

SIEMENS



Engineered
with
TIA Portal

SIMATIC HMI Panels

Operator Panels for All Requirements – and All Demands

siemens.com/hmi



The TIA Portal represents the intuitive, efficient and proven engineering framework for all automation tasks.

Answers for industry.



“I don’t compromise when it comes to operation and monitoring. This is why I rely on the equally proven and innovative solutions by the world market leader – for all applications.”

New productivity benchmarks for sustainable competitive advantages

Against the background of increasing global competition, the consistent utilization of all optimization potentials throughout the entire lifecycle of a machine or plant has never been more important than today. Optimized processes facilitate reduced total cost of ownership, minimized time-to-market and enhanced quality.

Totally Integrated Automation is perfectly attuned to meet these targets while also being open for international standards and third-party systems. With its special system characteristics, Totally Integrated Automation supports the entire lifecycle of a machine or plant.

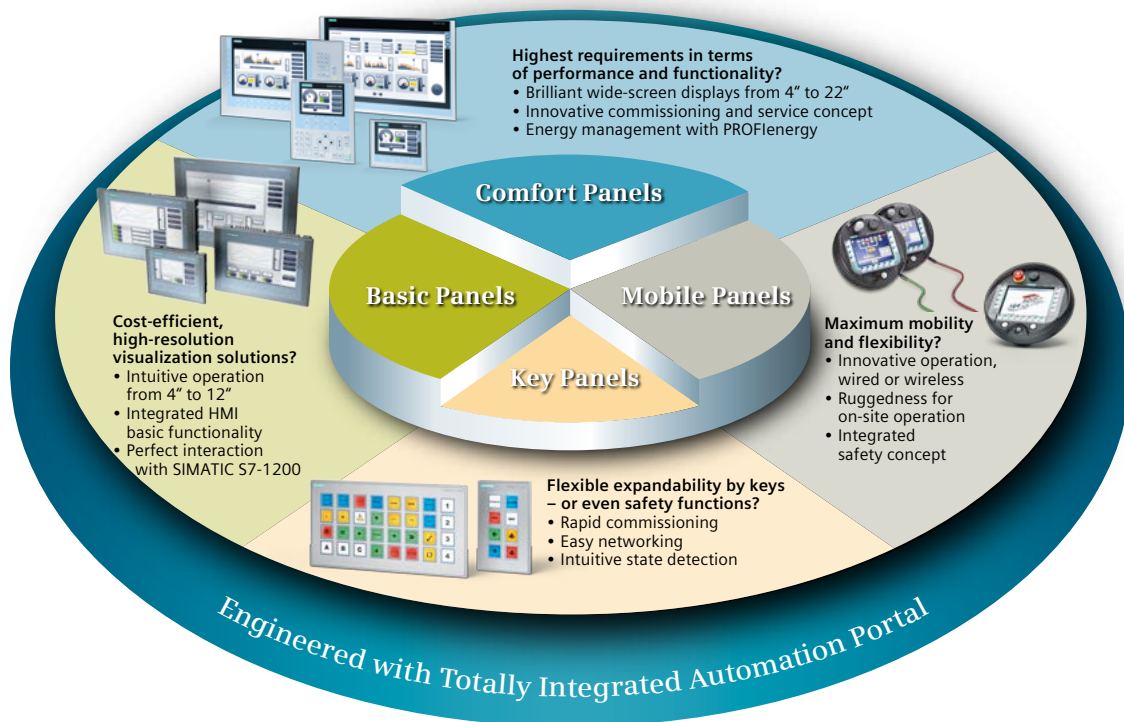
SIMATIC, the world’s leading automation system, represents a core component of Totally Integrated Automation and comprises a multitude of standardized, flexible and scalable products. For example: SIMATIC operator panels, which are presented in this brochure.

The integrated engineering framework for controllers, HMI and drives: TIA Portal

With the Totally Integrated Automation Portal (TIA Portal), Siemens offers an engineering framework which facilitates the implementation of automation solutions in all sectors worldwide. From automation system planning, commissioning, operation and maintenance down to expansion – the TIA Portal offers significant saving potentials in terms of engineering time, costs and expenditures.

