-0AX1
	SIMATIC HMI TP700 Comfort	SIMATIC HMI TP900 Comfort	SIMATIC HMI TP1200 Comfort	SIMATIC HMI TP1500 Comfort	SIMATIC HMI TP1500 Comfort	SIMATIC HMI TP1900 Comfort	SIMATIC HMI TP2200 Comfort
<b>Relative humidity</b>							
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation	90 %; no condensation
<b>configuration / header</b>							
<b>Configuration software</b>							
• WinCC Comfort (TIA Portal)	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	32	32
<b>Functionality under WinCC (TIA Portal)</b>							
Applications/options							
• Web browser	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Task planner							
• time-controlled	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• task-controlled	Yes	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	6 000
• Analog messages	Yes	Yes	Yes				
- Number of analog messages	200	200	200	200	200	200	200
• Message buffer							
- Number of entries	1 024	1 024	1 024	1 024	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Recipe management</b>							
• Number of recipes	300	300	300	500	500	500	500
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	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	4 096
• Number of variables per screen	400	400	400	400	400	400	400
<b>Images</b>							
• Number of configurable images	500	500	500	750	750	750	750
<b>Archiving</b>							
• Number of archives per device	50	50	50	50	50	50	50
<b>Security</b>							
• Number of user groups	50	50	50	50	50	50	50
• Number of users	50	50	50	50	50	50	50
• SIMATIC Logon	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Logging through printer</b>							
• Alarms	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Hardcopy	Yes	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	Yes; PDF, HTML
<b>Transfer (upload/download)</b>							
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels standard devices

#### Technical specifications

Article number	6AV2124-0GC01-0AX0	6AV2124-0JC01-0AX0	6AV2124-0MC01-0AX0	6AV2124-0QC02-0AX1	6AV2124-0QC02-0AX2	6AV2124-0UC02-0AX1	6AV2124-0XC02-0AX1
	SIMATIC HMI TP700 Comfort	SIMATIC HMI TP900 Comfort	SIMATIC HMI TP1200 Comfort	SIMATIC HMI TP1500 Comfort	SIMATIC HMI TP1500 Comfort	SIMATIC HMI TP1900 Comfort	SIMATIC HMI TP2200 Comfort
<b>Process coupling</b>							
• S7-1200	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No	No	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>							
Printer	Yes	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	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	Yes; Up to 2 GB
USB memory	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Network camera	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Mechanics/material</b>							
Enclosure material (front)							
• Plastic	No	No	No	No	No	No	No
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Stainless steel	No	No	No	No	No	No	No
<b>Dimensions</b>							
Width of the housing front	214 mm	274 mm	330 mm	415 mm	415 mm	483 mm	560 mm
Height of housing front	158 mm	190 mm	241 mm	310 mm	310 mm	337 mm	380 mm
Mounting cutout, width	198 mm	251 mm	310 mm	396 mm	396 mm	465 mm	542 mm
Mounting cutout, height	142 mm	166 mm	221 mm	291 mm	291 mm	319 mm	362 mm
Overall depth	63 mm	62.7 mm	64 mm	73.2 mm	73.2 mm	73.2 mm	73.2 mm
<b>Weights</b>							
Weight (without packaging)	1.4 kg	1.9 kg	2.8 kg	4.4 kg	4.4 kg	5.6 kg	6.7 kg

#### More information

More information is available on the internet at

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

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

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

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

More information is available at

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

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### SIPLUS Comfort Panels Standard

#### 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, Touch	
SIPLUS HMI TP700 Comfort	6AG1124-0GC01-4AX0
SIPLUS HMI TP900 Comfort	6AG1124-0JC01-4AX0
SIPLUS HMI TP1200 Comfort	6AG1124-0MC01-4AX0
SIPLUS HMI TP1500 Comfort	6AG1124-0QC02-4AX1
SIPLUS HMI TP1900 Comfort	6AG1124-0UC02-4AX1
SIPLUS HMI TP2200 Comfort	6AG1124-0XC02-4AX1
SIPLUS HMI Comfort Panels, Keys	
SIPLUS HMI KP700 Comfort	6AG1124-1GC01-4AX0
SIPLUS HMI KP900 Comfort	6AG1124-1JC01-4AX0
SIPLUS HMI KP1200 Comfort	6AG1124-1MC01-4AX0
SIPLUS HMI KP1500 Comfort	6AG1124-1QC02-4AX1
Accessories	See HMI accessories

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### SIPLUS Comfort Panels Standard

#### Technical specifications

Article number	<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>General information</b>			
Product type designation	TP700 Comfort	TP900 Comfort	TP1200 Comfort
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
<b>Operation (vertical installation)</b>			
- For vertical installation, min.	0 °C; = Tmin	0 °C; = Tmin	0 °C; = Tmin
- For vertical installation, max.	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
• 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)
<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	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); *	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	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); *	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)	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)	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

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### SIPLUS Comfort Panels Standard

#### 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>General information</b>			
Product type designation	TP1500 Comfort	TP1900 Comfort	TP2200 Comfort
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
<b>Operation (vertical installation)</b>			
- 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	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); *	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	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); *	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)	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)	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

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### SIPLUS Comfort Panels Standard

#### Technical specifications

Article number	<b>6AG1124-1GC01-4AX0</b> SIPLUS HMI KP700 Comfort	<b>6AG1124-1JC01-4AX0</b> SIPLUS HMI KP900 Comfort	<b>6AG1124-1MC01-4AX0</b> SIPLUS HMI KP1200 Comfort	<b>6AG1124-1QC02-4AX1</b> SIPLUS HMI KP1500 Comfort
<b>General information</b>				
Product type designation	KP700 Comfort	KP900 Comfort	KP1200 Comfort	KP1500 Comfort
<b>Ambient conditions</b>				
<b>Ambient temperature during operation</b>				
<b>Operation (vertical installation)</b>				
- For vertical installation, min.	0 °C; = Tmin	0 °C; = Tmin	0 °C; = Tmin	0 °C
- For vertical installation, max.	50 °C; = Tmax	50 °C; = Tmax	50 °C; = Tmax	50 °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	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 1 080 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)	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	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	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); *	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; *			
<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	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); *	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; *			
<b>Usage in industrial process technology</b>				
- Against chemically active substances acc. to EN 60654-4	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)	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)	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)	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!

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### SIPLUS Comfort Panels Standard

#### Technical specifications

Article number	<b>6AG1124-1GC01-4AX0</b> SIPLUS HMI KP700 Comfort	<b>6AG1124-1JC01-4AX0</b> SIPLUS HMI KP900 Comfort	<b>6AG1124-1MC01-4AX0</b> SIPLUS HMI KP1200 Comfort	<b>6AG1124-1QC02-4AX1</b> SIPLUS HMI KP1500 Comfort
<b>Conformal coating</b>				
<ul style="list-style-type: none"> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>Protection against fouling acc. to EN 60664-3</li> <li>Military testing according to MIL-I-46058C, Amendment 7</li> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	<ul style="list-style-type: none"> <li>Yes; Class 2 for high reliability</li> <li>Yes; Type 1 protection</li> <li>Yes; Discoloration of coating possible during service life</li> <li>Yes; Conformal coating, Class A</li> </ul>	<ul style="list-style-type: none"> <li>Yes; Class 2 for high reliability</li> <li>Yes; Type 1 protection</li> <li>Yes; Discoloration of coating possible during service life</li> <li>Yes; Conformal coating, Class A</li> </ul>	<ul style="list-style-type: none"> <li>Yes; Class 2 for high reliability</li> <li>Yes; Type 1 protection</li> <li>Yes; Discoloration of coating possible during service life</li> <li>Yes; Conformal coating, Class A</li> </ul>	<ul style="list-style-type: none"> <li>Yes; Class 2 for high reliability</li> <li>Yes; Type 1 protection</li> <li>Yes; Discoloration of coating possible during service life</li> <li>Yes; Conformal coating, Class A</li> </ul>

#### More information

More information is available on the internet at

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

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

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

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

More information is available at

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

## 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.

More information is available at

<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

#### Accessories

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

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

#### Technical specifications

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	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

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	SIMATIC HMI TP1500 Comfort Outdoor
<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
<b>Degree and class of protection</b>		
IP (at the front)	IP66	IP66
IP (rear)	IP20	IP20
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; in preparation	Yes; in preparation
• Det Norske Veritas (DNV)	Yes	Yes
• Korean Register of Shipping (KRS)	No; in preparation	No; in preparation
• Lloyds Register of Shipping (LRS)	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes; in preparation	Yes; in preparation
• Polski Rejestr Statkow (PRS)	No	No
• Chinese Classification Society (CCS)	Yes; in preparation	Yes; in preparation
• Compass working clearance	5 m	5 m

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

#### Technical specifications

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	SIMATIC 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>		
<b>Operation (vertical installation)</b>		
- 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 / header</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
<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

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	SIMATIC HMI TP1500 Comfort Outdoor
<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
<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

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels Outdoor

##### Technical specifications

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	SIMATIC HMI TP1500 Comfort Outdoor
<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	
Network camera	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	
Further accessories are available	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

Article number	6AV2124-0GC13-0AX0	6AV2124-0QC13-0AX0
	SIMATIC HMI TP700 Comfort Outdoor	SIMATIC HMI TP1500 Comfort Outdoor
<b>Dimensions</b>		
Width of the housing front	214 mm	415 mm
Height of housing front	158 mm	310 mm
Mounting cutout, width	198 mm	396 mm
Mounting cutout, height	142 mm	291 mm
Overall depth	64.6 mm	73.2 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

##### More information

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.

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### SIPLUS Comfort Panels 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 Outdoor Panels

##### 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 TP700 Comfort Outdoor M

6AG1124-0GC13-2AM0

Conformity with the MIL-STD-461G standard:  
MIL-STD-461G RE102 and  
MIL-STD-461G RE103.

##### 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

##### SIPLUS HMI TP1500 Comfort Outdoor M

6AG1124-0QC13-2AM0

Conformity with the MIL-STD-461G standard:  
MIL-STD-461G RE102 and  
MIL-STD-461G RE103.

#### 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>6AG1124-0GC13-2AM0</b> SIPLUS HMI TP700 Comfort Outdoor M	<b>6AG1124-0QC13-2AX0</b> SIPLUS HMI TP1500 Comfort Outdoor	<b>6AG1124-0QC13-2AM0</b> SIPLUS HMI TP1500 Comfort Outdoor M
<b>General information</b>				
Product type designation	TP700 Comfort Outdoor	TP700 Comfort Outdoor	TP1500 Outdoor	TP1500 Outdoor
<b>Ambient conditions</b>				
<b>Ambient temperature during operation</b>				
<b>Operation (vertical installation)</b>				
- For vertical installation, min.	-30 °C; = Tmin			
- For vertical installation, max.	60 °C; (55 °C, see entry ID: 64847814)	60 °C; (55 °C, see entry ID: 64847814)	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	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 when condensation present), vertical mounting position	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	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	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	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); *	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; *			
<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, fungal and dry rot spores (excluding fauna)	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
- 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); *	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; *			
<b>Usage in industrial process technology</b>				
- Against chemically active substances acc. to EN 60654-4	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)	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)	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)	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)

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### SIPLUS Comfort Panels Outdoor

#### Technical specifications

Article number	<b>6AG1124-0GC13-2AX0</b>	<b>6AG1124-0GC13-2AM0</b>	<b>6AG1124-0QC13-2AX0</b>	<b>6AG1124-0QC13-2AM0</b>
	SIPLUS HMI TP700 Comfort Outdoor	SIPLUS HMI TP700 Comfort Outdoor M	SIPLUS HMI TP1500 Comfort Outdoor	SIPLUS HMI TP1500 Comfort Outdoor M
<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			
• Protection against fouling acc. to EN 60664-3	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			

#### More information

More 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.

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels PRO

#### Overview



**SIMATIC HMI Comfort PRO: The new Comfort Panel PRO with fully-enclosed IP65 degree of 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 casing enables it to be used directly at the machine and guarantees durability, even in harsh and extreme operating environments.

#### Highlights:

- All-round IP65 degree of 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

More information is available at

<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 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 cabinet-free visualization and automation.

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 "Industrial Computing" -> "Devices for special requirements" -> "PROtected devices and system components".

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

2

#### Ordering data

##### Comfort Panels PRO

##### TP1200 Comfort PRO

12.1" TFT display,  
1 280 x 800 pixels,  
16 million 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) and Extension Unit:
- For pedestal (extendable, flange below)

##### Neutral design

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

##### TP1500 Comfort PRO

15.6" TFT display,  
1 366 x 768 pixels,  
16 million 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) and Extension Unit:
- For pedestal (extendable, flange below)

##### Neutral design

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

#### Article No.

6AV2124-0MC24-0AX0

6AV2124-0MC24-0BX0

6AV2124-0MC24-1AX0

6AV2124-0MC24-0AB0

6AV2124-0MC24-0BB0

6AV2124-0MC24-1AB0

6AV2124-0QC24-0AX0

6AV2124-0QC24-0BX0

6AV2124-0QC24-1AX0

6AV2124-0QC24-0AB0

6AV2124-0QC24-0BB0

6AV2124-0QC24-1AB0

#### Article No.

##### TP1900 Comfort PRO

18.5" TFT display,  
1 366 x 768 pixels,  
16 million 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) and Extension Unit:
- For pedestal (extendable, flange below)

##### Neutral design

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

##### TP2200 Comfort PRO

21.5" TFT display,  
1 920 x 1 080 pixels,  
16 million 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) and Extension Unit:
- For pedestal (extendable, flange below)

##### Neutral design

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

6AV2124-0UC24-0AX0

6AV2124-0UC24-0BX0

6AV2124-0UC24-1AX0

6AV2124-0UC24-0AB0

6AV2124-0UC24-0BB0

6AV2124-0UC24-1AB0

6AV2124-0XC24-0AX0

6AV2124-0XC24-0BX0

6AV2124-0XC24-1AX0

6AV2124-0XC24-0AB0

6AV2124-0XC24-0BB0

6AV2124-0XC24-1AB0

#### Technical specifications

Article number	6AV2124-0MC24-0AX0	6AV2124-0MC24-1AX0	6AV2124-0MC24-0BX0	6AV2124-0MC24-0AB0	6AV2124-0MC24-0BB0	6AV2124-0MC24-1AB0
	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral			
<b>General information</b>						
Product type designation	TP1200 Comfort PRO	TP1200 Comfort PRO	TP1200 Comfort PRO	SIMATIC HMI TP1200 Comfort PRO	SIMATIC HMI TP1200 Comfort PRO	SIMATIC HMI TP1200 Comfort PRO
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	12.1 in	12.1 in	12.1 in	12.1 in	12.1 in	12.1 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	1 280 pixel	1 280 pixel	1 280 pixel	1 280 pixel	1 280 pixel	1 280 pixel
• Vertical image resolution	800 pixel	800 pixel	800 pixel	800 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	80 000 h
<b>Control elements</b>						
<b>Keyboard fonts</b>						
• Function keys						
- Number of function keys	0	0	0			

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0MC24-0AX0	6AV2124-0MC24-1AX0	6AV2124-0MC24-0BX0	6AV2124-0MC24-0AB0	6AV2124-0MC24-0BB0	6AV2124-0MC24-1AB0
	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral
<b>Touch operation</b>						
• Design as touch screen	Yes; Projective-capacitive					
<b>Installation type/mounting</b>						
Mounting	Support arm	Pedestal	Support arm	Support arm	Support arm	Pedestal
Mounting in portrait format possible	No	No	No	No	No	No
<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	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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	2; USB 2.0					
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
IRT	Yes	Yes	Yes	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	Yes	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65
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
<b>Ambient conditions</b>						
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C					
- For vertical installation, max.	45 °C					
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0MC24-0AX0	6AV2124-0MC24-1AX0	6AV2124-0MC24-0BX0	6AV2124-0MC24-0AB0	6AV2124-0MC24-0BB0	6AV2124-0MC24-1AB0
	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral			
<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	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						
- Number of bit messages	4 000	4 000	4 000	4 000	4 000	4 000
• Analog messages						
- Number of analog messages	200	200	200	200	200	200
• Message buffer						
- Number of entries	1 024	1 024	1 024	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Recipe management</b>						
• Number of recipes	300	300	300	300	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte	2 Mbyte	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Variables</b>						
• Number of variables per device	2 048	2 048	2 048	2 048	2 048	2 048
• Number of variables per screen	400	400	400	400	400	400
<b>Images</b>						
• Number of configurable images	500	500	500	500	500	500
<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
<b>Transfer (upload/download)</b>						
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0MC24-0AX0	6AV2124-0MC24-1AX0	6AV2124-0MC24-0BX0	6AV2124-0MC24-0AB0	6AV2124-0MC24-0BB0	6AV2124-0MC24-1AB0
	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral	SIMATIC HMI TP1200 Comfort Pro Neutral
<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			
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	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	313 mm	313 mm	313 mm	313 mm	313 mm	313 mm
Height of housing front	225.5 mm; Without basic adapter	225.5 mm; Without basic adapter	225.5 mm; Without basic adapter			
<b>Weights</b>						
Weight (without packaging)	4.9 kg	4.9 kg	4.5 kg	4.9 kg	4.5 kg	4.9 kg

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0QC24-0AX0	6AV2124-0QC24-0BX0	6AV2124-0QC24-1AX0	6AV2124-0QC24-0AB0	6AV2124-0QC24-0BB0	6AV2124-0QC24-1AB0
	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO neutral	SIMATIC HMI TP1500 Comfort PRO neutral	SIMATIC HMI TP1500 Comfort PRO neutral
<b>General information</b>						
Product type designation	TP1500 Comfort PRO					
<b>Display</b>						
Design of display	TFT	TFT	TFT	TFT	TFT	TFT
Screen diagonal	15.6 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	1 366 pixel					
• Vertical image resolution	768 pixel					
<b>Backlighting</b>						
• MTBF backlighting (at 25 °C)	50 000 h					
<b>Control elements</b>						
<b>Keyboard fonts</b>						
• Function keys						
- Number of function keys	0	0	0		0	0
<b>Touch operation</b>						
• Design as touch screen	Yes; Projective- capacitive					
<b>Installation type/mounting</b>						
Mounting	Support arm	Support arm	Pedestal	Support arm	Support arm	Pedestal
Mounting in portrait format possible	No	No	No	No	No	No
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Memory</b>						
Memory available for user data	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					
• synchronizable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; 2 ports (switch) + independent port					
Number of RS 485 interfaces	1; RS 422 / 485 combined					
Number of USB interfaces	2; USB 2.0					
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
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
IRT	Yes	Yes	Yes	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	Yes	Yes	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0QC24-0AX0	6AV2124-0QC24-0BX0	6AV2124-0QC24-1AX0	6AV2124-0QC24-0AB0	6AV2124-0QC24-0BB0	6AV2124-0QC24-1AB0
	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO neutral	SIMATIC HMI TP1500 Comfort PRO neutral	SIMATIC HMI TP1500 Comfort PRO neutral
<b>Degree and class of protection</b>						
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65
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
<b>Ambient conditions</b>						
Suited for indoor use	Yes	Yes	Yes	Yes	Yes	Yes
Suited for outdoor use	No	No	No	No	No	No
<b>Ambient temperature during operation</b>						
<b>Operation (vertical installation)</b>						
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	45 °C	45 °C	45 °C	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	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						
- Number of bit messages	6 000	6 000	6 000	6 000	6 000	6 000
• Analog messages						
- Number of analog messages	200	200	200	200	200	200
• Message buffer						
- Number of entries	1 024	1 024	1 024	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes	Yes	Yes
<b>Recipe management</b>						
• Number of recipes	500	500	500	500	500	500
• Size of internal recipe memory	4 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes	Yes	Yes
<b>Variables</b>						
• Number of variables per device	4 096	4 096	4 096	4 096	4 096	4 096
• Number of variables per screen	400	400	400	400	400	400

