

Industrial Computing

Devices for special requirements

Introduction

Overview

Fully-enclosed IP65-protected devices

SIMATIC IPC in fully-enclosed IP65 degree of protection housing (SIMATIC IPC monitors and Panel PC) are specially designed for support arm/pedestal mounting. Thanks to their extremely rugged design, the devices are ideal for industrial applications in harsh environments. A wide variety of system components are available for this purpose, such as fixing elements, expansion modules and operator controls.

Devices with stainless steel fronts

SIMATIC IPC devices with stainless steel fronts (INOX) are designed for use in the food and beverages, pharmaceutical and fine chemicals industries and other hygienic applications for machine-level operator control and monitoring.

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PROtected devices and system components

Overview



Fully-enclosed IP65-protected devices

Fully-enclosed SIMATIC IP65-protected devices are specifically designed to be mounted to a support arm/pedestal. Thanks to their extremely rugged design, the devices are ideal for industrial applications in harsh environments.

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PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Overview



SIMATIC IFP2400 V2 PRO, standard design, front view



SIMATIC IFP PRO and SIMATIC IFP PRO ETH:
The new Industrial Flat Panels with fully-enclosed IP65 protection – the industrial widescreen monitors for harsh ambient conditions that can be installed directly on the machine

SIMATIC IFP1200 PRO

The SIMATIC IFP1200 PRO supplements the current product range of the new Industrial Flat Panels. Equipped with innovative, projected capacitive touchscreen technology for the detection of multi-touch gestures with up to ten fingers and with a brilliant widescreen display and glass front.

The devices are connected to PCs, especially SIMATIC IPCs, via the DisplayPort interface or, over greater distances, via HDBaseT and USB.

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

- IP65 degree of protection – fully-enclosed
- Can be located up to 100 m from the computer unit (IFP Extended version)
- Rugged, industrial 12", 15", 19", 22" and 24" widescreen displays (multi-touch)
- Slim, modern design
- Can be adapted to support arm system of various manufacturers
- Fast integration capability
- Low energy requirement
- Small footprint and low weight
- Low wiring overhead and short maintenance times thanks to use of standard connecting cables
- Integration of operator controls in the new Extension Units
- Also available in neutral design

SIMATIC IFP PRO ETH

IFP1500 PRO ETH, IFP1900 PRO ETH and IFP2200 PRO ETH supplement the current product range of new Industrial Flat Panels with their full HD resolution (1 920 x 1 080 pixels) and neutral design fronts. Equipped with innovative, projected capacitive touchscreen technology for the detection of multi-touch gestures with up to ten fingers and with a brilliant widescreen display and glass front. The devices are connected by means of a DisplayPort or Ethernet and USB to PCs, in particular SIMATIC IPCs. The rugged aluminum housing of the monitor enables it to be used directly at the machine and ensures durability, even in harsh and extreme operating environments.

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PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Ordering data	Article No.	Article No.	
<p>SIMATIC IFP1200 V2 PRO 12" (16:10) Flat Panel, multi-touch, extended version up to 100 m via HDBaseT, 1 280 x 800 pixels, for 24 V DC DisplayPort fully-enclosed IP65 protection</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components <p><u>Neutral design:</u></p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components 	<p>6AV7863-1MA14-2AA0</p> <p>6AV7863-1MA15-2AA0</p> <p>6AV7863-1MA16-2AA0</p> <p>6AV7863-1MA14-2NA0</p> <p>6AV7863-1MA15-2NA0</p> <p>6AV7863-1MA16-2NA0</p>	<p>SIMATIC IFP2200 V2 PRO 22" (16:9) Flat Panel, multi-touch, extended version up to 100 m via HDBaseT, 1 920 x 1 080 pixels, for 24 V DC DisplayPort, fully-enclosed IP65 protection</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components <p><u>Neutral design:</u></p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components 	<p>6AV7863-4MA14-2AA0</p> <p>6AV7863-4MA15-2AA0</p> <p>6AV7863-4MA16-2AA0</p> <p>6AV7863-4MA14-2NA0</p> <p>6AV7863-4MA15-2NA0</p> <p>6AV7863-4MA16-2NA0</p>
<p>SIMATIC IFP1500 V2 PRO 15" (16:9) Flat Panel, multi-touch, extended version up to 100 m via HDBaseT, 1 920 x 1 080 pixels, for 24 V DC DisplayPort fully-enclosed IP65 protection</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components <p><u>Neutral design:</u></p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components 	<p>6AV7863-5MA14-2AA0</p> <p>6AV7863-5MA15-2AA0</p> <p>6AV7863-5MA16-2AA0</p> <p>6AV7863-5MA14-2NA0</p> <p>6AV7863-5MA15-2NA0</p> <p>6AV7863-5MA16-2NA0</p>	<p>SIMATIC IFP2400 V2 PRO 24" (16:9) Flat Panel, multi-touch, extended version up to 100 m via HDBaseT, 1 920 x 1 080 pixels, for 24 V DC DisplayPort, fully-enclosed IP65 protection</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components • Portrait Prepared for support arm and extension components <p><u>Neutral design:</u></p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components • Portrait Prepared for support arm and extension components 	<p>6AV7863-7MA14-2AA0</p> <p>6AV7863-7MA15-2AA0</p> <p>6AV7863-7MA16-2AA0</p> <p>6AV7863-7MA17-2AA0</p> <p>6AV7863-7MA14-2NA0</p> <p>6AV7863-7MA15-2NA0</p> <p>6AV7863-7MA16-2NA0</p> <p>6AV7863-7MA17-2NA0</p>
<p>SIMATIC IFP1900 V2 PRO 19" (16:9) Flat Panel, multi-touch, extended version up to 100 m via HDBaseT, 1 920 x 1 080 pixels, for 24 V DC DisplayPort, fully-enclosed IP65 protection</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components <p><u>Neutral design:</u></p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm without extension components • Prepared for support arm and extension components 	<p>6AV7863-6MA14-2AA0</p> <p>6AV7863-6MA15-2AA0</p> <p>6AV7863-6MA16-2AA0</p> <p>6AV7863-6MA14-2NA0</p> <p>6AV7863-6MA15-2NA0</p> <p>6AV7863-6MA16-2NA0</p>		

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PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Ordering data	Article No.	Article No.	
<p>SIMATIC IFP1500 PRO HD ETH 15" (16:9) Flat Panel, multi-touch, Ethernet up to 100 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/Ethernet interface, fully-enclosed IP65 protection, neutral design</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm and extension components 	<p>6AV7466-5MA01-0AA0</p> <p>6AV7466-5MA02-0AA0</p>	<p>SIMATIC IFP2200 PRO HD ETH 22" (16:9) Flat Panel, multi-touch, Ethernet up to 100 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/Ethernet interface, fully-enclosed IP65 protection, neutral design</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm and extension components 	<p>6AV7466-8MA01-0AA0</p> <p>6AV7466-8MA02-0AA0</p>
<p>SIMATIC IFP1900 PRO HD ETH 19" (16:9) Flat Panel, multi-touch, Ethernet up to 100 m, 1 920 x 1 080 pixels, for 24 V DC DisplayPort/Ethernet interface, fully-enclosed IP65 protection, neutral design</p> <ul style="list-style-type: none"> • Prepared for pedestal and extension components • Prepared for support arm and extension components 	<p>6AV7466-6MA01-0AA0</p> <p>6AV7466-6MA02-0AA0</p>		

Note:

As in the case of the Flat Panel PRO, adaptation to support arm/pedestal systems is possible using the basic adapter. This is included in the scope of supply (only in the case of the "prepared for support arm and extension components" version is the basic adapter not included, as the connection is made via a round tube).

For the version "prepared for support arm and extension components", 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.

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Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-1MA14-2AA0	6AV7863-1MA16-2AA0	6AV7863-1MA15-2AA0	6AV7863-1MA14-2NA0	6AV7863-1MA15-2NA0	6AV7863-1MA16-2NA0
	SIMATIC Flat Panel 12" MT V2 PRO	SIMATIC Flat Panel 12" MT V2 PRO	SIMATIC Flat Panel 12" MT V2 PRO	SIMATIC Flat Panel 12" MT V2 PRO	SIMATIC Flat Panel 12" MT V2 PRO	SIMATIC Flat Panel 12" MT V2 PRO
General information						
Product type designation	IFP1200 V2 PRO	IFP1200 V2 PRO	IFP1200 V2 PRO	IFP1200 V2 PRO	IFP1200 V2 PRO	IFP1200 V2 PRO
Short designation	Flat Panel 12" multi-touch ext.	Flat Panel 12" multi-touch ext.	Flat Panel 12" multi-touch ext.	Flat Panel 12" multi-touch ext.	Flat Panel 12" multi-touch ext.	Flat Panel 12" multi-touch ext.
Display						
Design of display	TFT widescreen display, LED backlighting					
Screen diagonal	12.1 in	12.1 in	12.1 in	12.1 in	12.1 in	12.1 in
Screen diagonal [cm]	30.7 cm	30.7 cm	30.7 cm	30.7 cm	30.7 cm	30.7 cm
On Screen Display (OSD) configuration	No	No	No	No	No	No
Number of colors	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit
Viewing angle	176° x 176°	176° x 176°	176° x 176°	176° x 176°	176° x 176°	176° x 176°
Resolution (pixels)						
• Image resolution	1 280 x 800	1 280 x 800	1 280 x 800	1 280 x 800	1 280 x 800	1 280 x 800
General features						
• Brightness/contrast	400 cd/m ² / 800:1	400 cd/m ² / 800:1	400 cd/m ² / 800:1	400 cd/m ² / 800:1	400 cd/m ² / 800:1	400 cd/m ² / 800:1
• Detachable from computer unit	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol
Backlighting						
• Type of backlighting	LED	LED	LED	LED	LED	LED
• MTBF backlighting (at 25 °C)	70 000 h; At 25°C	70 000 h; At 25°C	70 000 h; At 25°C	70 000 h; At 25°C	70 000 h; At 25°C	70 000 h; At 25°C
Control elements						
Input device						
• Integrated mouse cursor control	Yes; Also externally via USB					
Touch operation						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
• Monitor keyboard	Yes	Yes	Yes	Yes	Yes	Yes
Installation type/mounting						
Design	Pedestal mounting	Support arm mounting	Support arm mounting	Pedestal mounting	Support arm mounting	Support arm mounting
Supply voltage						
Rated value (DC)	24 V; PELV / SELV floating					
Input current						
Current consumption (rated value)	0.65 A	0.65 A	0.65 A	0.65 A	0.65 A	0.65 A
Current consumption, max.	1 A	1 A	1 A	1 A	1 A	1 A
Interfaces						
Number of USB interfaces	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A
USB on the rear	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard
Connection for keyboard/mouse	USB	USB	USB	USB	USB	USB
Video interfaces						
• DisplayPort	Yes; Display port V1.2					
Touch interfaces						
• USB	Yes	Yes	Yes	Yes	Yes	Yes
Degree and class of protection						
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