Find out more
www.siemens.com/tia-portal

TIA Portal



SIMATIC HMI Panels

First choice for efficient operation and monitoring

SIMATIC HMI Panels have been tried and tested in the most various applications throughout all sectors for years. They not only feature an innovative design and high performance - as a unique highlight, they can be configured via SIMATIC WinCC in the TIA Portal. Users can thus benefit from unprecedented engineering efficiency.

Integrated functionality across all display sizes

The hardware's functionality is identical throughout a device range. Simply select the optimum display size for your application and choose between operation via touch screen and/or keys. As the software is scalable, you can start with a small solution and further expand it any time as required – for example by increasing the number of tags. Innovative graphical user interfaces open up completely new possibilities in terms of intuitive operation and monitoring.

Integrated functionality across all display sizes

- **SIMATIC HMI Comfort Panels:**
First choice for demanding applications
- **SIMATIC HMI Basic Panels:**
Basic functions for simple HMI applications
- **SIMATIC HMI Mobile Panels:**
Maximum mobility for operation and monitoring
- **SIMATIC HMI Key Panels:**
Innovative operator panels – for turnkey operation

Unique engineering efficiency

SIMATIC HMI Panels can be intuitively configured in the TIA Portal via the scalable SIMATIC WinCC software. This results in increased engineering efficiency when further components from the Totally Integrated Automation portfolio are used – e.g. SIMATIC controllers. The perfect interaction with STEP 7 does away with multiple entries and ensures maximum data consistency.

Long-term value maintenance

SIMATIC products facilitate long-term investment protection. Existing projects can be easily and directly migrated to the successor product. Following the phase-out period of a model range, we support you with long-term spare parts availability. Moreover, the matching accessories for each product are available throughout the entire product lifecycle.

The TIA Selection Tool helps you to select the suitable device for your application

www.siemens.com/hmi-selection-tool

Convince yourself of our HMI portfolio in practical applications

<https://webservices.siemens.com/referenzen>

Find out more

www.siemens.com/hmi

HMI Panels

SIMATIC HMI Comfort Panels

First choice for
demanding HMI tasks



Various display sizes – identical functionality

All SIMATIC HMI Comfort Panels consistently offer the same high-end functionality. Featuring high-resolution wide-screen displays from 4" to 22", optionally with touch or key operation, they can be optimally adjusted to any application. Furthermore, they offer numerous innovations:

Flexible high-resolution displays

With up to 40% more visualization space, the wide-screen format offers extended display options for complex operating screens – and a clear differentiation between application monitoring and operation. The high resolution with 16 million colors facilitates detailed process visualization and optimum readability. Together with the wide reading angle of 170°, this ensures optimum readability. The displays' high brightness is 100 % dimmable to allow for optimum adjustability to individual requirements – this is for example important for applications on ships and ensures reduced energy consumption.

New innovative graphical user interface

A new, innovative graphical user interface opens up completely new possibilities in terms of intuitive machine operation and monitoring.

Integrated high-end functionality

SIMATIC HMI Comfort Panels are characterized by their high performance which amongst others ensures rapid image build. Irrespective of the display size, all devices offer archives, VB scripts and various viewers for the display of plant documentation (e.g. as PDF) and Internet websites. The system diagnostics options in interaction with SIMATIC controllers represent an innovation. Diagnostics information which could previously only be obtained via programming device can now be read out via the Comfort Panel.

Efficient energy management

The standardized PROFlenergy protocol supports the coordinated central disconnection of redundant energy loads and the detection of measured energy values. This facilitates disconnection of the Comfort Panels' displays even during short break times for reduced energy consumption. PROFINET as a standard facilitates easy integration in existing plant structures and offers high investment protection.

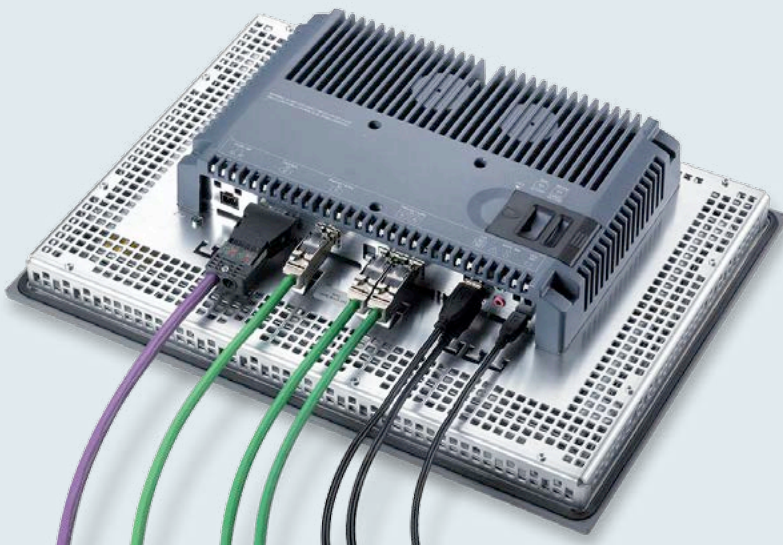
100 percent data security in case of power failure