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0QC24-0AX0	6AV2124-0QC24-0BX0	6AV2124-0QC24-1AX0	6AV2124-0QC24-0AB0	6AV2124-0QC24-0BB0	6AV2124-0QC24-1AB0
	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO	SIMATIC HMI TP1500 Comfort PRO neutral	SIMATIC HMI TP1500 Comfort PRO neutral	SIMATIC HMI TP1500 Comfort PRO neutral
<b>Images</b>						
• Number of configurable images	750	750	750	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
<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			
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	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	396 mm	396 mm	396 mm	396 mm	396 mm	396 mm
Height of housing front	225.5 mm; Without basic adapter	225.5 mm; Without basic adapter	225.5 mm; Without basic adapter			
<b>Weights</b>						
Weight (without packaging)	6.3 kg	6.3 kg	6.3 kg	6.3 kg	6.3 kg	6.3 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>6AV2124-0XC24-0AB0</b> SIMATIC HMI TP2200 Comfort PRO neutral	<b>6AV2124-0XC24-0BB0</b> SIMATIC HMI TP2200 Comfort PRO neutral	<b>6AV2124-0XC24-1AB0</b> SIMATIC HMI TP2200 Comfort PRO neutral
<b>General information</b>				
Product type designation	TP2200 Comfort PRO	TP2200 Comfort PRO	TP2200 Comfort PRO	TP2200 Comfort PRO
<b>Display</b>				
Design of display	TFT	TFT	TFT	TFT
Screen diagonal	21.5 in	21.5 in	21.5 in	21.5 in
Number of colors	16 777 216	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	1 920 pixel
• Vertical image resolution	1 080 pixel	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	30 000 h
<b>Control elements</b>				
<b>Keyboard fonts</b>				
• Function keys				
- Number of function keys	0	0	0	0
<b>Touch operation</b>				
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
<b>Installation type/mounting</b>				
Mounting	Support arm	Support arm	Support arm	Pedestal
Mounting in portrait format possible	No	No	No	No
<b>Supply voltage</b>				
Rated value (DC)	24 V	24 V	24 V	24 V
<b>Memory</b>				
Memory available for user data	24 Mbyte	24 Mbyte	24 Mbyte	24 Mbyte
<b>Type of output</b>				
Acoustics				
• Speaker	Yes	Yes	Yes	Yes
<b>Time of day</b>				
<b>Clock</b>				
• Hardware clock (real-time)	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
• synchronizable	Yes	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	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
Number of USB interfaces	2; USB 2.0	2; USB 2.0	2; USB 2.0	2; USB 2.0
Number of SD card slots	2	2	2	2
<b>Industrial Ethernet</b>				
• Number of ports of the integrated switch	2	2	2	2
<b>Protocols</b>				
PROFINET	Yes	Yes	Yes	Yes
IRT	Yes	Yes	Yes	Yes
PROFIBUS	Yes	Yes	Yes	Yes
MPI	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>				
<b>Media redundancy</b>				
- MRP	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>				
IP (at the front)	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65
NEMA (front)				
• Enclosure Type 4x at the front	Yes	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0XC24-0AX0 SIMATIC HMI TP2200 Comfort PRO	6AV2124-0XC24-0AB0 SIMATIC HMI TP2200 Comfort PRO neutral	6AV2124-0XC24-0BB0 SIMATIC HMI TP2200 Comfort PRO neutral	6AV2124-0XC24-1AB0 SIMATIC HMI TP2200 Comfort PRO neutral
<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>				
<b>Operation (vertical installation)</b>				
- For vertical installation, min.	0 °C	0 °C	0 °C	0 °C
- For vertical installation, max.	45 °C	45 °C	45 °C	45 °C
<b>Relative humidity</b>				
• Operation, max.	90 %; no condensation	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	Yes; V14 SP1 HSP and higher
<b>Languages</b>				
<b>Online languages</b>				
• Number of online/runtime languages	32	32	32	32
<b>Functionality under WinCC (TIA Portal)</b>				
Applications/options				
• Web browser	Yes	Yes	Yes	Yes
• Pocket Word	Yes	Yes	Yes	Yes
• Pocket Excel	Yes	Yes	Yes	Yes
• PDF Viewer	Yes	Yes	Yes	Yes
• Media Player	Yes	Yes	Yes	Yes
• SIMATIC WinCC Sm@rtServer	Yes	Yes	Yes	Yes
• SIMATIC WinCC Audit	Yes	Yes	Yes	Yes
Number of Visual Basic Scripts	Yes	Yes	Yes	Yes
Task planner				
• time-controlled	Yes	Yes	Yes	Yes
• task-controlled	Yes	Yes	Yes	Yes
<b>Message system</b>				
• Bit messages				
- Number of bit messages	6 000	6 000	6 000	6 000
• Analog messages				
- Number of analog messages	200	200	200	200
• Message buffer				
- Number of entries	1 024	1 024	1 024	1 024
- Circulating buffer	Yes	Yes	Yes	Yes
- retentive	Yes	Yes	Yes	Yes
<b>Recipe management</b>				
• Number of recipes	500	500	500	500
• Size of internal recipe memory	4 Mbyte	4 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes
<b>Variables</b>				
• Number of variables per device	4 096	4 096	4 096	4 096
• Number of variables per screen	400	400	400	400
<b>Images</b>				
• Number of configurable images	750	750	750	750
<b>Archiving</b>				
• Number of archives per device	50	50	50	50
<b>Security</b>				
• Number of user groups	50	50	50	50
• Number of users	50	50	50	50
• SIMATIC Logon	Yes	Yes	Yes	Yes
<b>Logging through printer</b>				
• Alarms	Yes	Yes	Yes	Yes
• Report (shift log)	Yes	Yes	Yes	Yes
• Hardcopy	Yes	Yes	Yes	Yes
• Electronic print to file	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML	Yes; PDF, HTML

## Operator panels

### Advanced HMI Panel-based Comfort Panels

#### Comfort Panels PRO

#### Technical specifications

Article number	6AV2124-0XC24-0AX0	6AV2124-0XC24-0AB0	6AV2124-0XC24-0BB0	6AV2124-0XC24-1AB0
	SIMATIC HMI TP2200 Comfort PRO	SIMATIC HMI TP2200 Comfort PRO neutral	SIMATIC HMI TP2200 Comfort PRO neutral	SIMATIC HMI TP2200 Comfort PRO neutral
<b>Transfer (upload/download)</b>				
• MPI/PROFIBUS DP	Yes	Yes	Yes	Yes
• Ethernet	Yes	Yes	Yes	Yes
<b>Process coupling</b>				
• S7-1200	Yes	Yes	Yes	Yes
• S7-1500	Yes	Yes	Yes	Yes
• S7-200	Yes	Yes	Yes	Yes
• S7-300/400	Yes	Yes	Yes	Yes
• LOGO!	Yes	Yes	Yes	Yes
• WinAC	Yes	Yes	Yes	Yes
• SIMOTION	Yes	Yes	Yes	Yes
• Allen Bradley (EtherNet/IP)	Yes	Yes	Yes	Yes
• Allen Bradley (DF1)	Yes	Yes	Yes	Yes
• Mitsubishi (MC TCP/IP)	Yes	Yes	Yes	Yes
• Mitsubishi (FX)	Yes	Yes	Yes	Yes
• OMRON (FINS TCP)	No	No	No	No
• OMRON (LINK/Multilink)	Yes	Yes	Yes	Yes
• Modicon (Modbus TCP/IP)	Yes	Yes	Yes	Yes
• Modicon (Modbus)	Yes	Yes	Yes	Yes
• OPC UA Client	Yes	Yes	Yes	Yes
• OPC UA Server	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>				
Printer	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
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
USB memory	Yes	Yes	Yes	Yes
Network camera	Yes	Yes	Yes	Yes
<b>Mechanics/material</b>				
Enclosure material (front)				
• Plastic	No	No	No	No
• Aluminum	Yes	Yes	Yes	Yes
• Stainless steel	No	No	No	No
<b>Dimensions</b>				
Width of the housing front	527 mm	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	330 mm; Without basic adapter
<b>Weights</b>				
Weight (without packaging)	8.5 kg	8.5 kg	8.5 kg	8.5 kg

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### 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".

More information is available at

<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, 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

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### Ordering data

##### Comfort Panels Large Front

##### SIMATIC HMI TP1200 Comfort Panel INOX with long stainless steel front

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

#### Article No.

6AV2144-8MC10-0AC0

##### SIMATIC HMI TP1500 Comfort Panel INOX with long stainless steel front

15" widescreen TFT display with long stainless steel front, decorative membrane, IP66K degree of protection front, PROFINET interface, MPI/PROFIBUS DP interface, 24 MB configuration memory, Windows, CE 2013, configurable as from WinCC Comfort V14 SP1 with HSP or higher

6AV2144-8QC10-0AA2

#### Article No.

6AV2144-8UC10-0AA1

##### SIMATIC HMI TP1900 Comfort Panel INOX with long stainless steel front

19" widescreen TFT display with long stainless steel front, decorative membrane, IP66K degree of protection front, PROFINET interface, MPI/PROFIBUS DP interface, 24 MB configuration memory, Windows, CE 2013, configurable as from WinCC Comfort V14 SP1 with HSP or higher

##### Accessories

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

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

#### 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>General information</b>			
Product type designation	TP700 Comfort INOX	TP900 Comfort 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; capacitive	Yes; capacitive	Yes; capacitive
<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

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### 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>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
<b>Degree and class of protection</b>			
IP (at the front)	IP66K	IP66K	IP66K
IP (rear)	IP20	IP20	IP20
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>			
<b>Operation (vertical installation)</b>			
- 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

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### 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>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
<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

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### Comfort Panels INOX and INOX PCT

#### 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>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	198 mm	250 mm	310 mm
Mounting cutout, height	142 mm	166 mm	221 mm
Overall depth	64.215 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; capacitive	Yes; capacitive	Yes; capacitive
• 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 Yes	Speaker Yes	Speaker 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

## 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>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
IP (rear)	IP20	IP20	IP20
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>			
<b>Operation (vertical installation)</b>			
- 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			
- 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

## 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>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>6AV2144-8QC10-0AA2</b> SIMATIC HMI TP1500 Comfort INOX	<b>6AV2144-8UC10-0AA1</b> SIMATIC HMI TP1900 Comfort INOX
<b>General information</b>			
Product type designation	TP1200 Comfort INOX LF	TP1500 Comfort INOX	TP1900 Comfort INOX
<b>Display</b>			
Design of display	TFT	TFT	TFT
Screen diagonal	12.1 in	15.4 in	18.5 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	1 366 pixel
• Vertical image resolution	800 pixel	800 pixel	768 pixel
<b>Backlighting</b>			
• MTBF backlighting (at 25 °C)	80 000 h	80 000 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; capacitive	Yes; Analog-resistive	Yes; capacitive
<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	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	1; 2 ports (switch)	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
• USB Mini B	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	Yes
PROFIBUS	Yes	Yes	Yes
MPI	Yes	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	Yes; As of WinCC V12	Yes	Yes
<b>Degree and class of protection</b>			
IP (at the front)	IP66K	IP66K	IP66K
IP (rear)	IP20	IP20	IP20
NEMA (front)			
• Enclosure Type 4x at the front	Yes; indoor use only	Yes; indoor use only	Yes; indoor use only

## 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>6AV2144-8QC10-0AA2</b> SIMATIC HMI TP1500 Comfort INOX	<b>6AV2144-8UC10-0AA1</b> SIMATIC HMI TP1900 Comfort INOX
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
FM approval	No		
RCM (formerly C-TICK)	No	Yes	Yes
KC approval	No	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	No	No	No
<b>Marine approval</b>			
• Germanischer Lloyd (GL)	No	No	No; In application process
• American Bureau of Shipping (ABS)	No	No	No; in preparation
• Bureau Veritas (BV)	No	No	No; in preparation
• Det Norske Veritas (DNV)	No	No	No; in preparation
• Korean Register of Shipping (KRS)	No	No	No; in preparation
• Lloyds Register of Shipping (LRS)	No	No	No; in preparation
• Nippon Kaiji Kyokai (Class NK)	No	No	No; in preparation
• Polski Rejestr Statkow (PRS)	No	No	No; in preparation
• Chinese Classification Society (CCS)	No	No	No; in preparation
<b>Ambient conditions</b>			
Suited for indoor use		Yes	Yes
Suited for outdoor use		No	No
<b>Ambient temperature during operation</b>			
<b>Operation (vertical installation)</b>			
- For vertical installation, min.	0 °C	0 °C	0 °C
- For vertical installation, max.	50 °C	50 °C	45 °C
<b>Relative humidity</b>			
• Operation, max.	80 %; no condensation	80 %; no condensation	70 %; no condensation
<b>Configuration</b>			
<b>Configuration software</b>			
• WinCC Comfort (TIA Portal)	Yes; from V11	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

## 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>6AV2144-8QC10-0AA2</b> SIMATIC HMI TP1500 Comfort INOX	<b>6AV2144-8UC10-0AA1</b> SIMATIC HMI TP1900 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	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	300	500	500
• Size of internal recipe memory	2 Mbyte	4 Mbyte	4 Mbyte
• Recipe memory expandable	Yes	Yes	Yes
<b>Variables</b>			
• Number of variables per device	2 048	4 096	4 096
• Number of variables per screen	400	400	400
<b>Images</b>			
• Number of configurable images	500	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

## 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>6AV2144-8QC10-0AA2</b> SIMATIC HMI TP1500 Comfort INOX	<b>6AV2144-8UC10-0AA1</b> SIMATIC HMI TP1900 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	330 mm	415 mm	483 mm
Height of housing front	269 mm	310 mm	337 mm
Mounting cutout, width	310 mm	396 mm	465 mm
Mounting cutout, height	248 mm	291 mm	319 mm
Overall depth	67 mm	74 mm	73 mm
<b>Weights</b>			
Weight (without packaging)	4.2 kg	5.9 kg	7.9 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>

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

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

#### Overview

##### ***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 cabinet-free solution for visualization and automation.

The following system components are available:

- Fixing elements
  - Adapter sets
  - Basic adapters
  - Round tube adapter
- Extension Units and operator controls
- Extension components
  - Stainless steel keyboard
  - Tool and keyboard tray
  - USB interface for PRO devices
  - Handles for PRO devices

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Fixing elements

#### Overview

##### Fixing elements

Adapter sets, basic adapter, round tube adapter and round tube cap

The fixing elements are required for connecting the SIMATIC HMI PRO device with the support arm head of the respective support arm system.

Since the support arm head is connected directly to the device, there is complete flexibility in the choice of support arm components.

Adapter sets are available for the VESA 75 and VESA 100 systems.

Further adapter sets can be obtained directly from the respective support arm manufacturers:

- Bernstein
- Rittal
- Rose
- Haseke and
- Rolec

For the 4:3 and 16:9 variants, basic adapters are available according to design:

- The basic adapter is included in the scope of delivery of the device for 4:3 systems (dark gray)
- The basic adapter is included in the scope of delivery of the device for 16:9 systems (silver) (the basic adapter is included in the scope of delivery as a matter of principle. It is excluded only from the version "prepared for support arm and extension components", because connection is made via a round tube.)

For the version "prepared for support arm and extension components" of the 16:9 PRO devices, installation can alternatively take place with the Siemens round tube adapter or with a standard 48 mm diameter round tube. The round tube adapter enables the transition from a round tube connection to the familiar mechanical interface of the basic adapter. This means you can combine different versions of the PRO devices with the same support arm or pedestal system.

#### Ordering data

#### Article No.

<b>VESA 100 adapter set<sup>1)</sup></b>	<b>6AV7674-0KD00-0AA0</b>
<b>VESA 75 adapter set</b>	<b>6AV7674-0KE00-0AA0</b>
<b>Basic adapter for 16:9 systems</b>	<b>6AV7674-1KA00-0AA0</b>
Spare part (silver, included in the scope of delivery of the device)	
<b>Round tube adapter for 16:9 systems</b>	<b>6AV7674-1KF00-0AA0</b>
Suitable for 16:9 PRO devices of the type "prepared for support arm and extension components (round tube connection)"	
<b>VESA 100/75 round tube adapter</b>	<b>6AV6881-0AD56-0AA0</b>
For SIMATIC PRO devices. Can be mounted with a 100 mm (M6) or 75 mm (M6) VESA. IP20 cable entry directly in the round tube adapter. Suitable for all common support arm systems with corresponding VESA coupling, load capacity and hole spacing. More information is available in the technical specifications.	
<b>Round tube cap for PRO devices</b>	<b>6AV7674-1LB40-0AA0</b> <b>6AV7674-1LB50-0AA0</b>
Replacement adapter for PRO devices	

<sup>1)</sup> The VESA 100 adapter set cannot be used in combination with the 19" Flat Panel PRO.

##### Note:

The 48 mm internal diameter of the support arm tubes is not suitable for feeding through the standard DVI-D cable.

##### Scope of delivery:

- One adapter set or basic adapter, round tube adapter
- Fittings for mounting

#### Technical specifications

Article number	<b>6AV7674-0KD00-0AA0</b>	<b>6AV7674-0KE00-0AA0</b>
	Adapter Set VESA 100 Fully enclosed HMI	Adapter Set VESA 75 f. Fully Enclose HMI
<b>General information</b>		
Product type designation	Adapter set VESA 100	Adapter set VESA 75
<b>Degree and class of protection</b>		
IP (all-round)	IP65	IP65
<b>Ambient conditions</b>		
Suited for indoor use	Yes	Yes
Suited for outdoor use	No	No
<b>Ambient temperature during operation</b>		
• min.	0 °C	0 °C
• max.	55 °C	55 °C
<b>Relative humidity</b>		
• Operation, max.	90 %	90 %
• Condensation permissible	No	No
<b>Scope of supply</b>		
Delivery quantity in pieces	1	1
<b>Other</b>		
Merchandise	No	No
Manufacturer name	SIEMENS AG	SIEMENS AG
Manufacturer's address	Gleiwitzerstraße 555, 90475 Nuremberg, Germany	Gleiwitzerstraße 555, 90475 Nuremberg, Germany
Target devices	Not suitable for 19" 4:3 devices	Not suitable for 19" 4:3 devices

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Fixing elements

#### Technical specifications

Article number	<b>6AV7674-1KA00-0AA0</b> Basic Adapter for HMI/IPC Pro (16:9)
<b>General information</b>	
Product type designation	Basic adapter
<b>Other</b>	
Merchandise	Yes
Manufacturer name	SIEMENS AG
Manufacturer's address	Gleiwitzerstraße 555, 90475 Nuremberg, Germany
Article number	<b>6AV7674-1KF00-0AA0</b> Flange Mount for Pro Devices
<b>General information</b>	
Product type designation	Flange mount
<b>Installation type/mounting</b>	
Mounting	for the transition from a size 48 round tube to a flange plate (compatible with basic adapter interface)
<b>Degree and class of protection</b>	
IP (all-round)	IP65 when installed
<b>Mechanics/material</b>	
Material	Steel, powder coating in RAL 9006
<b>Dimensions</b>	
Width	76.3 mm; Width of flange plate, distance between holes 40 mm
Height	168 mm; Round tube and flange plate
Depth	80 mm; Depth of flange plate, distance between holes 63 mm
Enclosure diameter	48.3 mm; Round tube in interface area
<b>Weights</b>	
Weight (without packaging)	900 g
<b>Scope of supply</b>	
Delivery quantity in pieces	1
<b>Other</b>	
Target devices	Suitable for PRO devices, prepared for support arm and extension components (round tube connection)

Article number	<b>6AV6881-0AD56-0AA0</b> Flange mount adapter VESA 100/75
<b>General information</b>	
Product type designation	VESA 100/75 flange adapter
<b>Installation type/mounting</b>	
Mounting	VESA 100 mm / 75 mm with M6 thread
Mounting type	Support arm with VESA 100 mm or 75 mm
<b>Degree and class of protection</b>	
IP (at the front)	IP20 (depending on mounting)
<b>Ambient conditions</b>	
Suited for indoor use	Yes
Suited for outdoor use	No
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	55 °C
<b>Relative humidity</b>	
• Operation, max.	90 %
• Condensation permissible	No
<b>Mechanics/material</b>	
Material	steel
• Aluminum	No
• Sheet steel	Yes; 11SMnPb30 + C
• PET	No
Enclosure material (rear)	sheet metal S235 powder-coated
<b>Dimensions</b>	
Width	135 mm
Height	120 mm
Depth	67.5 mm
<b>Scope of supply</b>	
Delivery quantity in pieces	1; VESA round tube adapter 100/75 suitable for PRO devices, max. IP20 attainable
Components included	Without additional accessories
<b>Other</b>	
Merchandise	Yes; VESA 100/75 PRO adapter
Manufacturer name	QUERUM products UG
Manufacturer's address	Wirtsstr. 23, 85110 Kipfenberg-Böhming, Germany
contacting the manufacturer	email: <a href="mailto:querumproducts@web.de">querumproducts@web.de</a>
Target devices	Not suitable for 19" 4:3 devices
Note:	Max. load 35 kg, for expandable support arm mounting

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Fixing elements

#### Technical specifications

Article number	<b>6AV7674-1LB40-0AA0</b>	<b>6AV7674-1LB50-0AA0</b>
	Round tube plug for PRO devices	Exchange adapter for PRO devices
<b>General information</b>		
Product type designation	round tube cap	replacement adapter
<b>Degree and class of protection</b>		
IP (all-round)	IP65 when installed	IP65 when installed
<b>Mechanics/material</b>		
Material		
• Aluminum	Yes; Powder-coated, RAL 9006	Yes; Powder-coated, RAL 9006
<b>Weights</b>		
Weight (without packaging)	0.24 kg	0.34 kg
<b>Scope of supply</b>		
Delivery quantity in pieces	1	1
Components included	Round tube plug for PRO devices	Screws for attachment
<b>Other</b>		
Target devices	PRO devices for support arm (extendable, round tube)	PRO devices for support arm (extendable, round tube) and pedestal (extendable, flange below)

#### More information

More information is available on the internet at

<https://www.siemens.com/ip65-hmi-devices>.