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SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-1MA14-2AA0	6AV7863-1MA16-2AA0	6AV7863-1MA15-2AA0	6AV7863-1MA14-2NA0	6AV7863-1MA15-2NA0	6AV7863-1MA16-2NA0
	SIMATIC Flat Panel 12" MT V2 PRO					
Standards, approvals, certificates						
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	Yes; cULus, cUL					
cULus	Yes; Corresponds to UL 508					
FM approval	Yes; in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes	Yes	Yes	Yes	Yes	Yes
EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2					
Use in hazardous areas						
• 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
• FM Class I Division 2	No	No	No	No	No	No
Ambient conditions						
Ambient temperature during operation						
• min.	0 °C					
• max.	45 °C					
Altitude during operation relating to sea level						
• Installation altitude above sea level, max.	3 500 m					
Relative humidity						
• Operation, max.	95 %; no condensation					
Vibrations						
• Vibration load in operation	1 gn					
• Vibration load during transport/storage	1 gn					
Shock testing						
• Shock load during operation	15 gn					
• shock acceleration during storage/transport	15 gn					
Mechanics/material						
Enclosure material (front)	In standard design	In standard design	In standard design	With neutral design	With neutral design	With neutral design
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
• Aluminum casting	Yes	Yes	Yes	Yes	Yes	Yes
• Glass	Yes; at front					
Enclosure material (rear)	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
Dimensions						
Width of the housing front	313 mm					
Height of housing front	225 mm					
Weights						
Weight (without packaging)	4 kg	4.4 kg	4 kg	4 kg	4 kg	4.4 kg

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SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-6MA14-2AA0	6AV7863-6MA15-2AA0	6AV7863-6MA16-2AA0	6AV7863-6MA14-2NA0	6AV7863-6MA15-2NA0	6AV7863-6MA16-2NA0
	SIMATIC Flat Panel 19 MT V2 PRO	SIMATIC Flat Panel 19 MT V2 PRO	SIMATIC Flat Panel 19 MT V2 PRO	SIMATIC Flat Panel 19 MT V2 PRO	SIMATIC Flat Panel 19 MT V2 PRO	SIMATIC Flat Panel 19 MT V2 PRO
General information						
Product type designation	IFP1900 V2 PRO	IFP1900 V2 PRO	IFP1900 V2 PRO	IFP1900 V2 PRO	IFP1900 V2 PRO	IFP1900 V2 PRO
Short designation	Flat Panel 19" PRO multi-touch ext.	Flat Panel 19" PRO multi-touch ext.	Flat Panel 19" PRO multi-touch ext.	Flat Panel 19" PRO multi-touch ext.	Flat Panel 19" PRO multi-touch ext.	Flat Panel 19" PRO multi-touch ext.
Display						
Design of display	TFT widescreen display, LED backlighting					
Screen diagonal	18.5 in; 19"	18.5 in; 19"	18.5 in; 19"	18.5 in; 19"	18.5 in; 19"	18.5 in; 19"
Screen diagonal [cm]	47 cm	47 cm	47 cm	47 cm	47 cm	47 cm
On Screen Display (OSD) configuration	No; Adjustable by means of software					
Number of colors	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit
Viewing angle	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°
Resolution (pixels)						
• Image resolution	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080
General features						
• Brightness/contrast	350 cd/m ² / 1 000:1	350 cd/m ² / 1 000:1	350 cd/m ² / 1 000:1	350 cd/m ² / 1 000:1	350 cd/m ² / 1 000:1	350 cd/m ² / 1 000:1
• Non-reflective and tempered mineral glass screen	Yes	Yes	Yes	Yes	Yes	Yes
• Detachable from computer unit	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol
Backlighting						
• Type of backlighting	LED	LED	LED	LED	LED	LED
• 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; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C
Control elements						
Control elements	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen
Input device						
• Integrated mouse cursor control	Yes; Also externally via USB					
Touch operation						
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
• Design as multi-touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
• Monitor keyboard	Yes	Yes	Yes	Yes	Yes	Yes
Installation type/mounting						
Design	Pedestal mounting	Support arm mounting	Support arm mounting	Pedestal mounting	Support arm mounting	Support arm mounting
Supply voltage						
Rated value (DC)	24 V; PELV / SELV floating					
Input current						
Current consumption (rated value)	1.2 A	1.2 A	1.2 A	1.2 A	1.2 A	1.2 A
Current consumption, max.	1.5 A	1.5 A	1.5 A	1.5 A	1.5 A	1.5 A
Interfaces						
Number of USB interfaces	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A
USB on the rear	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard
Connection for keyboard/mouse	USB	USB	USB	USB	USB	USB
Video interfaces						
• DisplayPort	Yes; Display port V1.2					
Touch interfaces						
• USB	Yes	Yes	Yes	Yes	Yes	Yes
Degree and class of protection						
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

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PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-6MA14-2AA0	6AV7863-6MA15-2AA0	6AV7863-6MA16-2AA0	6AV7863-6MA14-2NA0	6AV7863-6MA15-2NA0	6AV7863-6MA16-2NA0
	SIMATIC Flat Panel 19 MT V2 PRO					
Standards, approvals, certificates						
Certificate of suitability	hazardous zone 2/22; shipbuilding					
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes; Corresponds to UL 508					
FM approval	in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes	Yes	Yes	Yes	Yes	Yes
EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2					
Use in hazardous areas						
• 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
• FM Class I Division 2	No	No	No	No	No	No
Ambient conditions						
Ambient temperature during operation						
• min.	0 °C					
• max.	45 °C					
Relative humidity						
• Operation, max.	95 %; no condensation					
Vibrations						
• Vibration load in operation	1 gn					
• Vibration load during transport/storage	1 gn					
Shock testing						
• Shock load during operation	15 gn					
• shock acceleration during storage/transport	15 gn					
Mechanics/material						
Enclosure material (front)	In standard design	In standard design	In standard design	With neutral design	With neutral design	With neutral design
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
• Aluminum casting	Yes	Yes	Yes	Yes	Yes	Yes
• Glass	Yes; at front					
Enclosure material (rear)	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
Dimensions						
Width of the housing front	462 mm					
Height of housing front	292 mm					
Weights						
Weight (without packaging)	6.3 kg	6.3 kg	6.9 kg	6.3 kg	6.3 kg	6.9 kg

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SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-4MA14-2AA0	6AV7863-4MA15-2AA0	6AV7863-4MA16-2AA0	6AV7863-4MA14-2NA0	6AV7863-4MA15-2NA0	6AV7863-4MA16-2NA0
	SIMATIC Flat Panel 22 MT V2 PRO	SIMATIC Flat Panel 22 MT V2 PRO	SIMATIC Flat Panel 22 MT V2 PRO	SIMATIC Flat Panel 22 MT V2 PRO	SIMATIC Flat Panel 22 MT V2 PRO	SIMATIC Flat Panel 22 MT V2 PRO
General information						
Product type designation	IFP2200 PRO	IFP2200 V2 PRO	IFP2200 V2 PRO	IFP2200 PRO	IFP2200 V2 PRO	IFP2200 V2 PRO
Short designation	Flat Panel 22" PRO multi-touch ext.	Flat Panel 22" PRO multi-touch ext.	Flat Panel 22" PRO multi-touch ext.	Flat Panel 22" PRO multi-touch ext.	Flat Panel 22" PRO multi-touch ext.	Flat Panel 22" PRO multi-touch ext.
Display						
Design of display	TFT widescreen display, LED backlighting					
Screen diagonal	21.5 in; 22"	21.5 in; 22"	21.5 in; 22"	21.5 in; 22"	21.5 in; 22"	21.5 in; 22"
Screen diagonal [cm]	54.6 cm	54.6 cm	54.6 cm	54.6 cm	54.6 cm	54.6 cm
On Screen Display (OSD) configuration	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software
Number of colors	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit
Viewing angle	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°
Resolution (pixels)						
• Image resolution	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080
General features						
• Brightness/contrast	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1
• non-reflective and tempered mineral glass screen	Yes	Yes	Yes	Yes	Yes	Yes
• Detachable from computer unit	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol
Backlighting						
• Type of backlighting	LED	LED	LED	LED	LED	LED
• 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
Control elements						
Control elements	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen
Input device						
• Integrated mouse cursor control	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB
Touch operation						
• Design as touch screen	Yes	Yes	Yes	Yes	Yes	Yes
• Design as multi-touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
• Monitor keyboard	Yes	Yes	Yes	Yes	Yes	Yes
Installation type/mounting						
Design	Pedestal mounting	Support arm mounting	Support arm mounting	Pedestal mounting	Support arm mounting	Support arm mounting
Supply voltage						
Rated value (DC)	24 V; PELV / SELV floating					
Input current						
Current consumption (rated value)	1 A	1 A	1 A	1 A	1 A	1 A
Current consumption, max.	1.3 A	1.3 A	1.3 A	1.3 A	1.3 A	1.3 A
Interfaces						
Number of USB interfaces	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A
USB on the rear	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard
Connection for keyboard/mouse	USB	USB	USB	USB	USB	USB
Video interfaces						
• DisplayPort	Yes; Display port V1.2					
Touch interfaces						
• USB	Yes	Yes	Yes	Yes	Yes	Yes
Degree and class of protection						
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