The Comfort Panels' protection against voltage failure ensures cost-efficient data retention – without an additional uninterruptible power supply. The same applies to recipes and archives in RDB format when these are saved on a SIMATIC HMI memory card.

Suitability for harsh environments

The rugged SIMATIC HMI Comfort Panels come with numerous approvals for application in various countries and for use in sectors subject to increased requirements. From 7" upward, the devices are equipped with particularly durable aluminum die-cast fronts. All Comfort Panels are approved for application in explosive areas in accordance with UL CL.I, Div.2. Furthermore, devices up to 12" are certified for Zones 2 and 22 in accordance with ATEX and offer various marine approvals such as GL or ABS.





Integrated interfaces

SIMATIC HMI Comfort Panels are suitable for integration in PROFINET and PROFIBUS networks and feature interfaces for the connection of USB I/O. From 7" upwards, the devices come with a 2-port Ethernet switch and from 15" upwards with an additional Gigabit PROFINET interface.

Eased project transfer

Standard cables can be used for loading HMI projects via PROFINET / Ethernet or USB – no special cables are required. Device settings are made during configuration, additional settings on the device itself are done away with. This ensures eased commissioning. The project data and device settings are saved to a system card integrated in the device and automatically updated. The system card can be used for project transfer to a further device.

New: Monitoring with network cameras

The download option plant monitoring via network camera and camera control allows for:

- Monitoring of multiple remote processes on the Comfort Panel
- Monitoring of difficult-to-access areas
- Documentation and saving of machine states

Camera control download via:

www.siemens.com/comfort-panels

Printing and documentation

- Paperless printing in PDF / HTML format
- Screenshots for rapid documentation
- Archiving of process values and reports

Highlights

- Device variety from 4" to 22", with touch screen and/or control keys
- Brilliant displays in widescreen format
- All touch devices also support vertical installation – for optimum plant space utilization or for special machine designs
- Integrated high-end functionality: Archives, VB scripts and various viewers for plant documentation display – e.g. as PDF or in the form of Internet websites as standard
- 100 % data security
- Easy commissioning, rapid service
- Integrated system diagnostics
- Cross-sector and cross-regional applicability
- Multiple interfaces for process communication
- Integrated PROFINET switch from 7"

Migration made easy

Opt for SIMATIC HMI systems of the latest generation to make your HMI applications even more efficient.

Further information:

www.siemens.com/panel-innovation

Find out more

www.siemens.com/comfort-panels

SIMATIC HMI Comfort Panel Starter Kits

www.siemens.com/comfort-panels-starter-kits

Comfort
Panels

SIMATIC HMI Basic Panels 2nd Generation

Cost-efficient, high-resolution
visualization solutions



Improved process quality

Visualization allows for considerably increased process quality with compact plants or smaller applications. Featuring all important HMI basic functions, SIMATIC HMI Basic Panels 2nd Generation thus open up completely new possibilities in terms of operation and monitoring also in the field of mechanical engineering at a particularly attractive price.

High-resolution wide-screen displays

SIMATIC HMI Basic Panels 2nd Generation are available with high-resolution wide-screen displays from 4" to 12". These also support vertical configuration. Their high resolution and color depth of 64,000 colors facilitate improved process visualization. The displays' brightness is dimmable up to 100 %, offering optimum flexibility.

Innovative graphical user interface

The new innovative user interface provides a great variety in terms of experiencing and operation. The new SIMATIC HMI Basic Panels feature user-friendly touch screens and particularly handy, freely configurable keys.