#### Note:

Do you need a specific modification or extension to the products described here? Under "Customized products" you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Overview

##### Extension Units

Extension Units with 12" to 22", as well as a 24" portrait version for SIMATIC HMI PRO devices, are part of the system components for fully-enclosed IP65-protected devices. They enable the expansion of the operating options on site by the installation of various operator controls. Communication can take place via PROFINET, PROFIsafe or conventional wiring.

##### SIMATIC Extension Unit (BTO & Advanced)

With Customized Automation, Extension Units are built to specific customer requirements and given their own customer MLFB. BTO (built to order).

##### Extension Units for 16:9 PRO devices



Extension Units for the 16:9 PRO devices are suitable for the flexible installation of various operator controls that extend the operating options on site easily and on an individual basis. They are coordinated with the design of the 16:9 PRO devices and can easily be mounted below the device by the customers themselves.

Additionally, the Extension Unit box is available for the flexible installation of lower operator controls.

#### Ordering data

#### Article No.

##### Extension Units for 16:9 PRO devices

##### Extension Unit Hardwired

- 12"
- 15"
- 19"
- 22"
- 24"
- 24" portrait

6AV7674-1LA31-0AA0  
6AV7674-1LA41-0AA0  
6AV7674-1LA51-0AA0  
6AV7674-1LA61-0AA0  
6AV7674-1LA71-0AA0  
6AV7674-1LA81-0AA0

##### Extension Unit PROFINET

- 12"
- 15"
- 19"
- 22"
- 24"
- 24" portrait

6AV7674-1LA32-0AA0  
6AV7674-1LA42-0AA0  
6AV7674-1LA52-0AA0  
6AV7674-1LA62-0AA0  
6AV7674-1LA72-0AA0  
6AV7674-1LA82-0AA0

##### Extension Unit PROFIsafe

- 12"
- 15"
- 19"
- 22"
- 24"
- 24" portrait

6AV7674-1LA33-0AA0  
6AV7674-1LA43-0AA0  
6AV7674-1LA53-0AA0  
6AV7674-1LA63-0AA0  
6AV7674-1LA73-0AA0  
6AV7674-1LA83-0AA0

##### Extension Unit box

- 12"
- 15"
- 19"
- 22"
- 24"
- 24" portrait

6AV7674-1LA30-0AA0  
6AV7674-1LA40-0AA0  
6AV7674-1LA50-0AA0  
6AV7674-1LA60-0AA0  
6AV7674-1LA70-0AA0  
6AV7674-1LA80-0AA0

##### Extension Unit Advanced PROFINET <sup>1)</sup>

- 12" KP12 PN
- 15" KP12 PN
- 19" KP12 PN
- 22" KP12 PN
- 12" KP24 PN
- 15" KP36 PN
- 19" KP36 PN
- 22" KP48 PN

6AV2185-8CE01-0AA0  
6AV2185-8DE01-0AA0  
6AV2185-8EE01-0AA0  
6AV2185-8FE01-0AA0  
6AV2185-8CE08-0AA0  
6AV2185-8DE08-0AA0  
6AV2185-8EE08-0AA0  
6AV2185-8FE08-0AA0

##### Extension Unit Advanced PROFIsafe <sup>1)</sup>

- 12" KP12F PN
- 15" KP12F PN
- 19" KP12F PN
- 22" KP12F PN

6AV2185-8CF01-0AA0  
6AV2185-8DF01-0AA0  
6AV2185-8EF01-0AA0  
6AV2185-8FF01-0AA0

<sup>1)</sup> Max. two Extension Units possible as extension

#### Scope of delivery

Extension Units Hardwired:

- 1 Extension Unit
- 1 plug connector, 16-pin, for interface X12
- 1 plug connector, 12-pin, for interface X11
- 1 plug connector, 8-pin, for interface X10
- 1 power supply terminal for 24 V DC
- 4 bolts M4x20 for mounting the Extension Unit on the SIMATIC PRO device

PROFINET Extension Units:

- 1 Extension Unit
- 1 plug connector, 8-pin, for interface X10
- 1 power supply connector for 24 V DC
- 4 bolts M4x20 for mounting the Extension Unit on the SIMATIC PRO device

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

Ordering data	Article No.	Article No.
<b>Operator controls</b>		
<b>EMERGENCY STOP button</b>	<b>6AV7674-1MA00-0AA0</b>	
<b>Illuminated pushbutton</b>		
• One NO contact	<b>6AV7674-1MB00-0AA0</b>	
• One NO contact and one NC contact	<b>6AV7674-1MG00-0AA0</b>	
<b>Pushbutton Safety</b>	<b>6AV7674-1MG50-0AA0</b>	
<b>Indicator light</b>	<b>6AV7674-1MC00-0AA0</b>	
<b>Selector switch</b>	<b>6AV7674-1MD00-0AA0</b>	
<b>Keyswitch</b>	<b>6AV7674-1ME00-0AA0</b>	
		<b>Keyswitch Safety</b>
		<b>6AV7674-1ME50-0AA0</b>
		<b>Accessories</b>
		<b>USB interface for front mounting in Extension Unit</b>
		<b>6AV7674-1MF00-0AA0</b>
		USB 2.0 type A, IP65 degree of protection with closed protective cover, cable and plug
		<b>Insert labels for self-inscription</b>
		<b>6AV7674-1LB30-0AA0</b>
		<b>Label holders for self-inscription</b>
		<b>6AV7674-1LB20-0AA0</b>

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### Technical specifications

Article number	6AV7674-1LA31-0AA0	6AV7674-1LA41-0AA0	6AV7674-1LA51-0AA0	6AV7674-1LA61-0AA0	6AV7674-1LA71-0AA0	6AV7674-1LA81-0AA0
	Extension Unit 12" hardwired	Extension Unit 15" hardwired	Extension Unit 19" hardwired	Extension Unit 22" hardwired	Extension Unit 24" hardwired	Extension Unit 24" Portrait hardwired
<b>General information</b>						
Product type designation	Extension Unit 12" Hardwired	Extension Unit 15" hardwired	Extension Unit 19" hardwired	Extension Unit 22" hardwired	Extension Unit 24" hardwired	Extension Unit 24" Portrait hardwired
<b>Control elements</b>						
<b>Connection type</b>						
• Connection type of the LED module	12-pin connector	12-pin connector	12-pin connector	12-pin connector	12-pin connector	12-pin connector
• Connection type of the contacts of the control elements	16-pin connector	16-pin connector	16-pin connector	16-pin connector	16-pin connector	16-pin connector
• Connection type of the safety-related contacts (emergency stop)	8-pin connector	8-pin connector	8-pin connector	8-pin connector	8-pin connector	8-pin connector
<b>Installation type/mounting</b>						
Mounting	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)
Mounting type	Screwed joint	Screwed joint	Screwed joint	Screwed joint	Screwed joint	Screwed joint
Rack mounting	No	No	No	No	No	No
Front mounting	No	No	No	No	No	No
Number of slots for command devices and signaling units	6	8	10; Max. 8 control elements + 1 emergency stop button can be mounted (refer to manual)	10; Max. 8 control elements + 1 emergency stop button can be mounted (refer to manual)	12; Max. 8 control elements + 1 emergency stop button can be mounted (refer to manual)	6
RFID reader can be installed						Yes; SIMATIC RF200 Access Control Reader RF1060R
<b>Supply voltage</b>						
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
<b>Degree and class of protection</b>						
IP (all-round)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front						Yes; All-round
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	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
<b>Ambient conditions</b>						
<b>Ambient temperature during operation</b>						
• min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C	50 °C	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	2 000 m	2 000 m	2 000 m

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	6AV7674-1LA31-0AA0	6AV7674-1LA41-0AA0	6AV7674-1LA51-0AA0	6AV7674-1LA61-0AA0	6AV7674-1LA71-0AA0	6AV7674-1LA81-0AA0
	Extension Unit 12" hardwired	Extension Unit 15" hardwired	Extension Unit 19" hardwired	Extension Unit 22" hardwired	Extension Unit 24" hardwired	Extension Unit 24" Portrait hardwired
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Cables</b>						
Cable length	30 m					
<b>Mechanics/material</b>						
Material						
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
Enclosure material (front)						
• Aluminum	Yes; Knockout covered with black film					
<b>Dimensions</b>						
Width	313 mm	396 mm	462 mm	527 mm	583 mm	361 mm
Height	99 mm					
Depth	100.65 mm					100.65 mm
Thickness		100.65 mm	100.65 mm	100.65 mm	100.65 mm	
<b>Weights</b>						
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	2.6 kg	2.2 kg
<b>Scope of supply</b>						
Delivery quantity in pieces	1	1	1	1	1	1
Components included	all connectors required for customer interfaces					
Article number	6AV7674-1LA32-0AA0	6AV7674-1LA42-0AA0	6AV7674-1LA52-0AA0	6AV7674-1LA62-0AA0	6AV7674-1LA72-0AA0	6AV7674-1LA82-0AA0
	Extension Unit 12" PROFINET	Extension Unit 15" PROFINET	Extension Unit 19" PROFINET	Extension Unit 22" PROFINET	Extension Unit 24" PROFINET	Extension Unit 24" Portrait PROFINET
<b>General information</b>						
Product type designation	Extension Unit 12" PROFINET	Extension Unit 15" PROFINET	Extension Unit 19" PROFINET	Extension Unit 22" PROFINET	Extension Unit 24" PROFINET	Extension Unit 24" Portrait PROFINET
<b>Control elements</b>						
With parameterizable keys	Yes	Yes	Yes	Yes		
<b>Connection type</b>						
• Connection type of the safety-related contacts (emergency stop)	8-pin connector					
<b>Installation type/mounting</b>						
Mounting	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)
Mounting type	Screwed joint					
Rack mounting	No	No	No	No	No	No
Front mounting	No	No	No	No	No	No
Number of slots for command devices and signaling units	6	8	10	12	12	6
RFID reader can be installed		Yes; SIMATIC RF200 Access Control Reader RF1060R				
<b>Supply voltage</b>						
Rated value (DC)	24 V					
<b>Interfaces</b>						
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch					

## Operator panels

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Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	6AV7674-1LA32-0AA0 Extension Unit 12" PROFINET	6AV7674-1LA42-0AA0 Extension Unit 15" PROFINET	6AV7674-1LA52-0AA0 Extension Unit 19" PROFINET	6AV7674-1LA62-0AA0 Extension Unit 22" PROFINET	6AV7674-1LA72-0AA0 Extension Unit 24" PROFINET	6AV7674-1LA82-0AA0 Extension Unit 24" Portrait PROFINET
<b>Protocols</b>						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>						
<b>Media redundancy</b>						
- MRP	Yes	Yes	Yes	Yes	Yes	Yes
<b>Test commissioning functions</b>						
Key and signal lamp test	Yes; automatically when switching on		Yes; automatically when switching on			
<b>Degree and class of protection</b>						
IP (all-round)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front	Yes; All-round	Yes; All-round	Yes; All-round	Yes; All-round		Yes; All-round
<b>Standards, approvals, certificates</b>						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	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
<b>Ambient conditions</b>						
<b>Ambient temperature during operation</b>						
• min.	0 °C					
• max.	50 °C					
<b>Altitude during operation relating to sea level</b>						
• Installation altitude above sea level, max.	2 000 m					
<b>Relative humidity</b>						
• Operation, max.	90 %; no condensation					
<b>Cables</b>						
Cable length	30 m; Max. for emergency stop	30 m				
<b>Mechanics/material</b>						
<b>Material</b>						
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
<b>Enclosure material (front)</b>						
• Aluminum	Yes; Knockout covered with black film					
<b>Dimensions</b>						
Width	313 mm	396 mm	462 mm	527 mm	583 mm	361 mm
Height	99 mm					
Depth	100.65 mm					
<b>Weights</b>						
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	2.6 kg	2.2 kg
<b>Scope of supply</b>						
Delivery quantity in pieces	1	1	1	1	1	1
Components included	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs

## Operator panels

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Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	6AV7674-1LA33-0AA0	6AV7674-1LA43-0AA0	6AV7674-1LA53-0AA0	6AV7674-1LA63-0AA0	6AV7674-1LA73-0AA0
	Extension Unit 12" PROFISAFE	Extension Unit 15" PROFISAFE	Extension Unit 19" PROFISAFE	Extension Unit 22" PROFISAFE	Extension Unit 24" PROFISAFE
<b>General information</b>					
Product type designation	Extension Unit 12" PROFISafe	Extension Unit 15" PROFISafe	Extension Unit 19" PROFISafe	Extension Unit 22" PROFISafe	Extension Unit 24" PROFISafe
<b>Control elements</b>					
With parameterizable keys	Yes	Yes	Yes	Yes	
<b>Installation type/mounting</b>					
Mounting	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)
Mounting type	Screwed joint				
Rack mounting	No	No	No	No	No
Front mounting	No	No	No	No	No
Number of slots for command devices and signaling units	6	8	10	12	12
RFID reader can be installed	Yes; SIMATIC RF200 Access Control Reader RF1060R				
<b>Supply voltage</b>					
Rated value (DC)	24 V				
<b>Interfaces</b>					
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch				
<b>Protocols</b>					
PROFISafe	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor
<b>Redundancy mode</b>					
<b>Media redundancy</b>					
- MRP	Yes	Yes			Yes
<b>Test commissioning functions</b>					
Key and signal lamp test	Yes; automatically when switching on				
<b>Degree and class of protection</b>					
IP (all-round)	IP65	IP65	IP65	IP65	IP65
NEMA (front)					
• Enclosure Type 4x at the front	Yes; All-round	Yes; All-round	Yes; All-round	Yes; All-round	
<b>Standards, approvals, certificates</b>					
CE mark	Yes	Yes	Yes	Yes	Yes
UL approval	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
<b>Ambient conditions</b>					
<b>Ambient temperature during operation</b>					
• min.	0 °C				
• max.	50 °C				
<b>Altitude during operation relating to sea level</b>					
• Installation altitude above sea level, max.	2 000 m				
<b>Relative humidity</b>					
• Operation, max.	90 %; no condensation				
<b>Cables</b>					
Cable length					30 m

## Operator panels

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### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	<b>6AV7674-1LA33-0AA0</b> Extension Unit 12" PROFISAFE	<b>6AV7674-1LA43-0AA0</b> Extension Unit 15" PROFISAFE	<b>6AV7674-1LA53-0AA0</b> Extension Unit 19" PROFISAFE	<b>6AV7674-1LA63-0AA0</b> Extension Unit 22" PROFISAFE	<b>6AV7674-1LA73-0AA0</b> Extension Unit 24" PROFISAFE
<b>Mechanics/material</b>					
Material					
• Aluminum	Yes	Yes	Yes	Yes	Yes
Enclosure material (front)					
• Aluminum	Yes; Knockout covered with black film	Yes; Knockout covered with black film			
<b>Dimensions</b>					
Width	313 mm	396 mm	462 mm	527 mm	583 mm
Height	99 mm	99 mm	99 mm	99 mm	99 mm
Depth	100.65 mm	100.65 mm	100.65 mm	100.65 mm	100.65 mm
<b>Weights</b>					
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	2.6 kg
<b>Scope of supply</b>					
Delivery quantity in pieces	1	1	1	1	1
Components included	Power supply connector	Power supply connector	Power supply connector	Power supply connector	Power supply connector
Article number	<b>6AV2185-8CE01-0AA0</b> Extension Unit 12" KP12 PN	<b>6AV2185-8DE01-0AA0</b> Extension Unit 15" KP12 PN	<b>6AV2185-8EE01-0AA0</b> Extension Unit 19" KP12 PN	<b>6AV2185-8FE01-0AA0</b> Extension Unit 22" KP12 PN	
<b>General information</b>					
Product type designation	Extension Unit 12" KP12 PN	Extension Unit 15" KP12 PN	Extension Unit 19" KP12 PN	Extension Unit 22" KP12 PN	
<b>Control elements</b>					
Version of actuating element	1x Key Panel 12				
Operating principle of the actuating element	Tactile feedback	Tactile feedback	Tactile feedback	Tactile feedback	
Functional lighting	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	
With parameterizable keys	Yes	Yes	Yes	Yes	
<b>Connection type</b>					
• Connection type of the safety-related contacts (emergency stop)	8-pin connector	8-pin connector	8-pin connector	8-pin connector	
<b>Installation type/mounting</b>					
Mounting	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	
Mounting type	Screwed joint	Screwed joint	Screwed joint	Screwed joint	
Rack mounting	No	No	No	No	
Front mounting	No	No	No	No	
Number of slots for command devices and signaling units	3	5	6	8	
RFID reader can be installed	Yes; SIMATIC RF200 Access Control Reader RF1060R				
<b>Supply voltage</b>					
Rated value (DC)	24 V	24 V	24 V	24 V	
<b>Interfaces</b>					
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	
Number of PROFINET interfaces	2; Incl. switch	2; Incl. switch	2; Incl. switch	2; Incl. switch	
<b>Protocols</b>					
PROFINET	Yes	Yes	Yes	Yes	
<b>Redundancy mode</b>					
Media redundancy					
- MRP	Yes	Yes	Yes	Yes	
<b>Degree and class of protection</b>					
IP (all-round)	IP65	IP65	IP65	IP65	

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### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	6AV2185-8CE01-0AA0 Extension Unit 12" KP12 PN	6AV2185-8DE01-0AA0 Extension Unit 15" KP12 PN	6AV2185-8EE01-0AA0 Extension Unit 19" KP12 PN	6AV2185-8FE01-0AA0 Extension Unit 22" KP12 PN
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes; EAC	Yes; EAC	Yes; EAC	Yes; EAC
<b>Ambient conditions</b>				
<b>Ambient temperature during operation</b>				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	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	2 000 m
<b>Relative humidity</b>				
• Operation, max.	90 %; no condensation			
<b>Cables</b>				
Cable length	30 m; Max. for emergency stop			
<b>Mechanics/material</b>				
Material				
• Aluminum	Yes	Yes	Yes	Yes
Enclosure material (front)				
• Aluminum	Yes; Knockout covered with black film			
<b>Dimensions</b>				
Width	313 mm	396 mm	462 mm	527 mm
Height	99 mm	99 mm	99 mm	99 mm
Depth	100.65 mm	100.65 mm	100.65 mm	100.65 mm
<b>Weights</b>				
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg
<b>Scope of supply</b>				
Delivery quantity in pieces	1	1	1	1
Components included	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs
Article number	6AV2185-8CE08-0AA0 Extension Unit 12" KP24 PN	6AV2185-8DE08-0AA0 Extension Unit 15" KP36 PN	6AV2185-8EE08-0AA0 Extension Unit 19" KP36 PN	6AV2185-8FE08-0AA0 Extension Unit 22" KP48 PN
<b>General information</b>				
Product type designation	Extension Unit 12" KP24 PN	Extension Unit 15" KP36 PN	Extension Unit 19" KP36 PN	Extension Unit 22" KP48 PN
<b>Control elements</b>				
Version of actuating element	2x Key Panel 12	3x Key Panel 12	3x Key Panel 12	4x Key Panel 12
Operating principle of the actuating element	Tactile feedback	Tactile feedback	Tactile feedback	Tactile feedback
Functional lighting	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow
With parameterizable keys	Yes	Yes	Yes	Yes
<b>Connection type</b>				
• Connection type of the safety-related contacts (emergency stop)	8-pin connector	8-pin connector	8-pin connector	8-pin connector
<b>Installation type/mounting</b>				
Mounting	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)
Mounting type	Screwed joint	Screwed joint	Screwed joint	Screwed joint
Rack mounting	No	No	No	No
Front mounting	No	No	No	No
Number of slots for command devices and signaling units	0	0	0	0
RFID reader can be installed	No	No	No	No