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-4MA14-2AA0	6AV7863-4MA15-2AA0	6AV7863-4MA16-2AA0	6AV7863-4MA14-2NA0	6AV7863-4MA15-2NA0	6AV7863-4MA16-2NA0
	SIMATIC Flat Panel 22 MT V2 PRO					
Standards, approvals, certificates						
Certificate of suitability	hazardous zone 2/22; shipbuilding		hazardous zone 2/22; shipbuilding		hazardous zone 2/22; shipbuilding	
CE mark	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes; Corresponds to UL 508					
FM approval	in preparation					
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes	Yes	Yes	Yes	Yes	Yes
EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2					
Use in hazardous areas						
• 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
• FM Class I Division 2	No	No	No	No	No	No
Ambient conditions						
Ambient temperature during operation						
• min.	0 °C					
• max.	45 °C					
Altitude during operation relating to sea level						
• Installation altitude above sea level, max.	3 500 m					
Relative humidity						
• Operation, max.	95 %; no condensation					
Vibrations						
• Vibration load in operation	1 gn					
• Vibration load during transport/storage	1 gn					
Shock testing						
• Shock load during operation	15 gn					
• shock acceleration during storage/transport	15 gn					
Mechanics/material						
Enclosure material (front)	In standard design	In standard design	In standard design	With neutral design	With neutral design	With neutral design
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
• Aluminum casting	Yes	Yes	Yes	Yes	Yes	Yes
• Glass	Yes; at front					
Enclosure material (rear)	aluminum	aluminum	aluminum	aluminum	aluminum	aluminum
Dimensions						
Width of the housing front	527 mm					
Height of housing front	329 mm					
Weights						
Weight (without packaging)	7.6 kg	7.6 kg	8.2 kg	7.6 kg	7.6 kg	8.2 kg

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-7MA14-2AA0	6AV7863-7MA15-2AA0	6AV7863-7MA16-2AA0	6AV7863-7MA17-2AA0	6AV7863-7MA14-2NA0	6AV7863-7MA15-2NA0	6AV7863-7MA16-2NA0	6AV7863-7MA17-2NA0
	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO	SIMATIC Flat Panel 24 MT V2 PRO
General information								
Product type designation	IFP2400 V2 PRO	IFP2400 V2 PRO	IFP2400 V2 PRO	IFP2400 V2 PRO	IFP2400 V2 PRO	IFP2400 V2 PRO	IFP2400 V2 PRO	IFP2400 V2 PRO
Short designation	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.	Flat Panel 24* PRO multi-touch ext.
Display								
Design of display	TFT widescreen display, LED backlighting							
Screen diagonal	23.8 in	23.8 in	23.8 in	23.8 in	23.8 in	23.8 in	23.8 in	23.8 in
Screen diagonal [cm]	60.47 cm	60.47 cm	60.47 cm	60.47 cm	60.47 cm	60.47 cm	60.47 cm	60.47 cm
On Screen Display (OSD) configuration	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software	No; Adjustable by means of software
Number of colors	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit	16 777 216; 24 bit
Viewing angle	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°	178° x 178°
Resolution (pixels)								
• Image resolution	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 080 x 1 920	1 920 x 1 080	1 920 x 1 080	1 920 x 1 080	1 080 x 1 920
General features								
• Brightness/contrast	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1	250 cd/m ² / 1 000:1
• Detachable from computer unit	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol	100 m; HDBaseT protocol
Backlighting								
• Type of backlighting	LED	LED	LED	LED	LED	LED	LED	LED
• 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; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C
Control elements								
Control elements	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen	multi-touch screen
Input device								
• Integrated mouse cursor control	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB	Yes; Also externally via USB
Touch operation								
• Design as touch screen	Yes; Projective-capacitive							
• Design as multi-touch screen	Yes; Projective-capacitive							
• Monitor keyboard	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Installation type/mounting								
Design	Pedestal mounting	Support arm mounting	Support arm mounting	Support arm mounting	Pedestal mounting	Support arm mounting	Support arm mounting	Support arm mounting
Supply voltage								
Rated value (DC)	24 V; PELV / SELV floating							
Input current								
Current consumption (rated value)	1.5 A	1.5 A	1.5 A	1.5 A	1.5 A	1.5 A	1.5 A	1.5 A
Current consumption, max.	1.9 A	1.9 A	1.9 A	1.9 A	1.9 A	1.9 A	1.9 A	1.9 A
Interfaces								
Number of USB interfaces	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A	2; USB 2.0 type A
USB on the rear	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard
Connection for keyboard/mouse	USB	USB	USB	USB	USB	USB	USB	USB
Video interfaces								
• DisplayPort	Yes; Display port V1.2							
Touch interfaces								
• USB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Flat Panel PRO

Technical specifications

Article number	6AV7863-7MA14-2AA0	6AV7863-7MA15-2AA0	6AV7863-7MA16-2AA0	6AV7863-7MA17-2AA0	6AV7863-7MA14-2NA0	6AV7863-7MA15-2NA0	6AV7863-7MA16-2NA0	6AV7863-7MA17-2NA0
	SIMATIC Flat Panel 24 MT V2 PRO							
Degree and class of protection								
IP (at the front)	IP65							
IP (rear)	IP65							
NEMA (front)								
• Enclosure Type 4x at the front	Yes							
Standards, approvals, certificates								
Certificate of suitability	hazardous zone 2/22; shipbuilding							
CE mark	Yes							
UL approval	Yes; cULus, cUL							
cULus	Yes							
FM approval	in preparation							
RCM (formerly C-TICK)	Yes							
EAC (formerly Gost-R)	Yes							
EMC	CE, EN 55011, EN 61000-6-4, EN 61000-6-2							
Marine approval	in preparation							
Use in hazardous areas								
• ATEX Zone 2	Yes							
• ATEX Zone 22	Yes							
• IECEx Zone 2	Yes							
• IECEx Zone 22	Yes							
• FM Class I Division 2	No							
Ambient conditions								
Ambient temperature during operation								
• min.	0 °C							
• max.	45 °C							
Altitude during operation relating to sea level								
• Installation altitude above sea level, max.	3 500 m							
Relative humidity								
• Operation, max.	95 %; no condensation							
Vibrations								
• Vibration load in operation	1 gn							
• Vibration load during transport/storage	1 gn							
Shock testing								
• Shock load during operation	15 gn							
• shock acceleration during storage/transport	15 gn							
Mechanics/material								
Enclosure material (front)	In standard design	In standard design	In standard design	In standard design	With neutral design	With neutral design	With neutral design	With neutral design
• Aluminum	Yes							
• Aluminum casting	Yes							
• Glass	Yes; at front aluminum							
Enclosure material (rear)	aluminum							
Dimensions								
Width of the housing front	583 mm	583 mm	583 mm	361 mm	583 mm	583 mm	583 mm	361 mm
Height of housing front	361 mm	361 mm	361 mm	583 mm	361 mm	361 mm	361 mm	583 mm
Weights								
Weight (without packaging)	9.2 kg	9.2 kg	9.9 kg	9.2 kg	9.2 kg	9.2 kg	9.9 kg	9.2 kg

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.

Industrial Computing

Devices for special requirements
PROtected devices and system components

SIMATIC Industrial Thin Client PRO

Overview



SIMATIC Industrial Thin Client PRO

SIMATIC Industrial Thin Client PRO with capacitive multi-touch display is suitable for mounting directly on the support arm/pedestal.

Ordering data

Article No.

SIMATIC Industrial Thin Client PRO

SIMATIC ITC1200 V3 PRO

Industrial Thin Client
12" widescreen TFT display
Capacitive touch sensor
Supported protocols: RDP, VNC,
SMARTSERVER HTML5, etc.

Standard design

- Pedestal mounting
- Prepared for support arm without extension components
- Prepared for support arm with extension components

6AV6646-1BB12-0AA1
6AV6646-1BC12-0AA1

6AV6646-1BD12-0AA1

Neutral design

- Pedestal mounting
- Prepared for support arm without extension components
- Prepared for support arm with extension components

6AV6646-1BB12-0NA1
6AV6646-1BC12-0NA1

6AV6646-1BD12-0NA1

SIMATIC ITC1500 V3 PRO

Industrial Thin Client
15" widescreen TFT display
Capacitive touch sensor
Supported protocols: RDP, VNC,
SMARTSERVER HTML5, etc.
Standard design

- Pedestal mounting
- Prepared for support arm without extension components
- Prepared for support arm with extension components

6AV6646-1BB15-0AA0
6AV6646-1BC15-0AA0

6AV6646-1BD15-0AA0

Neutral design

- Pedestal mounting
- Prepared for support arm without extension components
- Prepared for support arm with extension components

6AV6646-1BB15-0NA0
6AV6646-1BC15-0NA0

6AV6646-1BD15-0NA0

SIMATIC ITC1500 V3 PRO

Industrial Thin Client
15" widescreen TFT display, Full HD
Capacitive touch sensor
Supported protocols: RDP, VNC,
SMARTSERVER HTML5, etc.

Standard design

- Pedestal mounting
- Prepared for support arm without extension components
- Prepared for support arm with extension components

6AV6646-1BB16-0AA1
6AV6646-1BC16-0AA1

6AV6646-1BD16-0AA1

Neutral design

- Pedestal mounting
- Prepared for support arm without extension components
- Prepared for support arm with extension components