Improved usability

The new USB interface facilitates the connection of keyboard, mouse or barcode scanner and supports easy data archiving on a USB stick

Perfect interaction

Thanks to a PROFIBUS or PROFINET interface, SIMATIC HMI Basic Panels 2nd Generation allow for connection with various PLCs. The visualization of applications of the modular compact controller SIMATIC S7-1200 offers particularly great added value.

Highlights

- Ideal entry-level range for simple HMI applications
- Installation compatibility with SIMATIC HMI Comfort Panels and existing SIMATIC HMI Basic Panels 4" and 6"
- Flexible scalability within the HMI range
- High-resolution, dimmable wide-screen displays with 64.000 colors
- Innovative user interface and improved usability thanks to new controls and graphics
- Touch / key functionality for intuitive operation
- Interface for connection with various PLCs
- Versions for PROFIBUS or PROFINET
- Archiving via USB stick
- Engineered in the TIA Portal

Find out more

www.siemens.com/basic-panels

Basic
Panels

SIMATIC HMI Mobile Panels

Maximum mobility for
operation and monitoring



Irrespective of sector or application: Mobile operator panels offer decisive advantages when mobility is required for the on-site operation and monitoring of machines and plants.

Innovation by the world market leader

The SIMATIC HMI Mobile Panel 277 IWLAN represents a rugged, wireless operator panel with full HMI and optional safety functionality. It is available in different versions and combines maximum flexibility for mobile operation and monitoring, Industrial Wireless LAN (IWLAN) and integrated safety together with the SIMATIC fail-safe controllers. Safety Category SIL 3 or Performance Level PL e can be attained with the fail-safe Mobile Panels.

High user friendliness and resistance

The Mobile Panels with all-round protection against dust and splash water (IP65) are light and compact and can be effortlessly operated over prolonged periods both by right and left handers. Alternatively, they are also available with a wall mount. They are extremely shock-resistant thanks to their double-walled design and round enclosure form – and for example withstand falls from over one meter. A “protective collar” prevents unintended operation of the STOP button.

Elaborate down to the detail

The Mobile Panels can be configured for alternation of the corresponding user interface according to connection point. Machine-specific HMI authorizations or actions can be realized independently of the selected connection point via the connection box ID. PROFINET connection boxes can be connected in series via integrated switches.

Sophisticated safety concept

The Mobile Panels allow for the provision of safety functions at any point of the machine or plant. STOP and acknowledgement buttons feature a two-circuit design

in accordance with the safety regulations (EN 60204-1). Safety Category 3 in accordance with EN ISO 13849-1 can thus be attained.

Variable connection to various stations

When using a Mobile Panel with STOP button in combination with the “Plus” connection box, the operator panel can be configured for application on various connection points. The “Plus” connection box is also available as SIPLUS extreme version for demanding ambient conditions (aggressive atmosphere, condensation, etc.).

Further information: www.siemens.com/siplus

Highlights

- Compact, ergonomic and rugged design
- Intuitive operation via membrane keys or touch screen – also with gloves
- High flexibility thanks to easy replugging during ongoing operation
- Connection point detection
- Plugging and unplugging without interruption of the E-STOP circuit (with “Plus” connection box), 1:1 assignment to the machine with “Basic” connection box
- Sophisticated safety concept
- Integrated interfaces (serial, MPI, PROFIBUS or PROFINET / Ethernet)
- Manifold drivers included in scope of supply – also for third-party controllers
- Short device start-up time after docking

Find out more

www.siemens.com/mobile-panels

Mobile
Panels

SIMATIC HMI Key Panels

Innovative operator panels
for up to 60 % time savings
in terms of mounting



The compact SIMATIC HMI Key Panels replace conventional operator panels at a way more cost-favorable price. Thanks to the devices' turnkey pre-assembly, they support time savings of up to 60 % in terms of mounting.

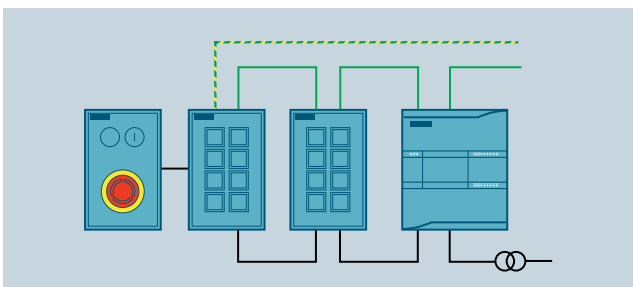
Flexible mounting and service

The devices are dimensioned for direct switchboard installation and can also be mounted to third-party support arm and stand systems as a standard by means of flexible mechanics. This supports their optimum use on machines in any application – for ergonomic operation at various points of plants or production lines.