## Operator panels

Advanced HMI Panel-based  
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### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	6AV2185-8CE08-0AA0 Extension Unit 12" KP24 PN	6AV2185-8DE08-0AA0 Extension Unit 15" KP36 PN	6AV2185-8EE08-0AA0 Extension Unit 19" KP36 PN	6AV2185-8FE08-0AA0 Extension Unit 22" KP48 PN
<b>Supply voltage</b>				
Rated value (DC)	24 V	24 V	24 V	24 V
<b>Interfaces</b>				
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch	2; Incl. switch	2; Incl. switch	2; Incl. switch
<b>Protocols</b>				
PROFINET	Yes	Yes	Yes	Yes
<b>Redundancy mode</b>				
<b>Media redundancy</b>				
- MRP	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>				
IP (all-round)	IP65	IP65	IP65	IP65
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
CSA approval			Yes	
UL approval	Yes	Yes	Yes	Yes
cULus	Yes	Yes		Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes; EAC	Yes; EAC	Yes; EAC	Yes; EAC
<b>Ambient conditions</b>				
<b>Ambient temperature during operation</b>				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	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	2 000 m
<b>Relative humidity</b>				
• Operation, max.	90 %; no condensation			
<b>Cables</b>				
Cable length	30 m; Max. for emergency stop			
<b>Mechanics/material</b>				
Material				
• Aluminum	Yes	Yes	Yes	Yes
Enclosure material (front)				
• Aluminum	Yes; Knockout covered with black film			
<b>Dimensions</b>				
Width	313 mm	396 mm	462 mm	527 mm
Height	99 mm	99 mm	99 mm	99 mm
Depth	100.65 mm	100.65 mm	100.65 mm	100.65 mm
<b>Weights</b>				
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg
<b>Scope of supply</b>				
Delivery quantity in pieces	1	1	1	1
Components included	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs	Power supply connectors and 8-pole plug-in connectors for safety-related inputs

## Operator panels

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### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	6AV2185-8CF01-0AA0	6AV2185-8DF01-0AA0	6AV2185-8EF01-0AA0	6AV2185-8FF01-0AA0
	Extension Unit 12" KP12F PN	Extension Unit 15" KP12F PN	Extension Unit 19" KP12F PN	Extension Unit 22" KP12F PN
<b>General information</b>				
Product type designation	Extension Unit 12" KP12F PN	Extension Unit 15" KP12F PN	Extension Unit 19" KP12F PN	Extension Unit 22" KP12F PN
<b>Control elements</b>				
Version of actuating element	1x Key Panel 12			
Operating principle of the actuating element	Tactile feedback	Tactile feedback	Tactile feedback	Tactile feedback
Functional lighting	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow	Yes; Freely configurable colors: Red, green, blue, white, yellow
With parameterizable keys	Yes	Yes	Yes	Yes
<b>Installation type/mounting</b>				
Mounting	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)	For mounting on a 16:9 HMI / IPC PRO device (lower part)
Mounting type	Screwed joint	Screwed joint	Screwed joint	Screwed joint
Rack mounting	No	No	No	No
Front mounting	No	No	No	No
Number of slots for command devices and signaling units	3	5	6	8
RFID reader can be installed	Yes; SIMATIC RF200 Access Control Reader RF1060R			
<b>Supply voltage</b>				
Rated value (DC)	24 V	24 V	24 V	24 V
<b>Interfaces</b>				
Number of industrial Ethernet interfaces	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch	2; For the construction of lines and rings without external switch
Number of PROFINET interfaces	2; Incl. switch	2; Incl. switch	2; Incl. switch	2; Incl. switch
<b>Protocols</b>				
PROFIsafe	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor	Yes; 1x SIL 2 (two-channel) or 2x SIL 3 (single-channel) emergency stop sensor
<b>Redundancy mode</b>				
<b>Media redundancy</b>				
- MRP	Yes	Yes	Yes	Yes
<b>Degree and class of protection</b>				
IP (all-round)	IP65	IP65	IP65	IP65
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes; EAC	Yes; EAC	Yes; EAC	Yes; EAC
<b>Ambient conditions</b>				
<b>Ambient temperature during operation</b>				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	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	2 000 m
<b>Relative humidity</b>				
• Operation, max.	90 %; no condensation			
<b>Mechanics/material</b>				
Material				
• Aluminum	Yes	Yes	Yes	Yes
Enclosure material (front)				
• Aluminum	Yes; Knockout covered with black film			

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	<b>6AV2185-8CF01-0AA0</b>	<b>6AV2185-8DF01-0AA0</b>	<b>6AV2185-8EF01-0AA0</b>	<b>6AV2185-8FF01-0AA0</b>	
	Extension Unit 12" KP12F PN	Extension Unit 15" KP12F PN	Extension Unit 19" KP12F PN	Extension Unit 22" KP12F PN	
<b>Dimensions</b>					
Width	313 mm	396 mm	462 mm	527 mm	
Height	99 mm	99 mm	99 mm	99 mm	
Depth	100.65 mm	100.65 mm	100.65 mm	100.65 mm	
<b>Weights</b>					
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	
<b>Scope of supply</b>					
Delivery quantity in pieces	1	1	1	1	
Components included	Power supply connector	Power supply connector	Power supply connector	Power supply connector	
Article number	<b>6AV7674-1MA00-0AA0</b>	<b>6AV7674-1MB00-0AA0</b>	<b>6AV7674-1MG00-0AA0</b>	<b>6AV7674-1MG50-0AA0</b>	<b>6AV7674-1MC00-0AA0</b>
	E-Stop Pushbutton for Ext. Unit	Illuminated Pushbutton for Ext. Unit	Illum. pushbutton for ext.unit (1NO+1NC)	Pushbutton Safety for Ext. Unit	Indicator Light for Ext. Unit
<b>General information</b>					
Product type designation	EMERGENCY STOP mushroom pushbutton for Extension Unit	Illuminated pushbutton for Extension Unit	Illuminated pushbutton for Extension Unit (1 NC contact / 1 NO contact)	Safety pushbutton for Extension Unit (2 NO contacts)	Indicator light for Extension Unit
<b>Control elements</b>					
Version of actuating element	Conical mushroom pushbutton	Pushbutton with flat button	Pushbutton with flat button	Pushbutton with flat button	Flat lens
Operating principle of the actuating element	Latching, rotate to unlatch	Momentary contact	Momentary contact	Momentary contact	
Shape of actuating element	Round	Round	Round	Round	Round
Illuminant	No; Cannot be illuminated	Yes; Can be illuminated	Yes; Can be illuminated	No; Cannot be illuminated	Yes; Can be illuminated
<ul style="list-style-type: none"> <li>Type of light source</li> <li>Color of light source</li> </ul>		Translucent white (different colors are created using the colored disk supplied)	Translucent white (different colors are created using the colored disk supplied)	Translucent white (different colors are created using the colored disk supplied)	Translucent white (different colors are created using the colored disk supplied)
Contact configuration	2 NC contacts	1 NO contact	1 NC contact, 1 NO contact	2 NO contacts	
<b>Installation type/mounting</b>					
Mounting type	Threaded ring	Threaded ring	Threaded ring	Threaded ring	Threaded ring
Front mounting	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices
<b>Supply voltage</b>					
Rated value (DC)	24 V	24 V	24 V	24 V	24 V
<b>Degree and class of protection</b>					
IP (at the front)	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4
<b>Standards, approvals, certificates</b>					
CE mark	Yes	Yes	Yes	Yes	Yes
UL approval	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit
cULus	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit
RCM (formerly C-TICK)	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit
<b>Ambient conditions</b>					
<b>Ambient temperature during operation</b>					
<ul style="list-style-type: none"> <li>min.</li> <li>max.</li> </ul>	0 °C 50 °C	0 °C 50 °C	0 °C 50 °C	0 °C 50 °C	0 °C 50 °C
<b>Altitude during operation relating to sea level</b>					
<ul style="list-style-type: none"> <li>Installation altitude above sea level, max.</li> </ul>	3 500 m	3 500 m	3 500 m	3 500 m	3 500 m

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	<b>6AV7674-1MA00-0AA0</b>	<b>6AV7674-1MB00-0AA0</b>	<b>6AV7674-1MG00-0AA0</b>	<b>6AV7674-1MG50-0AA0</b>	<b>6AV7674-1MC00-0AA0</b>
	E-Stop Pushbutton for Ext. Unit	Illuminated Pushbutton for Ext. Unit	Illum. pushbutton for ext.unit (1NO+1NC)	Pushbutton Safety for Ext. Unit	Indicator Light for Ext. Unit
<b>Relative humidity</b>					
• Operation, max.	90 %	90 %	90 %	90 %	90 %
• Condensation permissible	No	No	No	No	No
<b>Mechanics/material</b>					
Material					
• Plastic	Yes	Yes	Yes	Yes	Yes
Material of the actuating element	plastic	plastic	plastic	plastic	plastic
Material of the front ring	plastic	plastic	plastic	plastic	plastic
Enclosure color (front)	red	Colorless	Colorless	Colorless	Colorless
Color of the front ring	Yellow	Silver metallic	Silver metallic	Silver metallic	Silver metallic
<b>Service life</b>					
• Number of operating cycles, keys	50 000	1 000 000	1 000 000	1 000 000	
<b>Dimensions</b>					
Height of housing front	33.2 mm	9.85 mm	9.85 mm	9.85 mm	9.85 mm
Mounting diameter	22.3 mm	22.3 mm	22.3 mm	22.3 mm	22.3 mm
<b>Weights</b>					
Weight (without packaging)	50 g	50 g	50 g	50 g	50 g
<b>Scope of supply</b>					
Delivery quantity in pieces	1	1	1	1	1
Components included					
• Number of colored lenses		5; colorless, red, yellow, green, blue	5; colorless, red, yellow, green, blue	6; colorless, red, yellow, green, blue, black	5; colorless, red, yellow, green, blue
<b>Other</b>					
Target devices	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)	suitable for Extension Units of the 16:9 HMI/IPC PRO devices as of TIA Portal V16 (refer to manual)	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)
Note:				configurable as of TIA Portal V16	
Article number	<b>6AV7674-1MD00-0AA0</b>	<b>6AV7674-1ME00-0AA0</b>	<b>6AV7674-1ME50-0AA0</b>	<b>6AV7674-1MF00-0AA0</b>	
	Selector Switch for Ext. Unit	Key-operated Switch for Ext. Unit	Safety keyswitch for Extension Unit	USB interface for Extension Unit	
<b>General information</b>					
Product type designation	Selector switch for Extension Unit	Key-operated switch for Extension Unit	Safety keyswitch for Extension Unit	USB interface for Extension Unit	
<b>Control elements</b>					
Version of actuating element	Rotary handle, 3 switch positions	3 switch positions (withdrawal positions)	2 switch positions (pos. 0 removal position)		
Operating principle of the actuating element	Latching	Latching	Latching		
Shape of actuating element	Round	Round	Round		
Illuminant	Yes; Can be illuminated	No; Cannot be illuminated	No; Cannot be illuminated		
• Type of light source	SMT LED				
• Color of light source	Translucent white				
Contact configuration	2 NO contacts	2 NO contacts	2 NO contacts		
<b>Connection type</b>					
• USB				Yes; USB 2.0 type A	
• Cable length				0.7 m	
<b>Installation type/mounting</b>					
Mounting type	Threaded ring	Threaded ring	Threaded ring	Threaded ring	
Front mounting	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	Yes; Front plate attachment in an Extension Unit for 16:9 PRO devices	
<b>Supply voltage</b>					
Rated value (DC)	24 V	24 V	24 V		

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

### System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

#### Technical specifications

Article number	<b>6AV7674-1MD00-0AA0</b> Selector Switch for Ext. Unit	<b>6AV7674-1ME00-0AA0</b> Key-operated Switch for Ext. Unit	<b>6AV7674-1ME50-0AA0</b> Safety keyswitch for Extension Unit	<b>6AV7674-1MF00-0AA0</b> USB interface for Extension Unit
<b>Degree and class of protection</b>				
IP (all-round)				IP65 fully enclosed (when protective cover is closed)
IP (at the front)	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4	IP65 (on front) to EN60529 and NEMA4	IP20 when protective cover is open
<b>Standards, approvals, certificates</b>				
CE mark	Yes	Yes	Yes	Yes
UL approval	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes
cULus	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes
RCM (formerly C-TICK)	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes; Only in combination with Extension Unit	Yes
KC approval				Yes
EAC (formerly Gost-R)				Yes
<b>Ambient conditions</b>				
<b>Ambient temperature during operation</b>				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C
<b>Altitude during operation relating to sea level</b>				
• Installation altitude above sea level, max.	3 500 m	3 500 m	3 500 m	3 500 m
<b>Relative humidity</b>				
• Operation, max.	90 %	90 %	90 %	90 %
• Condensation permissible	No	No	No	No
<b>Operating systems</b>				
<b>Runs under operating system</b>				
• other				Yes; Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit
<b>Cables</b>				
Cable length				0.5 m
smallest bending radius				0 mm
<b>Mechanics/material</b>				
Material				aluminum
• Plastic	Yes	Yes	Yes	
Material of the actuating element	plastic	plastic	plastic	
Material of the front ring	plastic	plastic	plastic	
Enclosure color (front)	gray	gray	gray	Silver metallic
Color of the front ring	Silver metallic	Silver metallic	Silver metallic	
<b>Service life</b>				
• Number of operating cycles, keys	300 000	50 000	50 000	1 500; Insertion cycles
<b>Dimensions</b>				
Height of housing front	22.24 mm	45.1 mm	45.1 mm	
Overall depth				10 mm
Mounting diameter	22.3 mm	22.3 mm	22.3 mm	22.3 mm
<b>Weights</b>				
Weight (without packaging)	50 g	50 g	50 g	0.13 g
<b>Scope of supply</b>				
Delivery quantity in pieces	1	1; Including 2 keys	1; Including 2 keys	
Components included				USB socket with cable and connector, threaded ring
<b>Other</b>				
Target devices	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)	suitable for Extension Units of the 16:9 HMI/IPC PRO devices as of TIA Portal V16 (refer to manual)	Suitable for Extension Units of the 16:9 HMI/IPC PRO devices (refer to manual)
Note:			configurable as of TIA Portal V16	

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

System components for fully-enclosed IP65-protected devices > Extension Units and operator controls

### More information

More information is available on the internet at

<https://www.siemens.com/simatic-hmi-pro>.

#### Note:

Do you need a specific modification or extension to the products described here? Under "Customized products" you can find information about additional and generally available products for the sector, and about the possibilities for customized modification and adaptation.

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

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

#### Overview



#### Extension components

The extension components are part of the system components for PRO devices and complement the portfolio of fully enclosed devices. These components in combination with the basic devices enable customers to implement a large variety of operating scenarios.

The following products are available as extension components:

- Keyboard tray for PRO devices
- Keyboard tray plate for PRO devices
- USB interface for PRO devices
- Handles for PRO devices (12" – 22" variant and 24" variant)

You can find suitable accessories that match the extension elements, such as INOX keyboards, in the category "Accessories" under "Input devices".

#### Ordering data

#### Article No.

<b>Keyboard tray for PRO devices</b> Tilttable, incl. 2-way USB interface; color: silver	<b>6AV7674-1NF01-0AA0</b>
<b>Keyboard tray plate for PRO devices</b> Tilttable, incl. 2-way USB interface; color: silver	<b>6AV7674-1NG00-0AA0</b>
<b>USB interface for PRO devices</b> Cable and connector, USB 2.0 type A. IP65 degree of protection if protective cover is closed. Integrated via cover on the side of the basic adapter	<b>6AV7674-1LX00-0AA0</b>
<b>Handles for PRO devices</b> For optimum handling and haptics when positioning and tilting the HMI PRO device. Universally adjustable from 12" to 22".	<b>6AV7674-1LB10-0AA0</b>
<b>Handles for PRO devices 24"</b>	<b>6AV7674-1LB15-0AA0</b>

## Operator panels

Advanced HMI Panel-based  
Comfort Panels

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

#### Technical specifications

Article number	<b>6AV7674-1NF01-0AA0</b>	<b>6AV7674-1NG00-0AA0</b>
	Keyboard tray for PRO devices	Keyboard tray plate for HMI PRO devices
<b>General information</b>		
Product type designation	keyboard tray	storage plate
<b>Mechanics/material</b>		
Material	No	
• Plastic	No	
• Aluminum	Yes; Powder-coated	
• Sheet steel	No	
• Stainless steel	No	
• PET	No	
Article number	<b>6AV7674-1LB15-0AA0</b>	
	Handles for HMI PRO devices 24"	
<b>General information</b>		
Product type designation	Handles for HMI PRO devices 24"	
<b>Degree and class of protection</b>		
IP (all-round)	IP65 when installed	
<b>Standards, approvals, certificates</b>		
RoHS conformity	Yes	
<b>Mechanics/material</b>		
Material	Yes; Powder-coated, RAL 9006	
• Aluminum	Yes; Powder-coated, RAL 9006	
<b>Weights</b>		
Weight (without packaging)	1.9 kg	
<b>Scope of supply</b>		
Delivery quantity in pieces	1	
Components included	Screws for attachment	
<b>Other</b>		
Target devices	PRO devices for support arm (extendable, round tube) and pedestal (extendable, flange below)	

Article number	<b>6AV7674-1LX00-0AA0</b>
	USB Interface for Pro Devices
<b>General information</b>	
Product type designation	USB interface for PRO devices
<b>Control elements</b>	
<b>Connection type</b>	
• USB	Yes; USB 2.0 type A
• Cable length	0.5 m
<b>Installation type/mounting</b>	
Mounting	Integrated by means of cover on the side of the basic adapter.
<b>Degree and class of protection</b>	
IP (all-round)	IP65 fully enclosed (when protective cover is closed)
IP (at the front)	IP20 when protective cover is open
<b>Standards, approvals, certificates</b>	
CE mark	Yes
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	50 °C
<b>Altitude during operation relating to sea level</b>	
• Installation altitude above sea level, max.	3 500 m
<b>Relative humidity</b>	
• Operation, max.	90 %
• Condensation permissible	No
<b>Cables</b>	
Cable length	0.5 m
<b>Mechanics/material</b>	
Material	Brass, nickel-plated
Enclosure material (front)	USB cover: Anodized aluminum, cover for basic adapter: Aluminum, powder-coated, RAL 9006
Enclosure color (front)	Silver metallic
<b>Service life</b>	
• Number of operating cycles, keys	1 500; Insertion cycles
<b>Dimensions</b>	
Enclosure diameter	22.5 mm; Hole diameter in the cover for the basic adapter
Overall depth	20 mm
<b>Weights</b>	
Weight (without packaging)	0.25 kg
<b>Scope of supply</b>	
Delivery quantity in pieces	1
Components included	USB socket with cable and connector, cover for the basic adapter, bolts for fastening

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels

#### Overview

##### **SIMATIC Mobile Panels**

##### **Mobile Panels 2<sup>nd</sup> Generation**

The second generation of SIMATIC HMI Mobile Panels impresses with its convenience, performance and quality.