6AV6646-1BB16-0NA1
6AV6646-1BC16-0NA1

6AV6646-1BD16-0NA1

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Thin Client PRO

Ordering data	Article No.	Article No.
<p>SIMATIC ITC1900 V3 PRO</p> <p>Industrial Thin Client 19" widescreen TFT display Capacitive touch sensor Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc.</p> <p><u>Standard design</u></p> <ul style="list-style-type: none"> • Pedestal mounting • Prepared for support arm without extension components • Prepared for support arm with extension components <p><u>Neutral design</u></p> <ul style="list-style-type: none"> • Pedestal mounting • Prepared for support arm without extension components • Prepared for support arm with extension components 	<p>6AV6646-1BB18-0AA1</p> <p>6AV6646-1BC18-0AA1</p> <p>6AV6646-1BD18-0AA1</p> <p>6AV6646-1BB18-0NA1</p> <p>6AV6646-1BC18-0NA1</p> <p>6AV6646-1BD18-0NA1</p>	<p>SIMATIC ITC2200 V3 PRO</p> <p>Industrial Thin Client 22" widescreen TFT display Capacitive touch sensor Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc. Standard design</p> <p><u>Standard design</u></p> <ul style="list-style-type: none"> • Pedestal mounting • Prepared for support arm without extension components • Prepared for support arm with extension components <p><u>Neutral design</u></p> <p>Pedestal mounting</p> <p>Prepared for support arm without extension components</p> <p>Prepared for support arm with extension components</p> <p>6AV6646-1BB22-1AA1</p> <p>6AV6646-1BC22-1AA1</p> <p>6AV6646-1BD22-1AA1</p> <p>6AV6646-1BB22-1NA1</p> <p>6AV6646-1BC22-1NA1</p> <p>6AV6646-1BD22-1NA1</p>
<p>SIMATIC ITC1900 V3 PRO</p> <p>Industrial Thin Client 19" widescreen TFT display, Full HD Capacitive touch sensor Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc.</p> <p><u>Standard design</u></p> <ul style="list-style-type: none"> • Pedestal mounting • Prepared for support arm without extension components • Prepared for support arm with extension components <p><u>Neutral design</u></p> <ul style="list-style-type: none"> • Pedestal mounting • Prepared for support arm without extension components • Prepared for support arm with extension components 	<p>6AV6646-1BB20-0AA1</p> <p>6AV6646-1BC20-0AA1</p> <p>6AV6646-1BD20-0AA1</p> <p>6AV6646-1BB20-0NA1</p> <p>6AV6646-1BC20-0NA1</p> <p>6AV6646-1BD20-0NA1</p>	<p>SIMATIC ITC2400 V3 PRO</p> <p>Industrial Thin Client 24" widescreen TFT display Capacitive touch sensor Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc.</p> <p><u>Standard design</u></p> <p>Pedestal mounting</p> <p>Prepared for support arm without extension components</p> <p>Prepared for support arm with extension components</p> <p><u>Neutral design</u></p> <p>Pedestal mounting</p> <p>Prepared for support arm without extension components</p> <p>Prepared for support arm with extension components</p> <p>6AV6646-1BB24-0AA1</p> <p>6AV6646-1BC24-0AA1</p> <p>6AV6646-1BD24-0AA1</p> <p>6AV6646-1BB24-0NA1</p> <p>6AV6646-1BC24-0NA1</p> <p>6AV6646-1BD24-0NA1</p>
<p>SIMATIC ITC1900 V3 PRO</p> <p>Industrial Thin Client 19" widescreen TFT display Capacitive touch sensor Supported protocols: RDP, VNC, SMARTSERVER HTML5, etc. Standard design</p> <p><u>Standard design</u></p> <ul style="list-style-type: none"> • Pedestal mounting • Prepared for support arm without extension components • Prepared for support arm with extension components 	<p>6AV6646-1BB18-0AA0</p> <p>6AV6646-1BC18-0AA0</p> <p>6AV6646-1BD18-0AA0</p>	

Note:

An adapter plate is required for mounting on the support arm systems of well-known manufacturers; see "Accessories for fully-enclosed HMI devices".

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Thin Client PRO

Technical specifications

Article number	6AV6646-1BB15-0AA0 SIMATIC ITC1500 V3 PRO	6AV6646-1BC15-0AA0 SIMATIC ITC1500 V3 PRO	6AV6646-1BD15-0AA0 SIMATIC ITC1500 V3 PRO
General information			
Product type designation	ITC1500 V3 PRO	ITC1500 V3 PRO	ITC1500 V3 PRO
Display			
Design of display	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting	TFT widescreen display, LED backlighting
Screen diagonal	15.6 in; 15"	15.6 in; 15"	15.6 in; 15"
Number of colors	16 777 216	16 777 216	16 777 216
Resolution (pixels)			
• Image resolution	1 366 x 768	1 366 x 768	1 366 x 768
General features			
• non-reflective and tempered mineral glass screen	Yes	Yes	Yes
• Detachable from computer unit	100 m	100 m	100 m
Backlighting			
• Type of backlighting	LED, dimmable	LED, dimmable	LED, dimmable
• MTBF backlighting (at 25 °C)	50 000 h; At 25°C	50 000 h; At 25°C	50 000 h; At 25°C
Control elements			
Control elements	multi-touch screen	multi-touch screen	multi-touch screen
Touch operation			
• Design as touch screen	Yes	Yes	Yes
• Design as multi-touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
• Monitor keyboard	Yes	Yes	Yes
Installation type/mounting			
Design	Pedestal mounting	Support arm mounting	Support arm mounting
Supply voltage			
Type of supply voltage	DC	DC	DC
Rated value (DC)	24 V	24 V	24 V
Interfaces			
Number of industrial Ethernet interfaces	2; 2 ports (switch)	2; 2 ports (switch)	2; 2 ports (switch)
Number of USB interfaces	4; on rear	4; on rear	4; on rear
USB on the rear	Yes; 2x onboard	Yes; 2x onboard	Yes; 2x onboard
Connection for keyboard/mouse	USB	USB	USB
Industrial Ethernet			
• Transmission rate, max.	1 000 Mbit/s	1 000 Mbit/s	1 000 Mbit/s
Degree and class of protection			
IP (at the front)	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65
NEMA (front)			
• Enclosure Type 4x at the front	Yes	Yes	Yes
• Enclosure Type 12 at the front	Yes	Yes	Yes

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC Industrial Thin Client PRO

Technical specifications

Article number	6AV6646-1BB15-0AA0 SIMATIC ITC1500 V3 PRO	6AV6646-1BC15-0AA0 SIMATIC ITC1500 V3 PRO	6AV6646-1BD15-0AA0 SIMATIC ITC1500 V3 PRO
Standards, approvals, certificates			
CE mark	Yes	Yes	Yes
cULus	Yes	Yes	Yes
FM approval	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes
KC approval	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes	Yes	Yes
Use in hazardous areas			
• 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
Ambient conditions			
Ambient temperature during operation			
• min.	0 °C	0 °C	0 °C
• max.	45 °C	45 °C	45 °C
Relative humidity			
• Operation, max.	90 %; no condensation	90 %; no condensation	90 %; no condensation
Vibrations			
• Vibration load in operation	10 m/s ²	10 m/s ²	10 m/s ²
• Vibration load during transport/storage	10 m/s ²	10 m/s ²	10 m/s ²
Shock testing			
• Shock load during operation	150 m/s ²	150 m/s ²	150 m/s ²
• shock acceleration during storage/transport	150 m/s ²	150 m/s ²	150 m/s ²
Software			
Web browser	Yes; HTML5, CSS	Yes; HTML5, CSS	Yes; HTML5, CSS
PDF reader	Yes	Yes	Yes
Configuration/header			
Configuration			
• Local	Yes	Yes	Yes
• Remote	Yes; Via web page	Yes; Via web page	Yes; Via web page
Languages			
Online languages			
• Number of online/runtime languages	2; german / english	2; german / english	2; german / english
Peripherals/Options			
USB memory	Yes; USB storage medium can be connected	Yes; USB storage medium can be connected	Yes; USB storage medium can be connected
Mechanics/material			
Enclosure material (front)			
• Aluminum	Yes	Yes	Yes
Dimensions			
Width of the housing front	396 mm	396 mm	396 mm
Height of housing front	256 mm; Without basic adapter	256 mm; Without basic adapter	256 mm; Without basic adapter
Weights			
Weight (without packaging)	6.3 kg	6.3 kg	6.3 kg

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.

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC PX-39A PRO

Technical specifications

Article number	6AV7252-.....-.... SIMATIC IPC PX-39A PRO
General information	
Product type designation	PX-39A PRO
Installation type/mounting	
Mounting	For mounting on stand or supporting bracket
Design	Panel PC on pedestal or supporting arm
maximum permissible installation angle +/-	±45 °
Supply voltage	
Type of supply voltage	24 V DC
Rated value (DC)	24 V
Mains buffering	
• Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Intel Celeron 6600HLE (2.1 GHz, 2C/2T) Intel Xeon W-11155MLE (1.8/3.1 GHz, 4C/6T) Intel Xeon W-11555MLE (1.9/4.4 GHz, 6C/12T) Intel Xeon W-11865MLE (1.5/4.5 GHz, 8C/16T)
Chipset	Intel® RM590E
Graphic	
Graphics controller	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)
Drives	
Hard disk	M.2 SSD ≥ 240 GB
SSD	Yes; ≥ 240 GB optional
Memory	
Type of memory	DDR4-2400 SO-DIMM
Main memory	4 / 8 / 16 / 32 GB; ECC optional
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time
Interfaces	
Number of industrial Ethernet interfaces	4; 4x Gigabit Ethernet (IE/PN)
USB port	4x USB 3.2 Gen2
Connection for keyboard/mouse serial interface version	USB / USB 1x (optional) COM (RS 232 / 485 / 422; selectable)
Video interfaces	
• Graphics interface	2x DisplayPort (DP1.4-capable); maximum 4096 × 2304 / 60 Hz / 36 bit
Industrial Ethernet	
• Industrial Ethernet interface	4x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Interrupts/diagnostics/status information	
LED status display	No

Article number	6AV7252-.....-.... SIMATIC IPC PX-39A PRO
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Fan	No
• Monitoring function via network	Optional
EMC	
Interference immunity against discharge of static electricity	
• 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
Interference immunity against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	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
Interference immunity to cable-borne interference	
• 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
• Interference immunity on signal cables > 30m	±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, surge
• Interference immunity on signal cables < 30m	±1 kV acc. to IEC 61000-4-4, Burst
Interference immunity against voltage surge	
• asymmetric interference	±2 kV acc. to IEC 61000-4-5, surge asymmetric
• symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric
Interference immunity to magnetic fields	
• Interference immunity to magnetic fields at 50 Hz	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference	
• Interference emission via line/ AC current cables	EN 61000-6-4, CAN/CSA CISPR22 class A; KS C 9832, FCC class A
Degree and class of protection	
IP65 (all-round)	Yes; IP65 fully enclosed
IP (at the front)	IP65
IP (rear)	IP65

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC PX-39A PRO

Technical specifications

Article number	6AV7252-.....-.... SIMATIC IPC PX-39A PRO
Standards, approvals, certificates	
CE mark	Yes
UKCA mark	Yes
CSA approval	Yes
UL approval	Yes; UL 61010-2-201 Second Edition, File E85972
• UL 508	No
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
FCC	Yes
BSMI	No; in preparation
BIS	Yes
EMC	CE, EN 61000-6-4; CISPR 22 Class A; FCC Class A
Marine approval	
• Germanischer Lloyd (GL)	Yes
• American Bureau of Shipping (ABS)	Yes
• Bureau Veritas (BV)	Yes
• Det Norske Veritas (DNV)	Yes
• Korean Register of Shipping (KRS)	Yes
• Lloyds Register of Shipping (LRS)	Yes
• Nippon Kaiji Kyokai (Class NK)	Yes

Article number	6AV7252-.....-.... SIMATIC IPC PX-39A PRO
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	45 °C
Altitude during operation relating to sea level	
• Installation altitude above sea level, max.	2 000 m
Relative humidity	
• Relative humidity	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%
• Operation, max.	85 %
Vibrations	
• 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 up to 200 Hz: 9.8 m/s ²
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27: 50 m/s ² , 30 ms
Operating systems	
pre-installed operating system	Windows 10 Enterprise 2021 LTSC, Industrial OS
without operating system	Yes; Optional

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC277G PRO

Overview



SIMATIC IPC277G PRO

The SIMATIC IPC277G PRO with fully-enclosed IP65 degree of protection in 12", 15" and 19" diagonal versions extends the portfolio of PRO devices.