As power supply and bus cables are directly looped through on the Key Panel, no separate terminals are required. Furthermore, the F-versions support the direct connection of E-STOP devices or safety-related sensors, which further minimizes the wiring expenditures.

Highlights

- Large mechanical buttons and multi-color LEDs (daylight-readable)
- Maximum flexibility through parameterization options
- Wiring time savings of over 60 % and material cost reductions of over 30 %
- Easy-to-label keys in IP65
- 2 PROFINET ports (incl. switch) for the assembly of line and ring structures
- Integrated digital I/Os on the device's rear for the connection of key switches, indicator lights, etc.
- Direct connection of E-STOP and other fail-safe sensors with F-versions
- Functional compatibility with all standard PROFINET master CPUs (also by third-party manufacturers)



Reduced hardware costs through integrated PROFINET 2-port switch and support of the shared device functionality KP8 or KP8F

Find out more

www.siemens.com/key-panels

Key
Panels

SIMATIC HMI Devices with All-Round Protection

Device versions for
special requirements



Our portfolio of proven SIMATIC HMI operator panels is supplemented by versions with all-round degree of protection IP65 for support arm or stand mounting. The devices are based on standard devices from our portfolio which have been tried-and-tested in countless applications worldwide.

Flexible mounting and service

The devices can be mounted to third-party support arm and stand systems as a standard by means of flexible mechanics. This supports their optimum use on machines in any application – for ergonomic operation at various points of plants or production lines.

The rear panel's easy replaceability, also with device mounting on the machine, ensures outstanding service friendliness – e.g. for subsequent wiring or replacement of memory cards. Moreover, the operator panels can be easily adjusted to various requirements by means of modular expansion units, e.g. by equipping them with plant-specific mechanical pushbuttons or E-STOP devices.

The range's technology is based on existing installation devices

- SIMATIC HMI IPC477C PRO 15" and 19"
- SIMATIC Flat Panel Monitor PRO 15" and 19"
- SIMATIC Thin Client PRO 15"
- SIMATIC MP 377 PRO 15"

Highlights

- Easy support arm or stand mounting
- High service friendliness
- High compactness and low weight
- Easy adjustability and modular expandability, e.g. with SIMATIC HMI Key Panels KP8 and KP8F



SIMATIC Flat Panel Monitor PRO 19" and HMI IPC477C PRO 15" with expansion units, incl. SIMATIC HMI Key Panels

Find out more
www.siemens.com/ip65-hmi-devices

All-Round
Protection

Customized Automation

Matched to your requirements



From minor design changes to OEM solutions, down to turnkey products: Customized products from our SIMATIC portfolio offer you the high quality and functionality of our proven SIMATIC products.

Customized design

Our SIMATIC products can be modified in terms of design to facilitate their seamless adjustment to your individual machine and plant design and your special operating and control philosophy. These design products are fully compatible with the standard products with regard to technology and functionality and are completely integrated in Totally Integrated Automation.

OEM product modifications

We offer special product modifications for our OEM customers (original equipment manufacturers) which support the realization of individual automation solutions which cannot be implemented with standard products or devices with design modifications. For this purpose, we assemble a SIMATIC OEM device from our standard components, customer-specific components and additionally required software function expansions – analogous to a modular system.

Customized turnkey products

These ready-to-install turnkey products are realized exactly according to your specifications to meet your individual technical requirements. They are based on our standard products which are combined and assembled specifically for you. Turnkey products comprise all wiring, connections, enclosure solutions and suitable automation components, including the required software filling with customer-specific images.

Sector products for typical applications

Customized SIMATIC products can be equipped with additional characteristics for application in special industrial sectors.

- Renewable energies
- Automotive industry
- General mechanical engineering
- Food, beverages and tobacco industry / pharmaceutical industry
- Oil and gas / chemical industry and shipbuilding

Highlights

Time savings

- You benefit from our comprehensive customization know-how and our long-standing experience.
- You need not acquire any additional know-how and can fully concentrate on your own core competencies.