The highlights: A brilliant widescreen display, particularly simple configuration and the unique illuminated emergency stop button.

This series of devices offers Panels with 7", 9" and 10" displays, some of which are available with or without safety-related operator controls.

Mobile Panels of the 2<sup>nd</sup> Generation are the successors to the SIMATIC HMI Mobile Panels x77 with cable connections.

- SIMATIC HMI KTP400F Mobile
- SIMATIC HMI KTP700 Mobile
- SIMATIC HMI KTP700F Mobile
- SIMATIC HMI KTP700F Mobile HW
- SIMATIC HMI KTP700F Mobile HW/OR
- SIMATIC HMI KTP900 Mobile
- SIMATIC HMI KTP900F Mobile
- SIMATIC HMI TP1000F Mobile

##### **Mobile Panels for low-temperature environment**

SIMATIC HMI KTP700F Mobile Arctic is designed for use in weather-protected areas with low ambient temperatures down to -28 °C.

For optimum operation even at low temperatures, a touch pen has been integrated in the front panel at the center underneath the display.

The operator panel has the same functionality as the SIMATIC HMI Mobile Panels 2<sup>nd</sup> Generation and is integrated in the "Totally Integrated Automation Portal" engineering framework.

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels 2nd Generation

#### Overview



- SIMATIC HMI KTP700F Mobile HW
- SIMATIC HMI KTP700F Mobile HW/OR
- SIMATIC HMI TP1000F Mobile
- SIMATIC HMI KTP400F Mobile
- SIMATIC HMI KTP700 Mobile
- SIMATIC HMI KTP700F Mobile
- SIMATIC HMI KTP900 Mobile
- SIMATIC HMI KTP900F Mobile

#### Ordering data

#### Article No.

##### SIMATIC Mobile Panels 2<sup>nd</sup> Generation<sup>1)</sup>

**SIMATIC HMI KTP700F Mobile HW**  
7.0" TFT display, 800 x 480 pixels,  
16 million colors,  
key and touch operation,  
6 function keys,  
2 illuminated pushbuttons,  
1x PROFINET/Industrial Ethernet  
interface,  
1x Multimedia card,  
1x USB, key-operated switch,  
acknowledgment button,  
emergency stop/stop button,  
handwheel, configurable as from  
WinCC Comfort V15

**6AV2145-8GB00-0AA0**

##### SIMATIC HMI KTP700F Mobile HW/OR

7.0" TFT display, 800 x 480 pixels,  
16 million colors,  
key and touch operation,  
6 function keys,  
2 illuminated pushbuttons,  
1x PROFINET/Industrial Ethernet  
interface,  
1x Multimedia card,  
1x USB, key-operated switch,  
acknowledgment button,  
emergency stop/stop button,  
handwheel and override,  
configurable as from  
WinCC Comfort V15

**6AV2145-8GB01-0AA0**

##### SIMATIC HMI TP1000F Mobile

10.0" TFT display,  
1 280 x 800 pixels, 16 million colors,  
touch operation, touch pen,  
1x PROFINET/Industrial Ethernet  
interface,  
1x Multimedia card,  
1x USB, key-operated switch,  
acknowledgment button,  
emergency stop/stop pushbutton,  
configurable as from  
WinCC Comfort V14

**6AV2145-6KB20-0AS0**

##### KTP400F Mobile

**6AV2125-2DB23-0AX0**

##### KTP700 Mobile

**6AV2125-2GB03-0AX0**

##### KTP700F Mobile

**6AV2125-2GB23-0AX0**

##### KTP900 Mobile

**6AV2125-2JB03-0AX0**

##### KTP900F Mobile

**6AV2125-2JB23-0AX0**

##### Accessories

##### Connecting cable and accessories for Mobile Panels

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

<sup>1)</sup> The system components (connecting cables and connection boxes) must be ordered separately.

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels 2nd Generation

#### Technical specifications

Article number	<b>6AV2145-8GB00-0AA0</b> SIMATIC HMI KTP700F Mobile HW	<b>6AV2145-8GB01-0AA0</b> SIMATIC HMI KTP700F Mobile HW/OR	<b>6AV2145-6KB20-0AS0</b> SIMATIC HMI TP1000F MOBILE
<b>General information</b>			
Product type designation	KTP700F	KTP700F	TP1000F Mobile
<b>Display</b>			
Design of display	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting
Screen diagonal	7 in	7 in	10.1 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)	50 000 h	50 000 h	50 000 h
<b>Control elements</b>			
<b>Keyboard fonts</b>			
• Function keys			
- Number of function keys	6	6	0
<b>Touch operation</b>			
• Design as touch screen	Yes	Yes	Yes
• Design as multi-touch screen	No	No	No
<b>Special operator controls</b>			
• Stop button (forced blocking)	Yes	Yes	Yes
• Emergency stop button (illuminated and forced blocking)	Yes	Yes	Yes
• Acknowledgement button (3-stage)	Yes	Yes	Yes
• Key-operated switch	Yes	Yes	Yes
• Illuminated pushbutton	Yes	Yes	Yes
• Handwheel	Yes	Yes	No
<b>Camera</b>			
• integrated camera	No	No	No
<b>Expansions for operator control of the process</b>			
• DP direct LEDs (LEDs as S7 output I/O)			
- F1...Fx	6	6	0
• Direct keys (keys as S7 input I/O)			
- F1...Fx	6	6	0
• Direct keys (touch buttons as S7 input I/O)	32	32	0
<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>Time of day</b>			
<b>Clock</b>			
• Hardware clock (real-time)	Yes	Yes	Yes
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	1	1	1
Number of PROFINET interfaces	1	1	1
Number of RS 485 interfaces	0	0	0
Number of USB interfaces	1; USB 2.0	1; USB 2.0	1; USB 2.0
Number of wireless interfaces	0	0	0
Number of SD card slots	1	1	1

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels 2nd Generation

#### Technical specifications

Article number	<b>6AV2145-8GB00-0AA0</b> SIMATIC HMI KTP700F Mobile HW	<b>6AV2145-8GB01-0AA0</b> SIMATIC HMI KTP700F Mobile HW/OR	<b>6AV2145-6KB20-0AS0</b> SIMATIC HMI TP1000F MOBILE
<b>Protocols</b>			
PROFINET	Yes	Yes	Yes
PROFIsafe	Yes	Yes	Yes
PROFIBUS	No	No	No
EtherNet/IP	Yes	Yes	Yes
<b>Protocols (Ethernet)</b>			
• TCP/IP	Yes	Yes	Yes
• DHCP	Yes	Yes	Yes
• SNMP	Yes	Yes	Yes
• DCP	Yes	Yes	Yes
• LLDP	Yes	Yes	Yes
<b>WEB characteristics</b>			
• HTTP	Yes	Yes	Yes
• HTTPS	Yes	Yes	Yes
• HTML	Yes	Yes	Yes
• XML	No	No	No
• CSS	Yes	Yes	Yes
• Active X	No	No	No
• JavaScript	Yes	Yes	Yes
• Java VM	No	No	No
<b>Further protocols</b>			
• MODBUS	Yes	Yes	Yes
<b>Communication functions</b>			
<b>Wireless communication</b>			
• supported standards			
- Radio standard WLAN 802.11	No	No	No
- Bluetooth radio standard	No	No	No
<b>Degree and class of protection</b>			
IP65 (all-round)	Yes	Yes	Yes
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
UL approval	Yes	Yes	
cULus	Yes	Yes	Yes
FM approval	No	No	
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No	No	No
EAC (formerly Gost-R)	Yes	Yes	
Suitable for safety functions	Yes	Yes	Yes
Marine approval	No	No	No
<b>Highest safety class achievable in safety mode</b>			
• Performance level according to ISO 13849-1	PLe	PLe	PLe
• SIL acc. to IEC 61508	SIL 3	SIL 3	SIL 3
<b>Use in hazardous areas</b>			
• ATEX Zone 2	No	No	No
• ATEX Zone 22	No	No	No
• IECEx Zone 2	No	No	No
• IECEx Zone 22	No	No	No
• cULus Class I Zone 2, Division 2	No	No	No
• cULus Class II Division 2	No	No	
• FM Class I Division 2	No	No	No
• FM Class II Division 2	No	No	

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels 2nd Generation

#### Technical specifications

Article number	<b>6AV2145-8GB00-0AA0</b> SIMATIC HMI KTP700F Mobile HW	<b>6AV2145-8GB01-0AA0</b> SIMATIC HMI KTP700F Mobile HW/OR	<b>6AV2145-6KB20-0AS0</b> SIMATIC HMI TP1000F MOBILE
<b>Ambient conditions</b>			
<b>Free fall</b>			
• Fall height, max.	1.2 m	1.2 m	1.2 m
<b>Ambient temperature during operation</b>			
• min.	0 °C	0 °C	0 °C
• max.	45 °C	45 °C	45 °C
<b>Relative humidity</b>			
• Operation, max.	90 %	90 %	90 %
<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	No	No	No
• Pocket Excel	No	No	No
• PDF Viewer	Yes	Yes	Yes
• Media Player	No	No	No
• 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>Multiproject</b>			
• Number of projects (internal)	0	0	0
• Number of projects (external)	0	0	0
<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
• Number of entries per archive	20 000	20 000	20 000

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels 2nd Generation

#### Technical specifications

Article number	<b>6AV2145-8GB00-0AA0</b> SIMATIC HMI KTP700F Mobile HW	<b>6AV2145-8GB01-0AA0</b> SIMATIC HMI KTP700F Mobile HW/OR	<b>6AV2145-6KB20-0AS0</b> SIMATIC HMI TP1000F MOBILE
<b>Security</b>			
• Number of user groups	50	50	50
• Number of users	50	50	50
• SIMATIC Logon	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	No	No	Yes; WinAC RTX
• SIMOTION	Yes	Yes	Yes
<b>Peripherals/Options</b>			
SIMATIC HMI MM memory card: Multi Media Card	Yes	Yes	Yes
SIMATIC HMI SD memory card: Secure Digital memory card	Yes	Yes	Yes
USB memory	Yes	Yes	Yes
<b>Mechanics/material</b>			
Enclosure material (front)			
• Plastic	Yes	Yes	Yes
• Aluminum	No	No	No
• Stainless steel	No	No	No
<b>Dimensions</b>			
Width of the housing front			307.5 mm
Height of housing front			223.5 mm
<b>Weights</b>			
Weight (without packaging)	1.3 kg	1.3 kg	1.6 kg

## Operator panels

### Advanced HMI Panel-based Mobile Panels

#### Mobile Panels 2nd Generation

#### Technical specifications

Article number	6AV2125-2DB23-0AX0	6AV2125-2GB03-0AX0	6AV2125-2GB23-0AX0	6AV2125-2JB03-0AX0	6AV2125-2JB23-0AX0
	SIMATIC HMI KTP400F Mobile	SIMATIC HMI KTP700 Mobile	SIMATIC HMI KTP700F Mobile	SIMATIC HMI KTP900 Mobile	SIMATIC HMI KTP900F Mobile
<b>General information</b>					
Product type designation	KTP400F Mobile	KTP700 Mobile	KTP700F Mobile	KTP900 Mobile	KTP900F Mobile
<b>Display</b>					
Design of display	TFT	TFT widescreen display, LED backlighting			
Screen diagonal	4.3 in	7 in	7 in	9 in	9 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	800 pixel	800 pixel
• Vertical image resolution	272 pixel	480 pixel	480 pixel	480 pixel	480 pixel
<b>Backlighting</b>					
• MTBF backlighting (at 25 °C)	50 000 h	50 000 h	50 000 h	50 000 h	50 000 h
<b>Control elements</b>					
<b>Keyboard fonts</b>					
• Function keys					
- Number of function keys	4	8	8	10	10
<b>Touch operation</b>					
• Design as touch screen					
	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen					
	No	No	No	No	No
<b>Special operator controls</b>					
• Stop button (forced blocking)					
	Yes	No	Yes	No	Yes
• Emergency stop button (illuminated and forced blocking)					
	Yes	No	Yes	No	Yes
• Acknowledgement button (3-stage)					
	Yes	No	Yes	No	Yes
• Key-operated switch					
	No	No	Yes	No	Yes
• Illuminated pushbutton					
	Yes	Yes	Yes	Yes	Yes
<b>Camera</b>					
• integrated camera					
	No	No	No	No	No
<b>Expansions for operator control of the process</b>					
• DP direct LEDs (LEDs as S7 output I/O)					
- F1...Fx	4	8	8	10	10
• Direct keys (keys as S7 input I/O)					
- F1...Fx	4	8	8	10	10
• Direct keys (touch buttons as S7 input I/O)					
	32	32	32	32	32
<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	12 Mbyte
<b>Time of day</b>					
<b>Clock</b>					
• Hardware clock (real-time)					
	Yes	Yes	Yes	Yes	Yes
<b>Interfaces</b>					
Number of industrial Ethernet interfaces	1	1	1	1	1
Number of PROFINET interfaces	1	1	1	1	1
Number of RS 485 interfaces	0	0	0	0	0
Number of USB interfaces	1; USB 2.0	1; USB 2.0	1; USB 2.0	1; USB 2.0	1; USB 2.0
Number of wireless interfaces	0	0	0	0	0
Number of SD card slots	0	1	1	1	1

## Operator panels

### Advanced HMI Panel-based Mobile Panels

#### Mobile Panels 2nd Generation

#### Technical specifications

Article number	6AV2125-2DB23-0AX0 SIMATIC HMI KTP400F Mobile	6AV2125-2GB03-0AX0 SIMATIC HMI KTP700 Mobile	6AV2125-2GB23-0AX0 SIMATIC HMI KTP700F Mobile	6AV2125-2JB03-0AX0 SIMATIC HMI KTP900 Mobile	6AV2125-2JB23-0AX0 SIMATIC HMI KTP900F Mobile
<b>Protocols</b>					
PROFINET	Yes	Yes	Yes	Yes	Yes
PROFIsafe	Yes	No	Yes	No	Yes
PROFIBUS	No	No	No	No	No
EtherNet/IP	Yes	Yes	Yes	Yes	Yes
<b>Protocols (Ethernet)</b>					
• TCP/IP	Yes	Yes	Yes	Yes	Yes
• DHCP	Yes	Yes	Yes	Yes	Yes
• SNMP	Yes	Yes	Yes	Yes	Yes
• DCP	Yes	Yes	Yes	Yes	Yes
• LLDP	Yes	Yes	Yes	Yes	Yes
<b>WEB characteristics</b>					
• HTTP	Yes	Yes	Yes	Yes	Yes
• HTTPS	Yes	Yes	Yes	Yes	Yes
• HTML	Yes	Yes	Yes	Yes	Yes
• XML	No	No	No	No	No
• CSS	Yes	Yes	Yes	Yes	Yes
• Active X	No	No	No	No	No
• JavaScript	Yes	Yes	Yes	Yes	Yes
• Java VM	No	No	No	No	No
<b>Further protocols</b>					
• MODBUS	Yes	Yes	Yes	Yes	Yes
<b>Communication functions</b>					
<b>Wireless communication</b>					
• supported standards					
- Radio standard WLAN 802.11	No	No	No	No	No
- Bluetooth radio standard	No	No	No	No	No
<b>Degree and class of protection</b>					
IP65 (all-round)	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
Suitable for safety functions	Yes	No	Yes	No	Yes
Marine approval	Yes	Yes	Yes	Yes	Yes
<b>Highest safety class achievable in safety mode</b>					
• Performance level according to ISO 13849-1	PLe	none	PLe	none	PLe
• SIL acc. to IEC 61508	SIL 3	No	SIL 3	No	SIL 3
<b>Use in hazardous areas</b>					
• ATEX Zone 2	No	No	No	No	No
• ATEX Zone 22	No	No	No	No	No
• IECEx Zone 2	No	No	No	No	No
• IECEx Zone 22	No	No	No	No	No
• cULus Class I Zone 2, Division 2	No	No	No	No	No
• FM Class I Division 2	No	No	No	No	No

## Operator panels

### Advanced HMI Panel-based Mobile Panels

#### Mobile Panels 2nd Generation

#### Technical specifications

Article number	6AV2125-2DB23-0AX0 SIMATIC HMI KTP400F Mobile	6AV2125-2GB03-0AX0 SIMATIC HMI KTP700 Mobile	6AV2125-2GB23-0AX0 SIMATIC HMI KTP700F Mobile	6AV2125-2JB03-0AX0 SIMATIC HMI KTP900 Mobile	6AV2125-2JB23-0AX0 SIMATIC HMI KTP900F Mobile
<b>Ambient conditions</b>					
<b>Free fall</b>					
• Fall height, max.	1.2 m	1.2 m	1.2 m	1.2 m	1.2 m
<b>Ambient temperature during operation</b>					
• min.	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	45 °C	45 °C	45 °C	45 °C	45 °C
<b>Relative humidity</b>					
• Operation, max.	90 %	90 %	90 %	90 %	90 %
<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	No	No	No	No	No
• Pocket Excel	No	No	No	No	No
• PDF Viewer	Yes	Yes	Yes	Yes	Yes
• Media Player	No	No	No	No	No
• 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>Multiproject</b>					
• Number of projects (internal)	0	0	0	0	0
• Number of projects (external)	0	0	0	0	0
<b>Message system</b>					
• Bit messages					
- Number of bit messages	4 000	4 000	4 000	4 000	4 000
• Analog messages					
- Number of analog messages	200	200	200	200	200
• Message buffer					
- Number of entries	1 024	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	300	300	300	300	300
• Size of internal recipe memory	2 Mbyte	2 Mbyte	2 Mbyte	2 Mbyte	2 Mbyte
• Recipe memory expandable	Yes	Yes	Yes	Yes	Yes
<b>Variables</b>					
• Number of variables per device	2 048	2 048	2 048	2 048	2 048
• Number of variables per screen	50	400	400	400	400
<b>Images</b>					
• Number of configurable images	500	500	500	500	500
<b>Archiving</b>					
• Number of archives per device	50	50	50	50	50
• Number of entries per archive	20 000	20 000	20 000	20 000	20 000

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels 2nd Generation

#### Technical specifications

Article number	6AV2125-2DB23-0AX0 SIMATIC HMI KTP400F Mobile	6AV2125-2GB03-0AX0 SIMATIC HMI KTP700 Mobile	6AV2125-2GB23-0AX0 SIMATIC HMI KTP700F Mobile	6AV2125-2JB03-0AX0 SIMATIC HMI KTP900 Mobile	6AV2125-2JB23-0AX0 SIMATIC HMI KTP900F Mobile
<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>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; WinAC RTX	Yes; WinAC RTX	Yes; WinAC RTX	Yes; WinAC RTX	Yes; WinAC RTX
• SIMOTION	Yes	Yes	Yes	Yes	Yes
<b>Peripherals/Options</b>					
SIMATIC HMI MM memory card: Multi Media Card	No	Yes	Yes	Yes	Yes
SIMATIC HMI SD memory card: Secure Digital memory card	No	Yes	Yes	Yes	Yes
USB memory	Yes	Yes	Yes	Yes	Yes
<b>Mechanics/material</b>					
Enclosure material (front)					
• Plastic	Yes	Yes	Yes	Yes	Yes
• Aluminum	No	No	No	No	No
• Stainless steel	No	No	No	No	No
<b>Weights</b>					
Weight (without packaging)	0.7 kg	1.2 kg	1.3 kg	1.5 kg	1.6 kg

#### More information

More information is available on the internet at

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

#### Note:

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Connection box for Mobile Panels (2nd Generation)

#### Overview



Mobile Panels with emergency stop/stop buttons can be wired into the emergency stop circuit of a machine or plant by means of the connection boxes.

Pressing the emergency stop/stop button on the Mobile Panel activates the emergency stop function.

The emergency stop/stop button on the Mobile Panel supplements, but does not replace, the emergency stop equipment permanently installed on the machine.