The robust aluminum enclosure allows it to be used directly on the machine even in harsh ambient conditions.

The operating unit can either be mounted on a pedestal or connected to a support arm system.

Ordering data

SIMATIC IPC277G PRO (Nanopanel PC)

Operating unit

- 12" multi-touch (1280 x 800), for support arm (not expandable, flange on top)
- 12" multi-touch (1280 x 800), for pedestal (expandable, flange at bottom)
- 12" multi-touch (1280 x 800), for support arm (expandable, round tube)
- 15" multi-touch (1920 x 1080), for support arm (not expandable, flange on top)
- 15" multi-touch (1920 x 1080), for pedestal (expandable, flange at bottom)
- 15" multi-touch (1920 x 1080), for support arm (expandable, round tube)
- 19" multi-touch (1920 x 1080), for support arm (not expandable, flange on top)
- 19" multi-touch (1920 x 1080), for pedestal (expandable, flange at bottom)
- 19" multi-touch (1920 x 1080), for support arm (expandable, round tube)
- 12" multi-touch neutral (1280 x 800), for support arm (not expandable, flange on top)
- 12" multi-touch neutral (1280 x 800), for pedestal (expandable, flange at bottom)
- 12" multi-touch neutral (1280 x 800), for support arm (expandable, round tube)
- 15" multi-touch neutral (1920 x 1080), for support arm (not expandable, flange on top)
- 15" multi-touch neutral (1920 x 1080), for pedestal (expandable, flange at bottom)
- 15" multi-touch neutral (1920 x 1080), for support arm (expandable, round tube)
- 19" multi-touch neutral (1920 x 1080), for support arm (not expandable, flange on top)
- 19" multi-touch neutral (1920 x 1080), for pedestal (expandable, flange at bottom)
- 19" multi-touch neutral (1920 x 1080), for support arm (expandable, round tube)

Article No.

6AV7886- 1 ■ ■ ■ ■ - ■ ■ ■ ■ O

A
B
C
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Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC277G PRO

Ordering data

Article No.

SIMATIC IPC277G PRO
(Nanopanel PC)

6AV7886- 1 ■ ■ ■ ■ - ■ ■ ■ O

Processor

- Atom X6413E (2-core)
- Atom X6413E (4-core)
- Atom X6414RE (4-core)
- Atom X6413E (2-core) / TPM¹⁾
- Atom X6413E (4-core) / TPM¹⁾
- Atom X6414RE (4-core) / TPM¹⁾

A
B
C
D
E
F

Work memory

- 4 GB
- 8 GB
- 16 GB

1
2
3

Hardware configuration

- Without COM
- 1x COM

1
2

Article No.

SIMATIC IPC277G PRO
(Nanopanel PC)

6AV7886- 1 ■ ■ ■ ■ - ■ ■ ■ O

Mass storage

- None
- 256 GB Eco SSD
- 240 GB SSD
- 480 GB SSD

1
2
3
4

Hardware extension

- None
- NVRAM

A
B

Software

- Without software
- Windows 10 IoT Enterprise 2019 LTSC, 64-bit, MUI (en, de, fr, it, es)
- Windows 10 IoT Enterprise 2021 LTSC, 64-bit, MUI (en, de, fr, it, es)

A
B
C

¹⁾ TPM = Trusted Platform Module

Note:

Please select the required IPC configuration via the TIA Selection Tool or configurator in the SiePortal in order to ensure availability; we do not accept any liability for configurations compiled by users themselves.

The SIMATIC IPC online configurator offers a current overview at <https://www.siemens.com/ipc-configurators>.

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC277G PRO

Technical specifications

Article number	6AV7886-1....-.... SIMATIC IPC277G PRO
Installation type/mounting	
Design	Panel PC, PRO
maximum permissible installation angle +/-	45°
Supply voltage	
Type of supply voltage	24 V DC
Rated value (DC)	24 V
Mains buffering	
• Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Intel Atom X6211E / X6413E / X6414RE
Chipset	SoC
Graphic	
Graphics controller	Integrated
Drives	
SSD	Yes; 256 Eco / 240 / 480 GB
Memory	
Type of memory	DDR4 SO-DIMM
Main memory	4 / 8 / 16 GB; inband ECC optional
Hardware configuration	
Slots	
• free slots	1x M.2
Interfaces	
Number of industrial Ethernet interfaces	3; 3x Ethernet (RJ45)
USB port	4x USB 3.1 Gen2 10 GB/s + 2x USB 2.0 pin header
Connection for keyboard/mouse serial interface version	USB / USB without / 1x COM (RS 232 / 422 / 485; selectable)
Video interfaces	
• Graphics interface	2x DisplayPort
Industrial Ethernet	
• Industrial Ethernet interface	3x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Interrupts/diagnostics/status information	
LED status display	No
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Fan	No
• Monitoring function via network	Optional
EMC	
Interference immunity against discharge of static electricity	
• 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
Interference immunity against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	10 V/m, 80 MHz to 2 GHz, 80 % AM acc. to IEC 61000-6-2; 3 V/m, 2 GHz to 6 GHz 80 % AM acc. to IEC 61000-6-2; 10 V, 10 kHz to 80 MHz, 80 % AM acc. to IEC 61000-4-6

Article number	6AV7886-1....-.... SIMATIC IPC277G PRO
Interference immunity to cable-borne interference	
• 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
• Interference immunity on signal cables > 30m	±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
Interference immunity against voltage surge	
• asymmetric interference	±2 kV acc. to IEC 61000-4-5, surge asymmetric
• symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric
Emission of conducted and non-conducted interference	
• Interference emission via line/ AC current cables	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
Degree and class of protection	
IP (all-round)	IP65
IP (at the front)	IP65
IP (rear)	IP65
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
FCC	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	45 °C; 12": 40 °C
Relative humidity	
• 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)
Vibrations	
• 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 ² (1 g) (except DIN Rail) 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s ² (0.5 g) (DIN Rail)
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27: 150 m/s ² , 11 ms
Operating systems	
pre-installed operating system	Windows 10 IoT Enterprise 2019 LTSC, 64 bit, MUI
without operating system	Yes; Optional
Software	
SIMATIC Software	Optional package with SIMATIC WinCC

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Ordering data	Article No.	Ordering data	Article No.
SIMATIC IPC477E PRO¹⁾ <u>Operating system</u> <ul style="list-style-type: none"> Without operating system Windows Embedded Standard 7 SP1, English, 32-bit Windows Embedded Standard 7 SP1, English, 64-bit Windows Embedded Standard 7 P SP1, MUI, 64-bit, multi-touch Windows 7 Ultimate SP1, 64-bit, MUI (en, de, fr, it, es) Windows 10 Enterprise 2019 LTSC (64-bit) for Celeron, I3 and I5 Windows 10 Enterprise 2019 LTSC (64-bit) for Xeon Windows 10 IoT Enterprise 2016 LTSB (64-bit) for Celeron, I3 and I5 Windows 10 IoT Enterprise 2016 LTSB (64-bit) for Xeon 	6AV7251- 0 1 2 3 4 5 6 7 8	SIMATIC IPC477E PRO¹⁾ <u>Mass storage, internal</u> <ul style="list-style-type: none"> Without internal mass storage 128 GB solid-state drive SATA 240 GB solid-state drive SATA 480 GB solid-state drive SATA 	6AV7251- A D F G
<u>Mass storage, external</u> <ul style="list-style-type: none"> Without external mass storage CFast 2 GB, without operating system CFast 4 GB, without operating system CFast 8 GB (only optionally with operating system/software if no internal mass storage or HDD) CFast 16 GB (only optionally with operating system/software if no internal mass storage or HDD) CFast 128 GB (only optionally with operating system/software if no internal mass storage or HDD) 	0 1 2 3 4 5	<u>SIMATIC Software</u> <ul style="list-style-type: none"> Without SIMATIC Software 	A
		<u>Power supply</u> <ul style="list-style-type: none"> 24 V DC industrial power supply 24 V DC industrial power supply and TPM²⁾ (not for China or Russia) 	0 8

¹⁾ IPC477E PRO as "built to order" versions (max. delivery time 15 working days).

²⁾ TPM = Trusted Platform Module

Note:

As with the existing 4:3 IPC477C/D PRO devices, adaptation to different support arm/pedestal systems is by means of the basic adapter. The basic adapter is included in the scope of supply (except in the case of the "prepared for support arm and extension components" version, as the connection is made via a round tube).

For the version "prepared for support arm and extension components", 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.