Increased profitability

- You benefit from the hardware modifications' flexible combinability on the basis of standards, which makes customized solutions attractive in terms of costs even for small quantities.
- You determine the optimum cost-performance ratio for you by specifying the customization type and scope.

Strengthened competitive advantage

- You rely on SIMATIC products which comply with the strictest quality standards, offer optimum performance and thus ensure maximized productivity and minimum downtimes.
- You are provided with customized products which can be excellently integrated in Totally Integrated Automation.

Find out more

www.siemens.com/customized-automation

Customized
Automation

SIMATIC WinCC (TIA Portal)

One engineering tool
for all HMI panels



WinCC (TIA Portal) is the software for all HMI applications – from simple operation solutions with Basic Panels, down to process visualizations on PC-based multi-user systems.

Maximum configuration efficiency

WinCC (TIA Portal) facilitates the use of device-independent configuration data on various target systems without conversion. The interface adjusts itself to the functional properties of the target device. Joint project data (alarm class, project texts, etc.) are centrally managed in the TIA Portal and can be used across different devices. Furthermore, an assistant for HMI configurations is available independently of the device which supports the rapid and easy creation of the visualization's basic structure.

Image editor for efficient and fast image configuration

- Generation of interlinked image objects via drag & drop, e.g. tags for the generation of input/output fields with process connection
- Definition of image templates and functions
- Layer technology with up to 32 layers

Object-oriented data management

- Comfortable search and change options
- Configuration of messages and archives directly on the HMI tags, no alternation between various editors
- Cross-reference list with direct access to all objects, e.g. for changes or selection

Libraries for configuration objects

- Archiving of all configuration objects – whether pre-defined or user-defined – in the library, e.g. of blocks as well as complete images or tags
- Faceplates can be compiled from simple image objects in a customer- and project-specific manner; faceplate changes can be effected centrally via the block definition

Test and commissioning support

- Simulation of HMI projects on the engineering PC
- Marking of incomplete or faulty configurations directly in the respective editor
- Jump to the fault cause on the basis of the compiler's messages

Migration of existing HMI projects

- Complete data import from projects created in WinCC flexible

Find out more
www.siemens.com/wincc-tia-portal

SIMATIC
WinCC

Find out more:

siemens.com/hmi

SIMATIC
HMI Panels –
take a look



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SIMATIC
Apps –
simply
clever



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TIA Portal

SIMATIC HMI Panels

Technical Data




siemens.com/hmi



Intuitive, efficient, proven:
TIA Portal redefines engineering.

Answers for industry.

Technology Overview

Key Panels			
The innovative operator panels			
			
	KP8 PN	KP8F PN	KP32F PN
Operating mode			
Function keys (programmable)	8	8	32
Output type			
Color modes for LED	5 (green, red, yellow, blue, white)		
Typical service life			
Short-stroke keys (in switching cycles)	1,500,000		
LEDs (ON period in %)	100 %		
Interfaces			
Digital inputs / outputs ¹⁾	8	8	16
Fail-safe inputs SIL2 / SIL3	- / -	2 / 1	4 / 2
PROFINET	2	2	2
Functionality			
Key and lamp test	•		
Degree of protection			
Front / rear	IP65 / IP20		
Connection to controller			
SIMATIC S7, WinAC	S7-1200 S7-1500 S7-300 S7-400	S7-1200 ⁴⁾ S7-1500 ⁴⁾ S7-300 (F) S7-400 (F)	
SIMATIC S5	•		
PLC	•		
SINUMERIK	•		
SIMOTION	•		
Engineering software			
Configuration	STEP 7 V5.5 or STEP 7 Basic V11 or higher		
Ambient conditions			
Installation position	portrait or landscape		
Max. permissible tilt angle without forced ventilation (in °)	+ / - 30		
Max. relative humidity (in %)	< 90		
Temperature			
Operation (vertical installation) in °C	0 ... +55		
Operation (max. tilt angle) in °C	0 ... +45		
Dimensions			
Enclosure front (W x H in mm)	98 x 155	98 x 155	295 x 155
Installation cutout / device depth (W x H / D in mm)	68 x 129 / 49	68 x 129 / 49	275 x 135 / 39
Order No.²⁾	6AV3688-3AY36-0AX0	6AV3688-3AF37-0AX0	6AV3688-3EH47-0AX0