#### Ordering data

#### Article No.

##### Connection boxes for SIMATIC Mobile Panels of 2<sup>nd</sup> Generation and Arctic Panel

- Connection Box, Compact
- Connection Box, Standard
- Connection Box, Advanced

**6AV2125-2AE03-0AX0**  
**6AV2125-2AE13-0AX0**  
**6AV2125-2AE23-0AX0**

##### Connecting cable and accessories for Mobile Panels

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

#### Technical specifications

Article number	<b>6AV2125-2AE03-0AX0</b>	<b>6AV2125-2AE13-0AX0</b>	<b>6AV2125-2AE23-0AX0</b>
	SIMATIC HMI Connection Box Compact	SIMATIC HMI Connection Box Standard	SIMATIC HMI Connection Box Advanced
<b>General information</b>			
Product type designation	Connection box	Connection box	Connection box
<b>Product function</b>			
• Web-based management	No	Yes	Yes
<b>FH technology</b>			
<b>Safety evaluation through direct wiring</b>			
• Reconnection without emergency stop circuit interruption	No	No	Yes
• Reconnection with emergency stop circuit interruption	Yes	Yes	No
• Monitoring the STOP button	Yes	Yes	Yes
• Monitoring of emergency stop button	Yes	Yes	Yes
• Monitoring of acknowledgement button	Yes	Yes	Yes
<b>Safety evaluation via PROFIsafe</b>			
• Reconnection without emergency stop circuit interruption	Yes	Yes	Yes
• Reconnection with emergency stop circuit interruption	No	No	No
• Monitoring the STOP button	Yes	Yes	Yes
• Monitoring of emergency stop button	Yes	Yes	Yes
• Monitoring of acknowledgement button	Yes	Yes	Yes
<b>Installation type/mounting</b>			
Wall mounting/direct mounting	No	Yes	Yes
Control cabinet installation	Yes	No	No
<b>Supply voltage</b>			
Rated value (DC)	24 V	24 V	24 V
<b>Input current</b>			
Current consumption (rated value)	18 mA	96 mA	95 mA
Starting current inrush I <sub>p</sub> t	0.003 A <sup>2</sup> ·s	0.15 A <sup>2</sup> ·s	0.16 A <sup>2</sup> ·s
<b>Power</b>			
Active power input, typ.	0.43 W	2.3 W	2.3 W

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Connection box for Mobile Panels (2nd Generation)

#### Technical specifications

Article number	6AV2125-2AE03-0AX0	6AV2125-2AE13-0AX0	6AV2125-2AE23-0AX0
	SIMATIC HMI Connection Box Compact	SIMATIC HMI Connection Box Standard	SIMATIC HMI Connection Box Advanced
<b>Interfaces</b>			
Number of industrial Ethernet interfaces	2	3	3
Number of PROFINET interfaces	2	3	3
Connection point identification	Yes	Yes	Yes
<b>Industrial Ethernet</b>			
• Industrial Ethernet status LED	0	3	3
<b>Protocols</b>			
PROFINET	Yes; No switch functionality	Yes	Yes
IRT	No	No	Yes
PROFIsafe	Yes; No switch functionality	Yes	Yes
EtherNet/IP	Yes	Yes	Yes
AS-Interface	No	No	No
EIB/KNX	No	No	No
<b>Protocols (Ethernet)</b>			
• TCP/IP	Yes; No switch functionality	Yes	Yes
• DHCP	No	Yes	Yes
• SNMP	No	Yes	Yes
• DCP	No	Yes	Yes
• LLDP	No	Yes	Yes
<b>Redundancy mode</b>			
<b>Media redundancy</b>			
- MRP	No	No	Yes
<b>Further protocols</b>			
• MODBUS	Yes	Yes	Yes
• other bus systems	No	No	No
<b>Degree and class of protection</b>			
IP degree of protection		IP65	IP65
IP65 (all-round)		Yes	Yes
IP (at the front)	IP65	IP65	IP65
IP (rear)	IP20		
<b>Standards, approvals, certificates</b>			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	No; in preparation	No; in preparation	No; in preparation
Suitable for safety functions	Yes	Yes	Yes
<b>Highest safety class achievable in safety mode</b>			
• Performance level according to ISO 13849-1	PLe	PLe	PLe
• SIL acc. to IEC 61508	SIL 3	SIL 3	SIL 3

Article number	6AV2125-2AE03-0AX0	6AV2125-2AE13-0AX0	6AV2125-2AE23-0AX0
	SIMATIC HMI Connection Box Compact	SIMATIC HMI Connection Box Standard	SIMATIC HMI Connection Box Advanced
<b>Use in hazardous areas</b>			
• ATEX Zone 2	No	No	No
• ATEX Zone 22	No	No	No
• cULus Class I Zone 2, Division 2	No	No	No
• FM Class I Division 2	No	No	No
<b>Marine approval</b>			
• Germanischer Lloyd (GL)	Yes	Yes	Yes
• American Bureau of Shipping (ABS)	Yes	Yes	Yes
• Bureau Veritas (BV)	Yes	Yes	Yes
• Det Norske Veritas (DNV)	Yes	Yes	Yes
• Korean Register of Shipping (KRS)	Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes	Yes	Yes
• Polski Rejestr Statkow (PRS)	No	No	No
• Chinese Classification Society (CCS)	Yes	Yes	Yes
<b>Ambient conditions</b>			
<b>Ambient temperature during operation</b>			
• min.	0 °C	0 °C	0 °C
• max.	55 °C	55 °C	55 °C
<b>Relative humidity</b>			
• Operation, max.	90 %	90 %	90 %
<b>Configuration</b>			
<b>Configuration software</b>			
• STEP 7 Professional (TIA Portal)	No	No	No
• WinCC Comfort (TIA Portal)	No	Yes; Optional	Yes; Optional
• WinCC Advanced (TIA Portal)	No	Yes; Optional	Yes; Optional
• WinCC Professional (TIA Portal)	No	Yes; Optional	Yes; Optional
<b>Mechanics/material</b>			
<b>Enclosure material (front)</b>			
• Plastic	Yes	Yes	Yes
• Aluminum	No	No	No
• Stainless steel	No	No	No
<b>Dimensions</b>			
Width	96 mm	230 mm	230 mm
Height	125 mm	151.5 mm	151.3 mm
Depth	77.9 mm	75.4 mm	75.4 mm
Mounting cutout, width	78 mm		
Mounting cutout, height	107 mm		
Overall depth	30 mm		
<b>Weights</b>			
Weight (without packaging)	0.25 kg	0.72 kg	0.72 kg

#### More information

More information is available on the internet at

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

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels for low-temperature environment

#### Overview



SIMATIC HMI KTP700F MOBILE ARCTIC

#### **SIMATIC HMI KTP700F Mobile Arctic**

The operator panel with glass touch screen is designed for use in weather-protected areas with low ambient temperatures, e.g. in cooling technology.

It has the same functionality as the SIMATIC HMI Mobile Panels 2<sup>nd</sup> Generation and is configured exclusively with the innovative HMI software WinCC.

The engineering software is integrated into the "Totally Integrated Automation Portal" engineering framework. WinCC (TIA Portal) as of V15.1 is required to configure the device.

#### Ordering data

#### Article No.

Ordering data	Article No.
<b>SIMATIC HMI KTP700F Mobile Arctic</b> Extended operating temperature range, 7.0" TFT display, 800 x 480 pixels, 16 million colors, key and touch operation, 8 function keys, 1x PROFINET/Industrial Ethernet interface, 1x Multimedia card, 1x USB, 1x touch pen, key-operated switch, acknowledgment button, emergency stop/stop button, configurable as of WinCC Comfort V15.1	<b>6AV2145-6GB06-0AA0</b>
<b>Accessories</b>	
<b>Connection boxes, Compact and Advanced</b>	See System components for Mobile Panels
<b>Connecting cable</b>	Connecting cable KTP Mobile

#### Technical specifications

Article number	<b>6AV2145-6GB06-0AA0</b> SIMATIC HMI KTP700F Mobile Arctic
<b>General information</b>	
Product type designation	KTP700F Mobile Arctic
<b>Display</b>	
Design of display	TFT, bonded, daylight-readable
Screen diagonal	7 in
Number of colors	16 777 216
<b>Resolution (pixels)</b>	
• Horizontal image resolution	800 pixel
• Vertical image resolution	480 pixel
<b>Backlighting</b>	
• MTBF backlighting (at 25 °C)	50 000 h
<b>Control elements</b>	
<b>Keyboard fonts</b>	
• Function keys	
- Number of function keys	8
<b>Touch operation</b>	
• Design as touch screen	Yes
• Design as multi-touch screen	No
<b>Special operator controls</b>	
• Stop button (forced blocking)	Yes
• Emergency stop button (illuminated and forced blocking)	Yes
• Acknowledgement button (3-stage)	Yes
• Key-operated switch	Yes
• Illuminated pushbutton	Yes
<b>Camera</b>	
• integrated camera	No
<b>Expansions for operator control of the process</b>	
• DP direct LEDs (LEDs as S7 output I/O)	
- F1...Fx	8
• Direct keys (keys as S7 input I/O)	
- F1...Fx	8
• Direct keys (touch buttons as S7 input I/O)	32
<b>Supply voltage</b>	
Rated value (DC)	24 V
<b>Memory</b>	
Memory available for user data	12 Mbyte
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time)	Yes
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	1
Number of PROFINET interfaces	1
Number of RS 485 interfaces	0
Number of USB interfaces	1; USB 2.0
Number of wireless interfaces	0
Number of SD card slots	1

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels for low-temperature environment

#### Technical specifications

Article number	<b>6AV2145-6GB06-0AA0</b> SIMATIC HMI KTP700F Mobile Arctic
<b>Protocols</b>	
PROFINET	Yes
PROFIsafe	Yes
PROFIBUS	No
EtherNet/IP	Yes
<b>Protocols (Ethernet)</b>	
• TCP/IP	Yes
• DHCP	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
<b>WEB characteristics</b>	
• HTTP	Yes
• HTTPS	Yes
• HTML	Yes
• XML	No
• CSS	Yes
• Active X	No
• JavaScript	Yes
• Java VM	No
<b>Further protocols</b>	
• MODBUS	Yes
<b>Communication functions</b>	
<b>Wireless communication</b>	
• supported standards	
- Radio standard WLAN 802.11	No
- Bluetooth radio standard	No
<b>Degree and class of protection</b>	
IP65 (all-round)	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	Yes
KC approval	No
Suitable for safety functions	Yes
Marine approval	No
<b>Highest safety class achievable in safety mode</b>	
• Performance level according to ISO 13849-1	PLe
• SIL acc. to IEC 61508	SIL 3
<b>Use in hazardous areas</b>	
• ATEX Zone 2	No
• ATEX Zone 22	No
• IECEx Zone 2	No
• IECEx Zone 22	No
• cULus Class I Zone 2, Division 2	No
• cULus Class II Division 2	No
• FM Class I Division 2	No
• FM Class II Division 2	No

Article number	<b>6AV2145-6GB06-0AA0</b> SIMATIC HMI KTP700F Mobile Arctic
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Fall height, max.	1.2 m
<b>Ambient temperature during operation</b>	
• min.	-28 °C
• max.	45 °C
<b>Relative humidity</b>	
• Operation, max.	90 %; no condensation
<b>Languages</b>	
<b>Online languages</b>	
• Number of online/runtime languages	32
<b>Functionality under WinCC (TIA Portal)</b>	
Applications/options	
• Web browser	Yes
• Pocket Word	No
• Pocket Excel	No
• PDF Viewer	Yes
• Media Player	No
• SIMATIC WinCC Sm@rtServer	Yes
• SIMATIC WinCC Audit	Yes
Number of Visual Basic Scripts	Yes
Task planner	
• time-controlled	Yes
• task-controlled	Yes
<b>Multiproject</b>	
• Number of projects (internal)	0
• Number of projects (external)	0
<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
• Number of entries per archive	20 000

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### Mobile Panels for low-temperature environment

#### Technical specifications

Article number	<b>6AV2145-6GB06-0AA0</b> SIMATIC HMI KTP700F Mobile Arctic
<b>Security</b>	
• Number of user groups	50
• Number of users	50
• SIMATIC Logon	Yes
<b>Process coupling</b>	
• S7-1200	Yes
• S7-1500	Yes
• S7-200	Yes
• S7-300/400	Yes
• LOGO!	Yes
• WinAC	Yes; WinAC RTX
• SIMOTION	Yes
<b>Peripherals/Options</b>	
SIMATIC HMI MM memory card: Multi Media Card	Yes
SIMATIC HMI SD memory card: Secure Digital memory card	Yes
USB memory	Yes
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	Yes
• Aluminum	No
• Stainless steel	No
<b>Weights</b>	
Weight (without packaging)	1.3 kg

#### More information

More information is available on the internet at

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

#### Customized modification options

Do you need a specific modification or option for the products described here? Then look up "Customized products", where you will find information about additional sector-specific products that can be ordered as well as about options for customer-specific modification and adaptation.

## Operator panels

Advanced HMI Panel-based  
Mobile Panels

### System components for Mobile Panels

#### Overview



System components for SIMATIC Mobile Panels are perfectly matched to the SIMATIC Mobile Panels. Charging stations, transponders, and diverse connection boxes are available for various applications.

Accessories for SIMATIC Mobile Panels can be found under "Accessories".

Only the latest accessories are listed in this section; the full range of accessories is available in the Mall and in our other online media.

#### More information

Reliable wireless communication solution on different automation levels according to IEEE 802.11n.

The SCALANCE W Industrial Wireless LAN (IWLAN) products facilitate applications scalable in price and performance.

More information is available at

<http://www.siemens.com/iwlan>

## Operator panels

Advanced HMI Panel-based

### Thin clients

#### Overview

The SIMATIC Thin Clients are cost-effective operator terminals that support different protocols and can thus be flexibly connected via PROFINET / Ethernet.

Available:

- SIMATIC Industrial Thin Client

## Operator panels

### Advanced HMI Panel-based Web Panels

#### Web Panels

##### Overview

An Industrial Web Panel (IWP) is an HMI device with industrial approval for display and touch or key operation of HTML5 pages in "kiosk" mode.

Main features are:

- Ethernet interface
- Touch operation
- HTML5-capable web browser
- Online help on the device

Currently, the following Web Panels are offered:

- SIMATIC HMI IWP10F Mobile WebClient

## Operator panels

Advanced HMI Panel-based  
Web Panels

### SIMATIC HMI IWP10F Mobile WebClient

#### Overview



#### IWP10F Mobile WebClient

IWP10F Mobile WebClient is an operator control and display device in rugged design.

Equipped with a capacitive multi-touch screen as well as hardwired safety elements and PROFINET, the HMI device is optimally equipped for various applications and offers additional flexibility in any application.

#### Ordering data

	Article No.
<b>SIMATIC HMI IWP10F Mobile WebClient</b> Mobile WebClient, 10.0" TFT display, 1280x800 pixels, 16 million colors, multi-touch, 7 function keys, handwheel, PROFINET/Industrial Ethernet interface, USB, acknowledgment button, emergency stop button	<b>6AV2145-6KM00-0AA0</b>
<b>Accessories</b>	
<b>Connecting cable</b> • 2 m • 5 m • 8 m • 10 m • 15 m • 20 m • 25 m	<b>6XV1440-4BH20</b> <b>6XV1440-4BH50</b> <b>6XV1440-4BH80</b> <b>6XV1440-4BN10</b> <b>6XV1440-4BN15</b> <b>6XV1440-4BN20</b> <b>6XV1440-4BN25</b>
<b>Connection boxes</b> • compact • standard • advanced	<b>6AV2125-2AE03-0AX0</b> <b>6AV2125-2AE13-0AX0</b> <b>6AV2125-2AE23-0AX0</b>
<b>Wall-mounting bracket</b>	<b>6FC5348-0AA20-0AA0</b>

#### Technical specifications

Article number	<b>6AV2145-6KM00-0AA0</b> IWP10F Mobile WebClient
<b>General information</b>	
Product type designation	IWP10F Mobile WebClient
<b>Display</b>	
Design of display	10" TFT multi-touch
Screen diagonal	10 in
<b>Resolution (pixels)</b>	
• Horizontal image resolution	1 280 pixel
• Vertical image resolution	800 pixel
<b>Backlighting</b>	
• MTBF backlighting (at 25 °C)	50 000 h; At 25°C
<b>Control elements</b>	
<b>Keyboard fonts</b>	
• Function keys	Yes
- Number of function keys	7
<b>Touch operation</b>	
• Design as touch screen	Yes
• Design as multi-touch screen	Yes; Projective-capacitive
<b>Special operator controls</b>	
• Emergency stop button (illuminated and forced blocking)	Yes
• Acknowledgement button (3-stage)	Yes
• Handwheel	Yes
<b>Expansions for operator control of the process</b>	
• DP direct LEDs (LEDs as S7 output I/O) - F1...Fx	7
• Direct keys (keys as S7 input I/O) - F1...Fx	7
<b>Supply voltage</b>	
Rated value (DC)	24 V
<b>Interfaces</b>	
Number of industrial Ethernet interfaces	1
Number of USB interfaces	1
Number of wireless interfaces	0
Number of SD card slots	0
<b>Protocols</b>	
PROFINET	Yes
PROFIsafe	No
<b>Protocols (Ethernet)</b>	
• TCP/IP	Yes
• DHCP	Yes
<b>WEB characteristics</b>	
• HTTP	Yes
• HTTPS	Yes
• HTML	Yes; HTML5
• XML	Yes
• CSS	Yes
• Active X	No
• JavaScript	Yes
• Java VM	No

## Operator panels

Advanced HMI Panel-based  
Web Panels

### SIMATIC HMI IWP10F Mobile WebClient

#### Technical specifications

Article number	<b>6AV2145-6KM00-0AA0</b> IWP10F Mobile WebClient
<b>Standards, approvals, certificates</b>	
CE mark	Yes
cULus	Yes
FM approval	No
RCM (formerly C-TICK)	Yes
KC approval	No
EAC (formerly Gost-R)	No
CCC	No
Suitable for safety functions	Yes
Marine approval	No
<b>Highest safety class achievable in safety mode</b>	
• Performance level according to ISO 13849-1	PLe
• SIL acc. to IEC 61508	SIL 3
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Fall height, max.	1.2 m
<b>Ambient temperature during operation</b>	
• min.	0 °C
• max.	45 °C
<b>Relative humidity</b>	
• Operation, max.	95 %; no condensation

Article number	<b>6AV2145-6KM00-0AA0</b> IWP10F Mobile WebClient
<b>Languages</b>	
<b>Online languages</b>	
• Number of online/runtime languages	5; de, en, fr, it, es
<b>Functionality under WinCC (TIA Portal)</b>	
<b>Variables</b>	
• Number of variables per screen	200
<b>Peripherals/Options</b>	
USB memory	Yes; USB storage medium can be connected
<b>Mechanics/material</b>	
Enclosure material (front)	
• Plastic	Yes
<b>Weights</b>	
Weight (without packaging)	1.5 kg

#### More information

More information is available on the internet at  
<https://support.industry.siemens.com/cs/pd/1663536?pdtdi=pi&dl=de&pnid=29635&lc=com-eng>

## Operator panels

### Advanced HMI PC-based

#### Advanced HMI PC-based

##### Overview

##### ***SIMATIC Advanced HMI – efficient realization of even the most demanding and sophisticated HMI tasks***

A PC-based system is recommended if the production places particularly high demands on the quantity and type of information to be processed and documented.

It offers the appropriate options for sufficient storage space, processor performance and data connection. The user can either opt for a centralized solution in which the visualization and PC are combined in a single unit, or for a distributed solution with an industrial monitor as Thin Client.

##### SIMATIC Industrial Panel PCs

The most complex visualization and control tasks can be realized centrally on the machine with extremely compact industrial panel PCs. You can always find an optimum solution in our portfolio – from the embedded to the high-end industrial PC – to meet the many requirements of manufacturing and process automation.

##### SIMATIC IFP and SIMATIC ITC

Two innovative options are available for distributed control concepts. SIMATIC industrial monitors and Thin Clients are used as a desktop device for control rooms, as a built-in unit for operator panel or as PC-based visualization and control solution in which the operating unit is operated separately.

The following modules are available:

- Panel PC
- Industrial monitors and Thin Clients
- Software packages

## Operator panels

Advanced HMI PC-based

### Panel PC

#### Overview



SIMATIC Panel PCs are suitable thanks to their high industrial compatibility for use in control cabinets, consoles and control panels, as well as directly on the machine. Typical areas of application can be found in both factory and process automation.

There is a broad range of robust, high-performance SIMATIC Panel PCs available for different requirements.