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Technical specifications

Article number	6AV7251-.....-.... SIMATIC IPC477E PRO
General information	
Product type designation	IPC477E
Installation type/mounting	
Mounting	For mounting on stand or supporting bracket
Design	Panel PC on pedestal or supporting arm
maximum permissible installation angle +/-	±45 °
Supply voltage	
Type of supply voltage	24 V DC
Mains buffering	
• Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	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)
Chipset	Intel C236 / Intel H110
Graphic	
Graphics controller	Intel HD graphics controller
Drives	
SSD	Yes; ≥ 128 GB optional
Memory	
Type of memory	DDR4-2400 SO-DIMM
Main memory	4 / 8 / 16 GB, ECC optional
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time
Interfaces	
Number of industrial Ethernet interfaces	3; 3x Ethernet (RJ45)
USB port	4x USB 3.0 onboard (rear)
Connection for keyboard/mouse serial interface version	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS
Video interfaces	
• Graphics interface	2x DisplayPort
Industrial Ethernet	
• Industrial Ethernet interface	3x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Fan	No
• Monitoring function via network	Optional

Article number	6AV7251-.....-.... SIMATIC IPC477E PRO
EMC	
Interference immunity against discharge of static electricity	
• 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
Interference immunity against high-frequency electromagnetic fields	
• Interference immunity against high frequency radiation	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
Interference immunity to cable-borne interference	
• 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
• Interference immunity on signal cables > 30m	±2 kV acc. to IEC 61000-4-5, surge, length > 30m
• Interference immunity on signal cables < 30m	±1 kV acc. to IEC 61000-4-4; burst; length < 3 m; ±2 kV acc. to IEC 61000-4-4; burst; length > 3 m
Interference immunity against voltage surge	
• asymmetric interference	±2 kV acc. to IEC 61000-4-5, surge asymmetric
• symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric
Interference immunity to magnetic fields	
• Interference immunity to magnetic fields at 50 Hz	100 A/m; to IEC 61000-4-8
Emission of conducted and non-conducted interference	
• Interference emission via line/ AC current cables	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A
Degree and class of protection	
IP65 (all-round)	Yes; IP65 fully enclosed
IP (at the front)	IP65
IP (rear)	IP65

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Technical specifications

Article number	6AV7251-.....-.... SIMATIC IPC477E PRO
Standards, approvals, certificates	
CE mark	Yes
CSA approval	Yes
UL approval	Yes
• UL 508	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
EMC	CE, EN 61000-6-4; CISPR 22 Class A; FCC Class A
Use in hazardous areas	
• ATEX Zone 2	Yes; for inscription on device rating plate
• ATEX Zone 22	Yes; for inscription on device rating plate
• IECEx Zone 2	Yes; for inscription on device rating plate
• IECEx Zone 22	Yes; for inscription on device rating plate
• CCC Ex	Yes; for inscription on device rating plate
• cULus Class I Zone 2, Division 2	Yes; for inscription on device rating plate
• cULus Class II Division 2	Yes; for inscription on device rating plate
• FM Class I Division 2	No
• FM Class II Division 2	No
Marine approval	
• Germanischer Lloyd (GL)	Yes
• American Bureau of Shipping (ABS)	Yes
• Det Norske Veritas (DNV)	Yes
• Korean Register of Shipping (KRS)	Yes
• Lloyds Register of Shipping (LRS)	Yes

Article number	6AV7251-.....-.... SIMATIC IPC477E PRO
Ambient conditions	
Ambient temperature during operation	
• min.	0 °C
• max.	45 °C
Relative humidity	
• 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)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s ² (5 g), 30 ms, 100 shocks per axis
Operating systems	
pre-installed operating system	Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10
without operating system	Yes; Optional

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Technical specifications

Article number	6AV7251-.B...-....	6AV7251-.C...-....	6AV7251-.D...-....	6AV7251-.E...-....	6AV7251-.F...-....	6AV7251-.G...-....	6AV7251-.H...-....	6AV7251-.J...-....	6AV7251-.K...-....
	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch
General information									
Product type designation	IPC477E	IPC477E	IPC477E	IPC477E	IPC477E	IPC477E	IPC477E	IPC477E	IPC477E
Display									
Design of display	TFT widescreen display, LED backlighting								
Screen diagonal	15 in	15 in	15 in	19 in	19 in	19 in	22 in	22 in	22 in
Resolution (pixels)									
• Horizontal image resolution	1 366 pixel	1 366 pixel	1 366 pixel	1 366 pixel	1 366 pixel	1 366 pixel	1 920 pixel	1 920 pixel	1 920 pixel
• Vertical image resolution	768 pixel	768 pixel	768 pixel	768 pixel	768 pixel	768 pixel	1 080 pixel	1 080 pixel	1 080 pixel
Control elements									
Touch operation									
• Design as touch screen	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive	Yes; Projective-capacitive
Installation type/mounting									
Mounting	For mounting on stand or supporting bracket								
Design	Panel PC on pedestal or supporting arm								
Support arm mounting	Yes; Suitable for support arm without extension components	No	Yes; Suitable for support arm and extension components (please refer to manual)	Yes; Suitable for support arm without extension components	No	Yes; Suitable for support arm and extension components (please refer to manual)	Yes; Suitable for support arm without extension components	No	Yes; Suitable for support arm and extension components (please refer to manual)
Stand mounting	No	Yes; Prepared for pedestal and extension components	No	No	Yes; Prepared for pedestal and extension components	No	No	Yes; Prepared for pedestal and extension components	No
Mounting in portrait format possible	No	No	No	No	No	No	No	No	No
maximum permissible installation angle +/-	±45 °	±45 °	±45 °	±45 °	±45 °	±45 °	±45 °	±45 °	±45 °
Supply voltage									
Type of supply voltage	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
Mains buffering									
• Mains/voltage failure stored energy time	20 ms	20 ms	20 ms	20 ms	20 ms	20 ms	20 ms	20 ms	20 ms

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Technical specifications

Article number	6AV7251-.B...-....	6AV7251-.C...-....	6AV7251-.D...-....	6AV7251-.E...-....	6AV7251-.F...-....	6AV7251-.G...-....	6AV7251-.H...-....	6AV7251-.J...-....	6AV7251-.K...-....
	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch
Processor									
Processor type	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)								
Chipset	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110	Intel C236 / Intel H110
Graphic									
Graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller	Intel HD graphics controller
Drives									
SSD	Yes; ≥ 128 GB optional								
Memory									
Type of memory	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM	DDR4-2400 SO-DIMM
Main memory	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional	4 / 8 / 16 GB, ECC optional
Data areas and their retentivity									
Retentive data area (incl. timers, counters, flags), max.	512 kbyte; 128 KB can be stored in the buffer time								
Interfaces									
Number of industrial Ethernet interfaces	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)	3; 3x Ethernet (RJ45)
USB port	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)	4x USB 3.0 onboard (rear)
Connection for keyboard/mouse serial interface version	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS	USB / USB Without / 2x COM (RS 232 / 422 / 485), selectable in the BIOS
Video interfaces									
• Graphics interface	2x DisplayPort								
Industrial Ethernet									
• Industrial Ethernet interface	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)	3x Ethernet (RJ45)
- 100 Mbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
- 1000 Mbps	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Integrated Functions									
Monitoring functions									
• Temperature monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Watchdog	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Fan	No	No	No	No	No	No	No	No	No
• Monitoring function via network	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Technical specifications

Article number	6AV7251-.B...-....	6AV7251-.C...-....	6AV7251-.D...-....	6AV7251-.E...-....	6AV7251-.F...-....	6AV7251-.G...-....	6AV7251-.H...-....	6AV7251-.J...-....	6AV7251-.K...-....
	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch
EMC									
Interference immunity against discharge of static electricity									
<ul style="list-style-type: none"> 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								
Interference immunity against high-frequency electromagnetic fields									
<ul style="list-style-type: none"> Interference immunity against high frequency radiation 	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								
Interference immunity to cable-borne interference									
<ul style="list-style-type: none"> Interference immunity on supply cables Interference immunity on signal cables > 30m Interference immunity on signal cables < 30m 	±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 61000-4-5, surge, 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								
Interference immunity against voltage surge									
<ul style="list-style-type: none"> asymmetric interference symmetric interference 	±2 kV acc. to IEC 61000-4-5, surge asymmetric; ±1 kV acc. to IEC 61000-4-5, surge symmetric								
Interference immunity to magnetic fields									
<ul style="list-style-type: none"> Interference immunity to magnetic fields at 50 Hz 	100 A/m; to IEC 61000-4-8								
Emission of conducted and non-conducted interference									
<ul style="list-style-type: none"> Interference emission via line/AC current cables 	EN 61000-6-3, EN 61000-6-4, CISPR 22 Class B, FCC Class A								
Degree and class of protection									
IP65 (all-round)	Yes; IP65 fully enclosed								
IP (at the front)	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
IP (rear)	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65	IP65
Standards, approvals, certificates									
CE mark	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CSA approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
UL approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<ul style="list-style-type: none"> UL 508 	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cULus	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
RCM (formerly C-TICK)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
KC approval	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EAC (formerly Gost-R)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
EMC	CE, EN 61000-6-4; CISPR 22 Class A; FCC Class A								
Use in hazardous areas									
<ul style="list-style-type: none"> ATEX Zone 2 ATEX Zone 22 IECEX Zone 2 IECEX Zone 22 CCC Ex cULus Class I Zone 2, Division 2 cULus Class II Division 2 FM Class I Division 2 FM Class II Division 2 	Yes; for inscription on device rating plate; No; No; No; No; No; No; No; No; No; No								

Industrial Computing

Devices for special requirements

PROtected devices and system components

SIMATIC IPC477E PRO

Technical specifications

Article number	6AV7251-.B...-....	6AV7251-.C...-....	6AV7251-.D...-....	6AV7251-.E...-....	6AV7251-.F...-....	6AV7251-.G...-....	6AV7251-.H...-....	6AV7251-.J...-....	6AV7251-.K...-....
	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 15 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 19 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch	SIMATIC IPC477E PRO, 22 MTouch
Marine approval									
• Germanischer Lloyd (GL)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• American Bureau of Shipping (ABS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Det Norske Veritas (DNV)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Korean Register of Shipping (KRS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
• Lloyds Register of Shipping (LRS)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ambient conditions									
Ambient temperature during operation									
• min.	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C	45 °C
Relative humidity									
• 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)								
Vibrations									
• Vibration resistance during operation acc. to IEC 60068-2-6	tested to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.075 mm, 58 Hz to 200 Hz: 9.8 m/s ² (1 g)								
Shock testing									
• Shock load during operation	Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s ² (5 g), 30 ms, 100 shocks per axis								
Operating systems									
pre-installed operating system	Windows 7 Ultimate (Multi-Language) 64-bit, Windows Embedded Standard 7 E/P 32-bit / 64-bit, Windows 10								
without operating system	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional	Yes; Optional
Accessories									
Accessory components			6AV7674-1KF00-0AA0 - Flange mount for installation (refer to manual)		Basic adapter for mounting (MLFB: 6AV7674-1KA00-0AA0)	6AV7674-1KF00-0AA0 - Flange mount for installation (refer to manual)			6AV7674-1KF00-0AA0 - Flange mount for installation (refer to manual)
Dimensions									
Width of the housing front	396 mm	396 mm	396 mm	462 mm	462 mm	462 mm	527 mm	527 mm	527 mm
Height of housing front	255 mm; Without basic adapter	255 mm; Without basic adapter	255 mm	292 mm; Without basic adapter	292 mm; Without basic adapter	292 mm	329 mm; Without basic adapter	329 mm; Without basic adapter	329 mm
Weights									
Weight, approx.	6.8 kg	6.8 kg	7.5 kg	8.2 kg	8.2 kg	8.8 kg	9.3 kg	9.3 kg	9.9 kg

More information

More information is available on the internet at

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

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.