Type of operation
Display
Size (in inches)
Resolution (W x H in pixels)
MTBF ¹⁰⁾ of backlight (in h)
Front dimensions (in mm)
Control elements
Function keys (programmable) / system keys
Usable memory
User memory
Memory for options / recipes ⁷⁾
Message buffer
Interfaces
Serial / MPI / PROFIBUS DP / PROFINET (Ethernet)
USB host / USB device
Slot for CF / multimedia / SD
Functionality (when configured with WinCC TIA Portal)
Alarm logging (number of alarms / alarm classes)
Process screens
Tags
Vector graphics
Bar graphs / curve diagrams
Faceplates
Recipes
Archiving / Visual Basic Scripts
Programming device functions
Connection to controller
SIMATIC S7 / SIMATIC WinAC
SIMATIC S5 / SIMATIC 505
SINUMERIK / SIMOTION
Allen Bradley / Mitsubishi
Modicon / Omron
Engineering software
Configuration
Options, applications
Sm@rtServer / Audit / Logon
OPC Server / Internet Explorer
Order No.^{*)}

^{*)} Current ordering data as well as terms of sale and delivery are listed in the catalog ST 80 / ST PC and on the Internet at www.siemens.com/industrymall

¹⁾ Freely configurable, ²⁾ Device version

Basic Panels

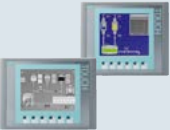






Cost-efficient operation and monitoring of simple applications






2 nd Generation	2 nd Generation	2 nd Generation	2 nd Generation			
						
KTP400 Basic PN	KTP700 Basic DP KTP700 Basic PN	KTP900 Basic PN	KTP1200 Basic DP KTP1200 Basic PN	KP300 Basic mono PN	KTP400 Basic mono PN	KTP400 Basic color PN KP400 Basic color PN
4" touch + key	7" touch + key	9" touch + key	12" touch + key	3.6" key	4" touch + key	4" touch + key 4" key
TFT liquid crystal display (LCD), 65536 colors	TFT liquid crystal display (LCD), 65536 colors	TFT liquid crystal display (LCD), 65536 colors	TFT liquid crystal display (LCD), 65536 colors	FSTN-LCD monochrome	STN liquid crystal display (LCD), 4 gray scales	TFT liquid crystal display (LCD), 256 colors
4.3"	7"	9"	12"	3.6"	3.8"	4.3"
480 x 272	800 x 480	800 x 480	1,280 x 800	240 x 80	320 x 240	480 x 272
20,000	20,000	20,000	20,000	50,000	30,000	50,000
141 x 116	214 x 158	267 x 182	330 x 245	165 x 97	140 x 116	140 x 116 150 x 186
touch screen and tactile keys	touch screen and tactile keys	touch screen and tactile keys	touch screen and tactile keys	membrane keypad	touch screen and tactile keys	touch screen and tactile keys membrane keypad
4 / -	8 / -	8 / -	10 / -	10 / 10	4 / -	4 / - 8 / 26
10 MByte	10 MByte	10 MByte	10 MByte	1 MByte	1 MByte	1 MByte
- / 256 KByte	- / 256 KByte	- / 256 KByte	- / 256 KByte	- / 40 KByte	- / 40 KByte	- / 40 KByte
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1,000 / 32	1,000 / 32	1,000 / 32	1,000 / 32	200 / 32	200 / 32	200 / 32
100	100	100	100	50	50	50
800	800	800	800	250	250	500
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WinCC Basic V13 or higher	WinCC Basic V13 or higher	WinCC Basic V13 or higher	WinCC Basic V13 or higher	WinCC Basic V11 or higher	WinCC Basic V10.5, WinCC flex. Compact or higher	WinCC Basic V11 or higher
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6AV2123-2DB03-0AX0	6AV2123-2GA03-0AX0 6AV2123-2GB03-0AX0	6AV2123-2JB03-0AX0	6AV2123-2MA03-0AX0 6AV2123-2MB03-0AX0	6AV6647-0AH11-3AX0	6AV6647-0AA11-3AX0	6AV6647-0AK11-3AX0 6AV6647-0AJ11-3AX0

³⁾ Device version DP, ⁴⁾ F-safety if supported by CPUs, ⁵⁾ RS232 with adapter, ⁶⁾ Only via PROFIBUS DP, ⁷⁾ Integrated flash, expandable via memory card, ⁸⁾ Configuration with WinCC flexible