#### **Shared industrial functionality**

- High-quality components and modules with a high MTBF (mean time between failure), which also ensure 24-hour operation in the extended temperature range
- High swing/shock capacity of the devices through special hard-disk suspensions, locked connectors and card retainers
- Rugged housing model with high electromagnetic compatibility (EMC) and integrated industrial power supplies (also in accordance with NAMUR)
- Service-friendly device design
- Bright, brilliant displays in different sizes from 7" to 22"
- Rugged fronts protected from dust, humidity and chemical substances (front-side IP65 degree of protection)

#### **SIMATIC IPC277: The Panel PC with optimized performance – maintenance-free and compact with displays from 7"**

- High degree of flexibility for selecting rugged widescreen fronts from 7" to 19" for a more freely configurable display area
- High resolution, large viewing angle, and up to 100% dimmable backlighting for a brilliant display with optimized power consumption
- Absolutely maintenance-free due to the use of CompactFlash/CFast or SSD as mass storage and fanless operation up to 50 °C ambient temperature
- Maximum industrial functionality due to non-volatile retentive memory (option)
- Ready-to-use embedded bundles with visualization and/or control software

#### **SIMATIC IPC377: the industrial Basic Panel PC at an appealing price**

- Low-cost platform for visualization in the industrial and industry-oriented field
- Flexible installation in the control cabinet or via VESA, as well as simple connection of I/O devices due to a large number of interfaces
- Fanless industrial design
- Available directly ex stock

#### **SIMATIC IPC PX-32: Panel PC without fan with attractive price/performance ratio**

- Single-touch
- Compact design
- High performance with highly compact design and ruggedness
- No rotating parts (without fan and hard disk)
- Ready-to-use devices with optionally preinstalled software

#### **SIMATIC IPC PX-39: The powerful embedded Panel PC – maintenance-free with versatile configuration**

- Multi-touch
- Compact design
- High performance with highly compact design and ruggedness
- Flexible expansion using a PCIe I/O card (optional)
- No rotating parts (without fan and hard disk)
- High security due to use of the operating system
- Retentive memory (NV-RAM, can be used with Software Controller)
- Available as PRO version (fully-enclosed IP65 degree of protection) with multi-touch

#### **SIMATIC IPC677: The high-end Panel PC – with maximum performance, functional scope and expansion capability**

- Rugged, expandable industrial PC with choice of front panels
- Rugged design for industrial use
- Complete PC openness
- Optional PROFIBUS or PROFINET onboard
- All processors with Dual-Core

# Operator panels

## Advanced HMI PC-based

### Panel PC

#### Technical specifications

Article number	6AV7886-0....- ....	6AV7882-0...0- ...0	6AV7231-0....- ...0	6AV7272-.....- ....	6AV7242-.....- ....	6AV7241-.....- ....	6AV7261-.....- ....
	SIMATIC IPC277G	SIMATIC IPC277E	SIMATIC IPC377G	SIMATIC IPC PX-32A	SIMATIC IPC PX-39A	SIMATIC IPC 477E	SIMATIC IPC677E (Panel PC)
<b>General information</b>							
Product type designation	IPC277G	IPC277E	IPC377G	PX-32A	PX-39A	IPC477E	IPC677E
<b>Installation type/mounting</b>							
Mounting	For horizontal and vertical mounting		Panel mount and VESA, horizontal and vertical	For horizontal and vertical mounting	For horizontal and vertical mounting	For horizontal and vertical mounting	For horizontal and vertical mounting
Design	Panel PC, built- in unit	Panel PC, built- in unit	Panel PC, built- in unit	Panel PC, built- in unit	Panel PC, built- in unit	Panel PC, built- in unit	Panel PC, built- in unit
maximum permissible installation angle +/-	45°	45°					
<b>Supply voltage</b>							
Type of supply voltage	24 V DC	24 V DC	24 V DC	9 - 36 V DC	100/240 V AC (autorange) 50/60 Hz; optional 24 V DC	100/240 V AC (autorange) 50/60 Hz; optional 24 V DC	100/240 V AC (autorange); 24 V DC
Rated value (DC)	24 V				24 V	24 V; PELV / SELV floating	
Rated value (AC)					240 V		
<b>Line frequency</b>							
• Rated value 50 Hz					Yes	Yes	Yes
• Rated value 60 Hz					Yes	Yes	Yes
<b>Mains buffering</b>							
• Mains/voltage failure stored energy time	20 ms	20 ms	10 ms	20 ms	20 ms	20 ms	20 ms
<b>Processor</b>							
Processor type	Intel Atom X6211E / X6413E / X6414RE	Intel Celeron N2807 / N2930	Intel Atom X6413E	Intel® Celeron 6600HLE (2.1 GHz, 2C/2T) Intel® Xeon W-11155MLE (1.8/3.1 GHz, 4C/8T) Intel® Xeon W-11555MLE (1.9/4.4 GHz, 6C/12T) Intel® Xeon W-11865MLE (1.5/4.5 GHz, 8C/16T)	Intel® Celeron 6600HLE (2.1 GHz, 2C/2T) Intel® Xeon W-11155MLE (1.8/3.1 GHz, 4C/8T) Intel® Xeon W-11555MLE (1.9/4.4 GHz, 6C/12T) Intel® Xeon W-11865MLE (1.5/4.5 GHz, 8C/16T)	Celeron G3902 (2C/2T, 1.6 GHz, 2 MB Cache); Core i3-6102E (2C/4T, 1.9 GHz, 3 MB Cache); Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB Cache, iAMT); Xeon E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB Cache, iAMT)	Celeron G4900 (2C/2T, 3.1 GHz, 2 MB cache; VT-d); Core i3-8100 (4C/4T, 3.6 GHz, 6 MB cache, VT-d); Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB cache, VT-d, AMT)
Chipset	SoC	SoC		Intel® RM590E	Intel® RM590E	Intel C236 / Intel H110	Intel C246
<b>Graphic</b>							
Graphics controller	Integrated	Integrated		Intel® UHD Graphics 16 EUs (for Intel® Celeron® 6600HLE and Intel® Xeon® W-11155MLE) / Intel® UHD Graphics 32 EUs (for Intel® Xeon® W- 11555MLE and Intel® Xeon® W-11865MLE)	Intel® UHD Graphics 16 EUs (for Intel® Celeron® 6600HLE and Intel® Xeon® W-11155MLE) / Intel® UHD Graphics 32 EUs (for Intel® Xeon® W- 11555MLE and Intel® Xeon® W-11865MLE)	Intel HD graphics controller	Intel UHD Graphics 630 (Core i); Intel UHD Graphics 610 (Celeron)

# Operator panels

## Advanced HMI PC-based

### Panel PC

#### Technical specifications

Article number	6AV7886-0....- ....	6AV7882-0...0- ...0	6AV7231-0....- ...0	6AV7272-.....- ....	6AV7242-.....- ....	6AV7241-.....- ....	6AV7261-.....- ....
	SIMATIC IPC277G	SIMATIC IPC277E	SIMATIC IPC377G	SIMATIC IPC PX-32A	SIMATIC IPC PX-39A	SIMATIC IPC 477E	SIMATIC IPC677E (Panel PC)
<b>Drives</b>							
Hard disk				M.2 SSD ≥ 240 GB	M.2 SSD ≥ 240 GB	2.5" SATA ≥ 320 GB	2.5" SATA ≥ 320 GB
SSD	Yes; 256 Eco / 240 / 480 GB	Yes; 256 Eco / 240 / 480 GB		Yes; ≥ 240 GB optional	Yes; ≥ 240 GB optional, RAID1 optional	Yes; 128 / 240 / 480 GB	Yes; SSD M.2 NVMe 512 GB; SSD 2.5" SATA 480 / 960 GB; RAID1 2x SSD 2.5" SATA 480 / 960 GB in removable drive bay
<b>Memory</b>							
Type of memory	DDR4 SO-DIMM	DDR3L SO-DIMM	DDR4	DDR4-3200 SO-DIMM	DDR4-3200 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2666 DIMM
Main memory	4 / 8 / 16 GB; inband ECC optional	2 / 4 / 8 GB	4 GB, 8 GB, 16 GB	4 / 8 / 16 / 32 GB	4 / 8 / 16 / 32 GB; ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 / 32 / 64 GB
<b>Data areas and their retentivity</b>							
Retentive data area (incl. timers, counters, flags), max.		512 kbyte; 128 KB can be stored in the buffer time; optional			512 kbyte; 128 KB can be stored in the buffer time; optional	512 kbyte; 128 KB can be stored in the buffer time; optional	512 kbyte; 128 KB can be stored in the buffer time
<b>Hardware configuration</b>							
<b>Slots</b>							
• free slots	2x M.2		2x M.2		1x PCIe; optional: 1x PCIe (x4), with card retainer	1x PCIe (slot with card retainer), 1x slot for CFAST card	2x PCI; optional: 1x PCI & 1x PCIe (x16); 2x PCIe (x4, x16); with card retainer
<b>Interfaces</b>							
Number of industrial Ethernet interfaces	3; 3x Ethernet (RJ45)	2; 2x Ethernet (RJ45)	2; 2x RJ45 (independent)	2; 2x Gigabit Ethernet (IE/PN), RJ45	4; 4x Gigabit Ethernet (IE/PN)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)
USB port	4x USB 3.1 Gen2 10 GB/s + 2x USB 2.0 pin header	1x USB 3.0 / 3x USB 2.0 (7" / 9": 2x USB 2.0)		4x USB 3.2 Gen2	4x USB 3.2 Gen2	4x USB 3.0	6x USB 3.1 Gen. 2 (2x type C)
Connection for keyboard/mouse serial interface version	USB / USB without / 1x / 2x COM (RS 232 / 485 / 422; selectable)	USB / USB 1x COM (1x RS 232 / 422 / 485), selectable in the BIOS		USB / USB 2x / 4x (optional) COM (RS 232 / 485 / 422; selectable)	USB / USB 1x / 2x (optional) COM (RS 232 / 485 / 422; selectable)	USB / USB	USB / USB 1x COM
<b>Video interfaces</b>							
• Graphics interface	2x DisplayPort	1x DisplayPort	2x DisplayPort	2x DisplayPort (DP1.4- capable); maximum 4096 × 2304 / 60 Hz / 36 bit	2x DisplayPort (DP1.4- capable); maximum 4096 × 2304 / 60 Hz / 36 bit	2x DisplayPort	2x DisplayPort; 1x DVI-D
<b>Industrial Ethernet</b>							
• Industrial Ethernet interface	3x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)	2x Ethernet (RJ45)	4x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)
- 100 Mbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- 1000 Mbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Protocols</b>							
<b>Protocols (Ethernet)</b>							
• TCP/IP			Yes				
• DHCP	Yes						
<b>Interrupts/diagnostics/status information</b>							
LED status display	No	No		No	No		1x power, 3x user

# Operator panels

## Advanced HMI PC-based

### Panel PC

#### Technical specifications

Article number	6AV7886-0....- ....	6AV7882-0...0- ...0	6AV7231-0....- ...0	6AV7272-.....- ....	6AV7242-.....- ....	6AV7241-.....- ....	6AV7261-.....- ....
	SIMATIC IPC277G	SIMATIC IPC277E	SIMATIC IPC377G	SIMATIC IPC PX-32A	SIMATIC IPC PX-39A	SIMATIC IPC 477E	SIMATIC IPC677E (Panel PC)
<b>Integrated Functions</b>							
<b>Monitoring functions</b>							
• Temperature monitoring	Yes	Yes	Yes	No	Yes	Yes	Yes
• Watchdog	Yes	Yes	Yes	No	Yes	Yes	Yes
• Fan	No	No	No	No	No	No	Yes
• Monitoring function via network	Optional	Optional		Optional	Optional	Optional	Optional
<b>EMC</b>							
<b>Interference immunity against discharge of static electricity</b>							
• Interference immunity against discharge of static electricity	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2
<b>Interference immunity against high-frequency electromagnetic fields</b>							
• Interference immunity against high frequency radiation	10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6	10 V/m, 80 MHz to 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m, 2 GHz to 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V, 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6	10 V/m for 80 ... 1 000 MHz, 80% AM according to IEC 61000-4-3; 3 V/m for 1.4 ... 6 GHz, 80% AM according to IEC 61000-4-3	10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6	10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6	10 V/m, 80 ... 2 000 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m, 2 ... 2.7 GHz; 10 V, 10 kHz ... 80 MHz acc. to IEC 61000-4-6	10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6
<b>Interference immunity to cable-borne interference</b>							
• Interference immunity on supply cables	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric		±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric
• Interference immunity on signal cables >30m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m		±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge	±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
• Interference immunity on signal cables < 30m	±1 kV (5 kHz/100 kHz) acc. to IEC 61000-4-4; burst; length < 30 m; ±2 kV (5 kHz/100 kHz) acc. to IEC 61000-4-4; burst; length > 30 m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m		±1 kV acc. to IEC 61000-4-4, Burst	±1 kV acc. to IEC 61000-4-4, Burst	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m
<b>Interference immunity against voltage surge</b>							
• asymmetric interference	±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric		±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric	±2 kV acc. to IEC 61000-4-5, surge asymmetric
• symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric	±1 kV acc. to IEC 61000-4-5, surge symmetric		±1 kV acc. to IEC 61000-4-5, surge symmetric	±1 kV acc. to IEC 61000-4-5, surge symmetric	±1 kV acc. to IEC 61000-4-5, surge symmetric	±1 kV acc. to IEC 61000-4-5, surge symmetric

## Operator panels

Advanced HMI PC-based

### Panel PC

#### Technical specifications

Article number	6AV7886-0....- .... SIMATIC IPC277G	6AV7882-0...0- ...0 SIMATIC IPC277E	6AV7231-0....- ...0 SIMATIC IPC377G	6AV7272-.....- .... SIMATIC IPC PX-32A	6AV7242-.....- .... SIMATIC IPC PX-39A	6AV7241-.....- .... SIMATIC IPC 477E	6AV7261-.....- .... SIMATIC IPC677E (Panel PC)
<b>Interference immunity to magnetic fields</b>							
• Interference immunity to magnetic fields at 50 Hz	100 A/m; to IEC 61000-4-8	100 A/m; to IEC 61000-4-8		100 A/m; to IEC 61000-4-8	100 A/m; to IEC 61000-4-8	100 A/m; to IEC 61000-4-8	100 A/m; to IEC 61000-4-8
<b>Emission of conducted and non-conducted interference</b>							
• Interference emission via line/AC current cables	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A	Noise emission: EN 61000-6-4:2007 +A1:2011 (industrial environments), CISPR 22 Class B, FCC Class A		IEC 61000-6-4, CAN/CSA CISPR 32 class B, FCC class A	IEC 61000-6-4, CAN/CSA CISPR 32 class B, FCC class A	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
<b>Degree and class of protection</b>							
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	20	IP20	IP40	IP20	IP20	IP20	IP20
<b>Standards, approvals, certificates</b>							
CE mark	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UKCA mark				Yes	Yes		
CSA approval			Yes	Yes	Yes	Yes	
UL approval		Yes	Yes	Yes; UL 61010-2-201 Second Edition, File E472609	Yes; UL 61010-2-201 Second Edition, File E85972	Yes	Yes
• UL 508		Yes		No	No	Yes	
cULus	Yes	Yes		Yes	Yes	Yes	Yes; UL 61010-2-201 Second Edition; CAN/CSA- C22.2 No. 61010-2-201 Second Edition
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	No; in preparation	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes		Yes	No	Yes	Yes	Yes
FCC	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BSMI			Yes	No; in preparation	No; in preparation		
BIS				Yes	Yes		
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005	CE, EN 61000-6-4:2007 +A1:2011, EN 61000-6-2:2005		CE, EN 61000-6-4; CISPR 22:2004 Class A; FCC Class A	EN 61000-6-1, EN 61000-6-2, EN 61000-6-4, CAN/CSA CISPR 32 class A, EN 55032 class B, FCC class A, KN32	CE, EN 61000-6-4; CISPR 22:2004 Class A; FCC Class A	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Dust protection			Protection against foreign bodies > 1 mm				

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# Operator panels

## Advanced HMI PC-based

### Panel PC

#### Technical specifications

Article number	6AV7886-0....- .... SIMATIC IPC277G	6AV7882-0...0- ...0 SIMATIC IPC277E	6AV7231-0....- ...0 SIMATIC IPC377G	6AV7272-.....- .... SIMATIC IPC PX-32A	6AV7242-.....- .... SIMATIC IPC PX-39A	6AV7241-.....- .... SIMATIC IPC 477E	6AV7261-.....- .... SIMATIC IPC677E (Panel PC)
<b>Use in hazardous areas</b>							
• ATEX Zone 2				No		Yes; for inscription on device rating plate	Yes; Optional
• ATEX Zone 22						Yes; for inscription on device rating plate	Yes; Optional
• IECEx Zone 2				No		Yes; for inscription on device rating plate	Yes; Optional
• IECEx Zone 22						Yes; for inscription on device rating plate	Yes; Optional
• CCC Ex						Yes; for inscription on device rating plate	Yes; Optional
• cULus Class I Zone 2, Division 2				No		Yes; for inscription on device rating plate	Yes; Optional
• cULus Class II Division 2						Yes; for inscription on device rating plate	Yes; Optional
• FM Class I Division 2						No	
• FM Class II Division 2						No	
<b>Marine approval</b>							
• Germanischer Lloyd (GL)		Yes; 7", 9", 12" single-touch		No	Yes	Yes	
• American Bureau of Shipping (ABS)		Yes; 7", 9", 12" ST; 12", 15", 19" MT		No	Yes	Yes	Yes; Only with SSD
• Bureau Veritas (BV)		Yes; 7", 9", 12" ST; 12", 15", 19" MT		No	Yes	Yes	Yes; Only with SSD
• Det Norske Veritas (DNV)		Yes; 7", 9", 12" ST; 12", 15", 19" MT		No	Yes	Yes	Yes; Only with SSD
• Korean Register of Shipping (KRS)		Yes; 7", 9", 12" ST; 12", 15", 19" MT		No	Yes	Yes	Yes; Only with SSD
• Lloyds Register of Shipping (LRS)		Yes; 7", 9", 12" ST; 12", 15", 19" MT		No	Yes	Yes	Yes; Only with SSD
• Nippon Kaiji Kyokai (Class NK)		Yes; 7", 9", 12" ST; 12", 15", 19" MT		No	Yes	Yes	Yes; Only with SSD
• Chinese Classification Society (CCS)		Yes; 7", 9", 12" ST; 12", 15", 19" MT					Yes; Only with SSD
<b>Ambient conditions</b>							
<b>Ambient temperature during operation</b>							
• min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	5 °C
• max.	50 °C; from 19", 22", 24": max. 45 °C	50 °C; 19": max. 45 °C	50 °C; when installed vertically in horizontal format, vertical inclination maximum 45° or when installed upright in vertical format	50 °C	50 °C	45 °C	45 °C