Industrial Computing

Devices for special requirements

PROtected devices and system components

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.

VESA 100 adapter set¹⁾	6AV7674-0KD00-0AA0
VESA 75 adapter set	6AV7674-0KE00-0AA0
Basic adapter for 16:9 systems	6AV7674-1KA00-0AA0
Spare part (silver, included in the scope of delivery of the device)	
Round tube adapter for 16:9 systems	6AV7674-1KF00-0AA0
Suitable for 16:9 PRO devices of the type "prepared for support arm and extension components (round tube connection)"	
VESA 100/75 round tube adapter	6AV6881-0AD56-0AA0
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.	
Round tube cap for PRO devices	6AV7674-1LB40-0AA0 6AV7674-1LB50-0AA0
Replacement adapter for PRO devices	

¹⁾ 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

Industrial Computing

Devices for special requirements

PROtected devices and system components

Fixing elements

Technical specifications

Article number	6AV7674-0KD00-0AA0	6AV7674-0KE00-0AA0
	Adapter Set VESA 100 Fully enclosed HMI	Adapter Set VESA 75 f. Fully Enclose HMI
General information		
Product type designation	Adapter set VESA 100	Adapter set VESA 75
Degree and class of protection		
IP (all-round)	IP65	IP65
Ambient conditions		
Suited for indoor use	Yes	Yes
Suited for outdoor use	No	No
Ambient temperature during operation		
• min.	0 °C	0 °C
• max.	55 °C	55 °C
Relative humidity		
• Operation, max.	90 %	90 %
• Condensation permissible	No	No
Scope of supply		
Delivery quantity in pieces	1	1
Other		
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

Article number	6AV7674-1KA00-0AA0
	Basic Adapter for HMI/IPC Pro (16:9)
General information	
Product type designation	Basic adapter
Other	
Merchandise	Yes
Manufacturer name	SIEMENS AG
Manufacturer's address	Gleiwitzerstraße 555, 90475 Nuremberg, Germany

Article number	6AV7674-1KF00-0AA0
	Flange Mount for Pro Devices
General information	
Product type designation	Flange mount
Installation type/mounting	
Mounting	for the transition from a size 48 round tube to a flange plate (compatible with basic adapter interface)
Degree and class of protection	
IP (all-round)	IP65 when installed
Mechanics/material	
Material	Steel, powder coating in RAL 9006

Article number	6AV7674-1KF00-0AA0
	Flange Mount for Pro Devices
Dimensions	
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
Weights	
Weight (without packaging)	900 g
Scope of supply	
Delivery quantity in pieces	1
Other	
Target devices	Suitable for PRO devices, prepared for support arm and extension components (round tube connection)

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

Industrial Computing

Devices for special requirements

PROtected devices and system components

Fixing elements

Technical specifications

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

Industrial Computing

Devices for special requirements
PROtected devices and system components

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"	6AV7674-1LA31-0AA0
• 15"	6AV7674-1LA41-0AA0
• 19"	6AV7674-1LA51-0AA0
• 22"	6AV7674-1LA61-0AA0
• 24"	6AV7674-1LA71-0AA0
• 24" portrait	6AV7674-1LA81-0AA0

Extension Unit PROFINET

• 12"	6AV7674-1LA32-0AA0
• 15"	6AV7674-1LA42-0AA0
• 19"	6AV7674-1LA52-0AA0
• 22"	6AV7674-1LA62-0AA0
• 24"	6AV7674-1LA72-0AA0
• 24" portrait	6AV7674-1LA82-0AA0

Extension Unit PROFIsafe

• 12"	6AV7674-1LA33-0AA0
• 15"	6AV7674-1LA43-0AA0
• 19"	6AV7674-1LA53-0AA0
• 22"	6AV7674-1LA63-0AA0
• 24"	6AV7674-1LA73-0AA0
• 24" portrait	6AV7674-1LA83-0AA0

Extension Unit box

• 12"	6AV7674-1LA30-0AA0
• 15"	6AV7674-1LA40-0AA0
• 19"	6AV7674-1LA50-0AA0
• 22"	6AV7674-1LA60-0AA0
• 24"	6AV7674-1LA70-0AA0
• 24" portrait	6AV7674-1LA80-0AA0

Extension Unit Advanced PROFINET¹⁾

• 12" KP12 PN	6AV2185-8CE01-0AA0
• 15" KP12 PN	6AV2185-8DE01-0AA0
• 19" KP12 PN	6AV2185-8EE01-0AA0
• 22" KP12 PN	6AV2185-8FE01-0AA0
• 12" KP24 PN	6AV2185-8CE08-0AA0
• 15" KP36 PN	6AV2185-8DE08-0AA0
• 19" KP36 PN	6AV2185-8EE08-0AA0
• 22" KP48 PN	6AV2185-8FE08-0AA0

Extension Unit Advanced PROFIsafe¹⁾

• 12" KP12F PN	6AV2185-8CF01-0AA0
• 15" KP12F PN	6AV2185-8DF01-0AA0
• 19" KP12F PN	6AV2185-8EF01-0AA0
• 22" KP12F PN	6AV2185-8FF01-0AA0

¹⁾ 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

Industrial Computing

Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

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

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
General information						
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
Control elements						
Connection type						
• Connection type of the LED module	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	
• Connection type of the safety-related contacts (emergency stop)	8-pin connector	8-pin connector	8-pin connector	8-pin connector	8-pin connector	
Installation type/mounting						
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
Supply voltage						
Rated value (DC)	24 V	24 V	24 V	24 V	24 V	24 V
Degree and class of protection						
IP (all-round)	IP65	IP65	IP65	IP65	IP65	IP65
NEMA (front)						
• Enclosure Type 4x at the front						Yes; All-round

Industrial Computing

Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV7674-1LA31-0AA0 Extension Unit 12" hardwired	6AV7674-1LA41-0AA0 Extension Unit 15" hardwired	6AV7674-1LA51-0AA0 Extension Unit 19" hardwired	6AV7674-1LA61-0AA0 Extension Unit 22" hardwired	6AV7674-1LA71-0AA0 Extension Unit 24" hardwired	6AV7674-1LA81-0AA0 Extension Unit 24" Portrait hardwired
Standards, approvals, certificates						
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
Ambient conditions						
Ambient temperature during operation						
• min.	0 °C					
• max.	50 °C					
Altitude during operation relating to sea level						
• Installation altitude above sea level, max.	2 000 m					
Relative humidity						
• Operation, max.	90 %; no condensation					
Cables						
Cable length	30 m					
Mechanics/material						
Material						
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
Enclosure material (front)						
• Aluminum	Yes; Knockout covered with black film					
Dimensions						
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	
Weights						
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	2.6 kg	2.2 kg
Scope of supply						
Delivery quantity in pieces	1	1	1	1	1	1
Components included	all connectors required for customer interfaces					

Industrial Computing

Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

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
General information						
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
Control elements						
With parameterizable keys	Yes	Yes	Yes	Yes		
Connection type						
• Connection type of the safety-related contacts (emergency stop)	8-pin connector					
Installation type/mounting						
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				
Supply voltage						
Rated value (DC)	24 V					
Interfaces						
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					
Protocols						
PROFINET	Yes	Yes	Yes	Yes	Yes	Yes
Redundancy mode						
Media redundancy - MRP	Yes	Yes	Yes	Yes	Yes	Yes
Test commissioning functions						
Key and signal lamp test	Yes; automatically when switching on		Yes; automatically when switching on			
Degree and class of protection						
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

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Devices for special requirements

PROtected devices and system components

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
Standards, approvals, certificates						
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
Ambient conditions						
Ambient temperature during operation						
• min.	0 °C					
• max.	50 °C					
Altitude during operation relating to sea level						
• Installation altitude above sea level, max.	2 000 m					
Relative humidity						
• Operation, max.	90 %; no condensation					
Cables						
Cable length	30 m; Max. for emergency stop	30 m				
Mechanics/material						
Material						
• Aluminum	Yes	Yes	Yes	Yes	Yes	Yes
Enclosure material (front)						
• Aluminum	Yes; Knockout covered with black film					
Dimensions						
Width	313 mm	396 mm	462 mm	527 mm	583 mm	361 mm
Height	99 mm					
Depth	100.65 mm					
Weights						
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	2.6 kg	2.2 kg
Scope of supply						
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

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Devices for special requirements

PROtected devices and system components

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
General information					
Product type designation	Extension Unit 12" PROFIsafe	Extension Unit 15" PROFIsafe	Extension Unit 19" PROFIsafe	Extension Unit 22" PROFIsafe	Extension Unit 24" PROFIsafe
Control elements					
With parameterizable keys	Yes	Yes	Yes	Yes	
Installation type/mounting					
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				
Supply voltage					
Rated value (DC)	24 V				
Interfaces					
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				
Protocols					
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
Redundancy mode					
Media redundancy					
- MRP	Yes	Yes			Yes
Test commissioning functions					
Key and signal lamp test	Yes; automatically when switching on				
Degree and class of protection					
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	

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Devices for special requirements

PROtected devices and system components

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
Standards, approvals, certificates					
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
Ambient conditions					
Ambient temperature during operation					
• min.	0 °C				
• max.	50 °C				
Altitude during operation relating to sea level					
• Installation altitude above sea level, max.	2 000 m				
Relative humidity					
• Operation, max.	90 %; no condensation				
Cables					
Cable length					30 m
Mechanics/material					
Material					
• Aluminum	Yes	Yes	Yes	Yes	Yes
Enclosure material (front)					
• Aluminum	Yes; Knockout covered with black film				
Dimensions					
Width	313 mm	396 mm	462 mm	527 mm	583 mm
Height	99 mm				
Depth	100.65 mm				
Weights					
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg	2.6 kg
Scope of supply					
Delivery quantity in pieces	1	1	1	1	1
Components included	Power supply connector				