## Operator panels

### Advanced HMI PC-based

#### Panel PC

#### Technical specifications

Article number	6AV7886-0....-.... SIMATIC IPC277G	6AV7882-0...0-...0 SIMATIC IPC277E	6AV7231-0....-...0 SIMATIC IPC377G	6AV7272-.....-.... SIMATIC IPC PX-32A	6AV7242-.....-.... SIMATIC IPC PX-39A	6AV7241-.....-.... SIMATIC IPC 477E	6AV7261-.....-.... SIMATIC IPC677E (Panel PC)
<b>Relative humidity</b>							
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 85% at 30 °C (no condensation), storage / transport: 5% to 95% at 25 / 55 °C (no condensation)	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 85% at 30 °C (no condensation), storage / transport: 5% to 95% at 25 / 55 °C (no condensation)	max. 85% at 30 °C, no condensation, gradient $\leq 10$ °C/h	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)	tested according to IEC 60068-2-78, IEC 60068-2-30: operation: temperature 30 °C, relative humidity 85%; permissible range: 0 to 31 °C: 5 - 80%; decreasing linearly to 5 - 25% at 55 °C; storage: temperature 25 °C - 55 °C, relative humidity 95%	Tested according to IEC 60068-2-78, IEC 60068-2-30: 5% to 80% at 25 °C (no condensation)	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation)
• Operation, max.	85 %		85 %	85 %	85 %		
<b>Vibrations</b>							
• Vibration resistance during operation acc. to IEC 60068-2-6	tested according to IEC 60068-2-6: 5 Hz to 8.4 Hz: 3.5 mm, 8.4 Hz to 200 Hz : 9.8m/s <sup>2</sup> (1 g) (except DIN Rail) 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s <sup>2</sup> (0.5 g) (DIN Rail)	Tested according to IEC 60068-2-6: 5 Hz to 8.4 Hz: 3.5 mm, 8.4 Hz to 500 Hz: 9.8 m/s <sup>2</sup>	Tested according to IEC 60068-2-6: 5 Hz to 8.4 Hz: 3.5 mm, 8.4 Hz to 500 Hz: 9.8 m/s <sup>2</sup>	tested according to IEC 60068-2-6: 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 m/s <sup>2</sup>	tested according to IEC 60068-2-6: 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 m/s <sup>2</sup>	IEC 60068-2-6; 5 Hz to 9 Hz: 3.5 mm; 9 Hz to 500 Hz: 9.8 m/s <sup>2</sup> (with SSD or CFast); 10 Hz to 58 Hz: 0.0375 mm; 58 Hz to 200 Hz: 4.9 m/s <sup>2</sup> (hard disk)	tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm; 58 Hz to 500 Hz: 9.8 m/s <sup>2</sup> (1 g)
<b>Shock testing</b>							
• Shock load during operation	Tested according to IEC 60068-2-27: 150 m/s <sup>2</sup> , 11 ms	Tested according to IEC 60068-2-27: 50 m/s <sup>2</sup> , 30 ms	tested according to IEC 60068-2-27: 150 m/s <sup>2</sup> , 11 ms; 5 g, 30 ms	Tested according to IEC 60068-2-27: 150 m/s <sup>2</sup> , 11 ms	Tested according to IEC 60068-2-27: 150 m/s <sup>2</sup> , 11 ms	IEC 60068-2-27; 150 m/s <sup>2</sup> , 11 ms (without hard disk); 50 m/s <sup>2</sup> , 30 ms (with hard disk)	Tested to DIN IEC 60068-2-29: 50 m/s <sup>2</sup> (5 g), 30 ms, 100 shocks
<b>Operating systems</b>							
pre-installed operating system	Windows 10 IoT Enterprise 2019 LTSC, 64 bit, MUI	Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit		Windows 10 IoT Enterprise 2021 LTSC, Industrial OS	Windows 10 IoT Enterprise 2021 LTSC, Industrial OS	Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10	Windows 10 Enterprise 2016 LTSB or 2019 LTSC or 2021 LTSC 64 bit, MUI
Additional info on operating system		optional: SIMATIC Industrial OS					
without operating system	Yes; Optional	Yes; Optional	Yes	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional
<b>Software</b>							
SIMATIC Software	Optional package with SIMATIC WinCC	Optional package with SIMATIC WinCC or WinAC RTX			Optional package with SIMATIC WinCC	Optionally with pre-installed SIMATIC WinCC RT Advanced / Software Controller CPU 1500S software bundle	
<b>Dimensions</b>							
Width			652 mm				
Height			443 mm				
Depth			209 mm				

## Operator panels

Advanced HMI PC-based

### Panel PC

#### More information

More information is available on the internet at  
<http://www.siemens.com/simatic-panel-pc>.

#### Note:

Do you need a specific modification or extension to the products described here? If so, refer to "Customized Automation". There you will find information about additional and generally available sector-specific products as well as options for customer-specific modification and adaptation.

## Operator panels

Advanced HMI PC-based

### Industrial monitors

#### Overview

SIMATIC industrial monitors in industry-standard design are fail-safe and durable. This means that a wide range of operating concepts can be implemented, e.g. as a built-in device for control panels or as a PC-based visualization and control solution that is installed separately from the industrial PC.

## Operator panels

### System interfaces with WinCC (TIA Portal)

#### System interfaces with WinCC (TIA Portal)

##### Overview

The SIMATIC Basic Panel, Comfort Panel and Mobile Panel offer HMI functionality for the control systems:

- SIMATIC S7
- Non-Siemens controllers:
  - Allen Bradley
  - Mitsubishi
  - Modicon
  - Omron

For more detailed information, refer to the WinCC (TIA Portal) user manual, the "Windows-based systems communication" manual, or the WinCC (TIA Portal) online help.

OPC communication and HTTP communication are offered for Comfort Panels and Mobile Panels with an integrated Ethernet interface. Both OPC and HTTP communication can be used in parallel with the process links to SIMATIC S7 or non-Siemens PLCs.

##### Note:

Interface options for HMI devices: See the individual device descriptions.

##### **OPC communication**

OPC Data Access is an open standard for exchanging both local and remote variables between various applications via Industrial Ethernet.

##### **HTTP communication for variable exchange between SIMATIC HMI systems**

Communication based on HTTP message frames enables variables to be exchanged between SIMATIC HMI systems.

Communication standard	SIMATIC HMI			
	Version	Comfort Panel	Mobile Panel 177 PN/ 277	Mobile Panel KTPx00
<b>OPC Data Access V2.05a + OPC UA Data Access V1.01 + OPC Data Access XML V1.00</b>				
OPC DA client (COM/DCOM)	–	–	–	•
OPC DA server (COM/DCOM)	–	–	–	•
OPC UA DA client	•	–	•	•
OPC UA DA server	•	–	•	•
<b>HTTP communication for variable exchange between SIMATIC HMI systems</b>				
HTTP client	•	•	•	•
HTTP server	•	•	•	•

- System interface possible
- System interface not possible

## Operator panels

### System interfaces with WinCC (TIA Portal)

#### SIMATIC S7

##### Overview

The following types of interface are differentiated in respect of the link between the SIMATIC Panels and SIMATIC S7 controllers:

- **PROFINET interface:**  
Coupling of SIMATIC Panel to SIMATIC S7 controllers via Industrial Ethernet TCP/IP using the integrated PROFINET interface of the CPU or, alternatively, a PROFINET interface module.
- **MPI/PROFIBUS interface:**  
Coupling of SIMATIC Panel to SIMATIC S7 controllers via MPI/PROFIBUS using the integrated MPI/PROFIBUS interface of the CPU or the integrated PPI interface of the CPU in the case of S7-200 or, alternatively, a PROFIBUS interface module in the case of S7-1200, S7-1500, S7-300 and S7-400.
- **PPI interface:**  
Coupling of SIMATIC Panel to SIMATIC S7-200 via PPI network using the integrated PPI interface of the CPU.

The maximum possible number of S7 connections of one CPU is determined by its performance capacity (see Catalog ST 70); from the point of view of the SIMATIC Panel, the following restrictions apply:

- Basic Panel, Comfort Panel 4", Mobile Panel 177: max. 4 connections
- Comfort Panels from 7" to 22" (incl. Outdoor), Mobile Panel 2<sup>nd</sup> Generation: max. 8 connections
- Mobile Panel 277: max. 6 connections
- PC with WinCC Runtime Advanced: max. 8 connections

##### PPI interface

The PPI interface is a point-to-point connection between a SIMATIC Panel (PPI master) or alternatively a PG (PPI master) and an S7-200 (PPI slave).

##### MPI/PROFIBUS interface or PROFINET interface

The corresponding multipoint-enabled SIMATIC Panel and SIMATIC S7 communication interfaces are used. The following are possible:

- Interface between one or more SIMATIC Panels (MPI master) and one or more S7-1200/S7-1500/S7-300/S7-400s or WinAC (MPI master) (possible network topology: MPI/PROFIBUS or Industrial Ethernet TCP/IP)
- Interface between one or more SIMATIC Panels (MPI master) and one or more S7-200s (MPI slave)<sup>1)</sup> (possible network topology: PPI, MPI/PROFIBUS)

Unlike PPI connections, MPI connections are static connections that are set up during run-up and then monitored.

In principle this type of information exchange between SIMATIC Panels and SIMATIC S7 is independent of the network used, PPI, MPI/PROFIBUS or Industrial Ethernet: SIMATIC Panels are S7 clients and SIMATIC S7 CPUs are S7 servers.

Controller	SIMATIC HMI					
Target hardware (PROTOCOL) (physics)	Basic Panel	Comfort Panel	Mobile Panel 177 DP / PN <sup>1)</sup>	Mobile Panel 277 <sup>1)</sup>	KTPx00(F) Mobile <sup>1)</sup>	WinCC Runtime Advanced
<b>SIMATIC S7-1200<sup>2)</sup></b>						
over Ethernet (TCP/IP)	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
over MPI or PROFIBUS network	• <sup>4)</sup>	•	• <sup>3)</sup>	•	–	• <sup>5)</sup>
<b>SIMATIC S7-1500<sup>2)</sup></b>						
over Ethernet (TCP/IP)	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
over PROFIBUS network	• <sup>3)</sup>	•	• <sup>3)</sup>	•	–	• <sup>5)</sup>
<b>SIMATIC S7-300, -400, WinAC<sup>2)</sup></b>						
over Ethernet (TCP/IP)	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
over MPI or PROFIBUS network	•	•	• <sup>4)</sup>	•	–	• <sup>5)</sup>
<b>SIMATIC S7-200<sup>2)</sup></b>						
over Ethernet (TCP/IP) (MPI protocol)	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
over MPI or PROFIBUS network	• <sup>4)</sup>	• <sup>6)</sup>	• <sup>4)</sup> <sup>6)</sup>	• <sup>6)</sup>	–	• <sup>5)</sup> <sup>6)</sup>
over PPI network (MPI protocol)	• <sup>4)</sup>	–	•	–	–	–
over PPI network (PPI protocol)	–	• <sup>7)</sup>	• <sup>7)</sup>	• <sup>7)</sup>	–	• <sup>5)</sup> <sup>7)</sup>

- System interface possible
- System interface not possible

<sup>1)</sup> Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

<sup>2)</sup> Controllers can be combined as desired

<sup>3)</sup> Basic Panel PN and Mobile Panel 177 PN only

<sup>4)</sup> Basic Panel DP and Mobile Panel 177 DP only

<sup>5)</sup> Connection via integrated MPI/PROFIBUS interface; in the case of a standard PC, a communications processor (CP) is to be used (e.g. CP 5612/5622)

<sup>6)</sup> Only on passive S7-200

<sup>7)</sup> Can be interfaced via PPI to max. 1 x S7-200 (PPI); network operation (parallel PG, etc.) is possible

##### Note:

For detailed information on cable assignment, refer to WinCC Online Help.

## Operator panels

### System interfaces with WinCC (TIA Portal)

#### Controllers from other manufacturers

##### Overview

SIMATIC Basic Panels, Comfort Panels and Mobile Panels, as well as the SIMATIC HMI software package for PC WinCC Runtime Advanced support the following protocols for linking the control systems of other manufacturers:

- Allen Bradley
  - Ethernet IP protocol
  - DF1 protocol
- Mitsubishi
  - MC TCP/IP protocol
  - FX protocol
- Modicon
  - Modbus TCP/IP protocol
  - Modbus RTU protocol
- Omron
  - Link/Multi Link protocol

The following table contains more detailed information.

##### Connection overview

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI					
	Basic Panel	Comfort Panel Outdoor	Mobile Panel 177 DP <sup>1)</sup> Mobile Panel 177 PN <sup>1)</sup>	Mobile Panel 277 <sup>1)</sup>	KTPx00(F) Mobile	WinCC Runtime Advanced
<b>Allen Bradley (Ethernet IP)</b>						
via Ethernet TCP/IP network to max. 4 x controllers <sup>2)</sup>	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
• ControlLogix 1756-L6x, -L6xS with Ethernet module 1756-ENBT						
• GuardLogix System						
• CompactLogix 1769-L2xE, -L3xE						
• CompactLogix 1769-L4x with Ethernet module 1768-ENBT						
• SLC 5/05						
• MicroLogix 1100, 1400						
<b>Allen Bradley (DF1)</b>						
to max. 1 x controller	• <sup>4) 5)</sup>	• <sup>4)</sup>	• <sup>4) 5)</sup>	• <sup>4)</sup>	-	• <sup>6)</sup>
• SLC 5/03, /04, /05						
• MicroLogix (RS 232)						
to max. 1 x controller	• <sup>4) 5)</sup>	• <sup>4)</sup>	• <sup>4) 5)</sup>	• <sup>4)</sup>	-	• <sup>7)</sup>
• PLC5/11, /20, /30, /40, /60, /80 (RS 232)						
via KF2 gateway and DH+ network to max. 4 x controllers <sup>2)</sup>	• <sup>4) 5)</sup>	• <sup>4)</sup>	• <sup>4) 5)</sup>	• <sup>4)</sup>	-	• <sup>7) 8)</sup>
• SLC 5/04						
• PLC5/11, /20, /30, /40, /60, /80 (RS 232)						
via KF2 gateway and DH+ network to max. 4 x controllers <sup>2)</sup>	• <sup>5)</sup>	•	• <sup>5)</sup>	•	-	-
• SLC 5/04						
• PLC5/11, /20, /30, /40, /60, /80 (RS 422)						
via KF3 gateway and DH485 network to max. 4 x controllers <sup>2)</sup>	• <sup>4) 5)</sup>	• <sup>4)</sup>	• <sup>4) 5)</sup>	• <sup>4)</sup>	-	• <sup>7) 8)</sup>
• SLC 500						
• MicroLogix (RS 232)						

- System interface possible
- System interface not possible

<sup>1)</sup> Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

<sup>2)</sup> The following listed controllers can be combined as required

<sup>3)</sup> Basic Panel PN and Mobile Panel 177 PN only

<sup>4)</sup> The RS 422/RS 232 adapter 6AV6671-8XE00-0AX0 is required for Basic Panels and Comfort Panels

<sup>5)</sup> Basic Panel DP and Mobile Panel 177 DP only

<sup>6)</sup> Connection via Allen Bradley PC cable 1747 CP3

<sup>7)</sup> Connection via Allen Bradley PC cable 1784 CP10

<sup>8)</sup> For connection to KF2/KF3 gateway, a gender-changer (25-pin socket/25-pin socket) is required on the gateway side

Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also <http://support.automation.siemens.com/WW/view/en/29034071>.

## Operator panels

### System interfaces with WinCC (TIA Portal)

#### Controllers from other manufacturers

##### Overview

Controller	SIMATIC HMI					
	Basic Panel	Comfort Panel Outdoor	Mobile Panel 177 DP <sup>1)</sup> Mobile Panel 177 PN <sup>1)</sup>	Mobile Panel 277 <sup>1)</sup>	KTPx00(F) Mobile	WinCC Runtime Advanced
<b>Mitsubishi (MC TCP/IP)</b> via Ethernet IP network to max. 4 x controllers <sup>2)</sup> • FX series FX3G, FX3U, FX3UC with Ethernet module FX3U ENET, • Series Q with Ethernet module QJ71E71-100 • iQ series/QnUD QnUDEH	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
<b>Mitsubishi FX (serial)</b> to max. 1 x controller FX series FX1N, FX2N (RS 232)	• <sup>4)</sup>	•	• <sup>4)</sup>	•	–	• <sup>5)</sup>

- System interface possible

- System interface not possible

<sup>1)</sup> Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

<sup>2)</sup> The following listed controllers can be combined as required

<sup>3)</sup> Basic Panel PN and Mobile Panel 177 PN only

<sup>4)</sup> Basic Panel DP and Mobile Panel 177 DP only

<sup>5)</sup> Connection using a Mitsubishi PC cable SC-09 with integrated level converter RS 232/RS 422

##### Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also

<http://support.automation.siemens.com/WW/view/en/29034071>.

Controller	SIMATIC HMI					
	Basic Panel	Comfort Panel Outdoor	Mobile Panel 177 DP <sup>1)</sup> Mobile Panel 177 PN <sup>1)</sup>	Mobile Panel 277 <sup>1)</sup>	KTPx00(F) Mobile	WinCC Runtime Advanced
<b>Modicon (MODBUS TCP/IP)</b> via MODBUS TCP/IP network to max. 4 x controllers <sup>2)</sup> • Concept Quantum, Unity Quantum • Momentum • Premium (TSX57) • TSX Micro (TSX37) • Modicon M340 20x0 (except 2010)	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
via TCP/IP Modbus Plus Bridge 174 CEV 200 40 and MODBUS PLUS network to max. 4 x controllers <sup>2)</sup> • Concept Quantum, Unity Quantum • Momentum • Compact	• <sup>3)</sup>	•	• <sup>3)</sup>	•	•	•
<b>Modicon (MODBUS RTU)</b> to max. 1 x controller • Concept Quantum • Momentum • Compact (RS 232)	• <sup>4)</sup> <sup>5)</sup>	• <sup>4)</sup>	• <sup>4)</sup> <sup>5)</sup>	• <sup>4)</sup>	–	•
via bridge BM85-000 or PLC with bridge functionality and MODBUS PLUS network to max. 4 x controllers <sup>2)</sup> • Concept Quantum • Compact (RS 232)	• <sup>4)</sup> <sup>5)</sup>	• <sup>4)</sup>	• <sup>4)</sup> <sup>5)</sup>	• <sup>4)</sup>	–	•

- System interface possible

- System interface not possible

<sup>1)</sup> Mobile Panel connection via special connecting cable and connection box (see Mobile Panels), see Manual for cable assignment

<sup>2)</sup> The following listed controllers can be combined as required

<sup>3)</sup> Basic Panel PN and Mobile Panel 177 PN only

<sup>4)</sup> The RS 422/RS 232 adapter 6AV6671-8XE00-0AX0 is required for Basic Panels and Mobile Panels

<sup>5)</sup> Basic Panel DP and Mobile Panel 177 DP only

##### Note:

For detailed information on cable assignment, refer to WinCC Online Help; see also

<http://support.automation.siemens.com/WW/view/en/29034071>.

## Operator panels

### System interfaces with WinCC (TIA Portal)

#### Controllers from other manufacturers

##### Overview

Controller Target hardware (PROTOCOL) (physics)	SIMATIC HMI					
	Basic Panel	Comfort Panel Outdoor	Mobile Panel 177 DP <sup>1)</sup> Mobile Panel 177 PN <sup>1)</sup>	Mobile Panel 277 <sup>1)</sup>	KTPx00(F) Mobile	WinCC Runtime Advanced
<b>Omron (Link/Multi Link)</b>						
to max. 1 x controller • CP1L, CP1H, CP1E • CJ1M, CJ1H, CJ1G • CJ2H • CS1G, CS1H, CS1D • CP2MC (RS 232)	–	• <sup>3)</sup>	• <sup>3) 4)</sup>	• <sup>3)</sup>	–	•
via converter NT-AL001 and RS 422 network to max. 4 x controllers <sup>2)</sup> • CP1L, CP1H, CP1E • CJ1M, CJ1H, CJ1G • CJ2H • CS1G, CS1H, CS1D • CP2MC (RS 232)	–	• <sup>3)</sup>	• <sup>3) 4)</sup>	• <sup>3)</sup>	–	•
via RS 422 network to max. 4 x controllers <sup>2)</sup> • CP1L, CP1H, CP1E • CJ1M, CJ1H, CJ1G (RS 422)	• <sup>4)</sup>	•	• <sup>4)</sup>	• <sup>4)</sup>	–	–
via RS422 network to max. 4 x controllers <sup>2)</sup> • CJ2H • CS1G, CS1H, CS1D • CP2MC (RS 422)	–	–	• <sup>4)</sup>	• <sup>4)</sup>	–	–

• System interface possible

– System interface not possible

<sup>1)</sup> Mobile Panel connection via special connecting cable and connection box  
(see Mobile Panels), see Manual for cable assignment

<sup>2)</sup> The controllers listed below can be combined in any way required;  
connection via RS 422 interface of the controller or via RS 422 module

<sup>3)</sup> The RS 422/RS 232 adapter 6AV6671-8XE00-0AX0 is required for  
Basic Panels and Mobile Panels

<sup>4)</sup> Basic Panel DP and Mobile Panel 177 DP only

##### Note:

For detailed information on cable assignment,  
refer to WinCC Online Help; see also

<http://support.automation.siemens.com/WW/view/en/29034071>.