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Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV2185-8CE01-0AA0	6AV2185-8DE01-0AA0	6AV2185-8EE01-0AA0	6AV2185-8FE01-0AA0
	Extension Unit 12" KP12 PN	Extension Unit 15" KP12 PN	Extension Unit 19" KP12 PN	Extension Unit 22" KP12 PN
General information				
Product type designation	Extension Unit 12" KP12 PN	Extension Unit 15" KP12 PN	Extension Unit 19" KP12 PN	Extension Unit 22" KP12 PN
Control elements				
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
Connection type				
• Connection type of the safety-related contacts (emergency stop)	8-pin connector	8-pin connector	8-pin connector	8-pin connector
Installation type/mounting				
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			
Supply voltage				
Rated value (DC)	24 V	24 V	24 V	24 V
Interfaces				
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
Protocols				
PROFINET	Yes	Yes	Yes	Yes
Redundancy mode				
Media redundancy				
- MRP	Yes	Yes	Yes	Yes
Degree and class of protection				
IP (all-round)	IP65	IP65	IP65	IP65

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Devices for special requirements

PROtected devices and system components

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
Standards, approvals, certificates				
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
Ambient conditions				
Ambient temperature during operation				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C
Altitude during operation relating to sea level				
• Installation altitude above sea level, max.	2 000 m	2 000 m	2 000 m	2 000 m
Relative humidity				
• Operation, max.	90 %; no condensation			
Cables				
Cable length	30 m; Max. for emergency stop			
Mechanics/material				
Material				
• Aluminum	Yes	Yes	Yes	Yes
Enclosure material (front)				
• Aluminum	Yes; Knockout covered with black film			
Dimensions				
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
Weights				
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg
Scope of supply				
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

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Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV2185-8CE08-0AA0	6AV2185-8DE08-0AA0	6AV2185-8EE08-0AA0	6AV2185-8FE08-0AA0
	Extension Unit 12" KP24 PN	Extension Unit 15" KP36 PN	Extension Unit 19" KP36 PN	Extension Unit 22" KP48 PN
General information				
Product type designation	Extension Unit 12" KP24 PN	Extension Unit 15" KP36 PN	Extension Unit 19" KP36 PN	Extension Unit 22" KP48 PN
Control elements				
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
Connection type				
• Connection type of the safety-related contacts (emergency stop)	8-pin connector	8-pin connector	8-pin connector	8-pin connector
Installation type/mounting				
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
Supply voltage				
Rated value (DC)	24 V	24 V	24 V	24 V
Interfaces				
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
Protocols				
PROFINET	Yes	Yes	Yes	Yes
Redundancy mode				
Media redundancy				
- MRP	Yes	Yes	Yes	Yes
Degree and class of protection				
IP (all-round)	IP65	IP65	IP65	IP65

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Devices for special requirements

PROtected devices and system components

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
Standards, approvals, certificates				
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
Ambient conditions				
Ambient temperature during operation				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C
Altitude during operation relating to sea level				
• Installation altitude above sea level, max.	2 000 m	2 000 m	2 000 m	2 000 m
Relative humidity				
• Operation, max.	90 %; no condensation			
Cables				
Cable length	30 m; Max. for emergency stop			
Mechanics/material				
Material				
• Aluminum	Yes	Yes	Yes	Yes
Enclosure material (front)				
• Aluminum	Yes; Knockout covered with black film			
Dimensions				
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
Weights				
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg
Scope of supply				
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

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Devices for special requirements

PROtected devices and system components

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
General information				
Product type designation	Extension Unit 12" KP12F PN	Extension Unit 15" KP12F PN	Extension Unit 19" KP12F PN	Extension Unit 22" KP12F PN
Control elements				
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
Installation type/mounting				
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			
Supply voltage				
Rated value (DC)	24 V	24 V	24 V	24 V
Interfaces				
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
Protocols				
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
Redundancy mode				
Media redundancy				
- MRP	Yes	Yes	Yes	Yes
Degree and class of protection				
IP (all-round)	IP65	IP65	IP65	IP65

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Devices for special requirements

PROtected devices and system components

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
Standards, approvals, certificates				
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
Ambient conditions				
Ambient temperature during operation				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C
Altitude during operation relating to sea level				
• Installation altitude above sea level, max.	2 000 m	2 000 m	2 000 m	2 000 m
Relative humidity				
• Operation, max.	90 %; no condensation			
Mechanics/material				
Material				
• Aluminum	Yes	Yes	Yes	Yes
Enclosure material (front)				
• Aluminum	Yes; Knockout covered with black film			
Dimensions				
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
Weights				
Weight (without packaging)	2.2 kg	2.5 kg	2.7 kg	2.8 kg
Scope of supply				
Delivery quantity in pieces	1	1	1	1
Components included	Power supply connector	Power supply connector	Power supply connector	Power supply connector

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Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV7674-1MA00-0AA0	6AV7674-1MB00-0AA0	6AV7674-1MG00-0AA0	6AV7674-1MG50-0AA0	6AV7674-1MC00-0AA0
	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
General information					
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
Control elements					
Version of actuating element	Conical mushroom pushbutton	Pushbutton with flat pushbutton	Pushbutton with flat pushbutton	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"> Type of light source Color of light source 		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)	SMT LED 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	
Installation type/mounting					
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
Supply voltage					
Rated value (DC)	24 V	24 V	24 V	24 V	24 V
Degree and class of protection					
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
Standards, approvals, certificates					
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

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Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV7674-1MA00-0AA0	6AV7674-1MB00-0AA0	6AV7674-1MG00-0AA0	6AV7674-1MG50-0AA0	6AV7674-1MC00-0AA0
	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
Ambient conditions					
Ambient temperature during operation					
• min.	0 °C	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C	50 °C
Altitude during operation relating to sea level					
• Installation altitude above sea level, max.	3 500 m	3 500 m	3 500 m	3 500 m	3 500 m
Relative humidity					
• Operation, max.	90 %	90 %	90 %	90 %	90 %
• Condensation permissible	No	No	No	No	No
Mechanics/material					
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
Service life					
• Number of operating cycles, keys	50 000	1 000 000	1 000 000	1 000 000	
Dimensions					
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
Weights					
Weight (without packaging)	50 g	50 g	50 g	50 g	50 g
Scope of supply					
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
Other					
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	

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Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV7674-1MD00-0AA0 Selector Switch for Ext. Unit	6AV7674-1ME00-0AA0 Key-operated Switch for Ext. Unit	6AV7674-1ME50-0AA0 Key-operated Switch Safety for Ext. Unit	6AV7674-1MF00-0AA0 USB interface for extension unit
General information				
Product type designation	Selector switch for Extension Unit	Key-operated switch for Extension Unit	Safety keyswitch for Extension Unit	USB interface for Extension Unit
Control elements				
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	
Connection type				
• USB				Yes; USB 2.0 type A
• Cable length				0.7 m
Installation type/mounting				
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
Supply voltage				
Rated value (DC)	24 V	24 V	24 V	
Degree and class of protection				
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
Standards, approvals, certificates				
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
Ambient conditions				
Ambient temperature during operation				
• min.	0 °C	0 °C	0 °C	0 °C
• max.	50 °C	50 °C	50 °C	50 °C
Altitude during operation relating to sea level				
• Installation altitude above sea level, max.	3 500 m	3 500 m	3 500 m	3 500 m
Relative humidity				
• Operation, max.	90 %	90 %	90 %	90 %
• Condensation permissible	No	No	No	No

Industrial Computing

Devices for special requirements

PROtected devices and system components

Extension Units and operator controls

Technical specifications

Article number	6AV7674-1MD00-0AA0 Selector Switch for Ext. Unit	6AV7674-1ME00-0AA0 Key-operated Switch for Ext. Unit	6AV7674-1ME50-0AA0 Key-operated Switch Safety for Ext. Unit	6AV7674-1MF00-0AA0 USB interface for extension unit
Operating systems				
Runs under operating system				
• other				Yes; Windows 7 Ultimate 32-bit / 64-bit, MUI; Windows Embedded Standard 7 E/P, 32-bit / 64-bit
Cables				
Cable length				0.5 m
smallest bending radius				0 mm
Mechanics/material				
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	
Service life				
• Number of operating cycles, keys	300 000	50 000	50 000	1 500; Insertion cycles
Dimensions				
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
Weights				
Weight (without packaging)	50 g	50 g	50 g	0.13 g
Scope of supply				
Delivery quantity in pieces	1	1; Including 2 keys	1; Including 2 keys	
Components included				USB socket with cable and connector, threaded ring
Other				
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	

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.

Industrial Computing

Devices for special requirements

PROtected devices and system components

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.

Keyboard tray for PRO devices Tilttable, incl. 2-way USB interface; color: silver	6AV7674-1NF01-0AA0
Keyboard tray plate for PRO devices Tilttable, incl. 2-way USB interface; color: silver	6AV7674-1NG00-0AA0
USB interface for PRO devices 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	6AV7674-1LX00-0AA0
Handles for PRO devices For optimum handling and haptics when positioning and tilting the HMI PRO device. Universally adjustable from 12" to 22".	6AV7674-1LB10-0AA0
Handles for PRO devices 24"	6AV7674-1LB15-0AA0

Industrial Computing

Devices for special requirements
PROtected devices and system components

Extension components

Technical specifications

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

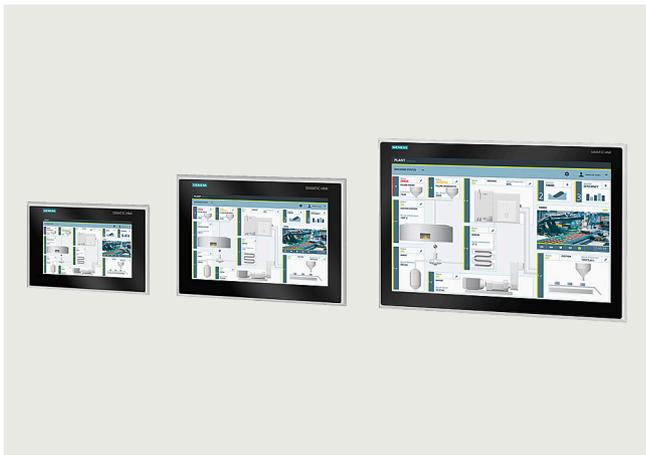
Article number	6AV7674-1LX00-0AA0
	USB Interface for Pro Devices
General information	
Product type designation	USB interface for PRO devices
Control elements	
Connection type	
• USB	Yes; USB 2.0 type A
• Cable length	0.5 m
Installation type/mounting	
Mounting	Integrated by means of cover on the side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

Industrial Computing

Devices for special requirements

HYGienic devices (stainless steel front)

Overview



For special requirements, devices with stainless steel fronts (EN 1672-2) are offered for use in the food, beverages and tobacco industries, for example.