Comfort Panels

High-end functionality for demanding

			High-end functionality for demanding			
						
KTP600 Basic mono PN KTP600 Basic color DP/PN	KTP1000 Basic color DP/PN	TP1500 Basic color PN	KTP400 Comfort KP400 Comfort	TP700 Comfort KP700 Comfort	TP900 Comfort KP900 Comfort	TP1200 Comfort KP1200 Comfort
6" touch + key	10" touch + key	15" touch	4" touch + key 4" key	7" touch 7" key	9" touch 9" key	12" touch 12" key
STN liquid crystal display (LCD), 4 gray levels / TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 256 colors	wide-screen TFT, 16 million colors, LED backlight			
5.7"	10.4"	15.1"	4.3"	7"	9"	12.1"
320 x 240	640 x 480	1,024 x 768	480 x 272	800 x 480	800 x 480	1,280 x 800
50,000	50,000	50,000	80,000	80,000	80,000	80,000
214 x 158	335 x 275	400 x 310	140 x 116 152 x 188	214 x 158 308 x 204	274 x 190 362 x 230	330 x 241 454 x 289
touch screen and tactile keys	touch screen and tactile keys	touch screen	touch screen or membrane keypad	touch screen or membrane keypad	touch screen or membrane keypad	touch screen or membrane keypad
6/-	8/-	-/-	4 (with LED) / - 8 (with LED) / •	- / - 24 (with LED) / •	- / - 26 (with LED) / •	- / - 34 (with LED) / •
1 MByte	2 MByte	2 MByte	4 MByte	12 MByte	12 MByte	12 MByte
-/40 KByte	-/40 KByte	-/40 KByte	4 MByte/512 KByte	12 MByte/2 MByte	12 MByte/2 MByte	12 MByte/2 MByte
•	•	•	•	•	•	•
4 tactile keys						
- / - / • / - or - / - / - / •	- / - / • / - or - / - / - / •	- / - / - / •	• ⁵⁾ / • / • / 1	• ⁵⁾ / • / • / 2	• ⁵⁾ / • / • / 2	• ⁵⁾ / • / • / 2
-	-	-	1/1	2/1	2/1	2/1
- / - / -	- / - / -	- / - / -	- / • / •	- / • / •	- / • / •	- / • / •
200/32	200/32	200/32	2,000/32	4,000/32	4,000/32	4,000/32
50	50	50	500	500	500	500
500	500	500	1,024	2,048	2,048	2,048
•	•	•	•	•	•	•
• / •	• / •	• / •	• / f(t), f(x)	• / f(t), f(x)	• / f(t), f(x)	• / f(t), f(x)
-	-	-	•	•	•	•
5	5	5	100	300	300	300
- / -	- / -	- / -	• / •	• / •	• / •	• / •
-	-	-	STATUS / CONTROL, diagnostics viewer	STATUS / CONTROL, diagnostics viewer	STATUS / CONTROL, diagnostics viewer	STATUS / CONTROL, diagnostics viewer
• / •	• / •	• / •	• / •	• / •	• / •	• / •
- / -	- / -	- / -	- / -	- / -	- / -	- / -
- / -	- / -	- / -	- / -	- / -	- / -	- / -
• / •	• / •	• / •	• / •	• / •	• / •	• / •
• / -	• / •	• / -	• / •	• / •	• / •	• / •
• / • or • / -	• / -	• / -	• / •	• / •	• / •	• / •
WinCC Basic V10.5, WinCC Basic V11, WinCC flex. Compact or higher	WinCC Basic V11, WinCC flex. Compact or higher	WinCC Basic V10.5, WinCC flex. Compact or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher
- / - / -	- / - / -	- / - / -	• / • / •	• / • / •	• / • / •	• / • / •
- / -	- / -	- / -	• / •	• / •	• / •	• / •
6AV6647-0AB11-3AX0 6AV6647-0AC11-3AX0 6AV6647-0AD11-3AX0	6AV6647-0AE11-3AX0 6AV6647-0AF11-3AX0	6AV6647-0AG11-3AX0	6AV2124-2DC01-0AX0 6AV2124-1DC01-0AX0	6AV2124-0GC01-0AX0 6AV2124-1GC01-0AX0	6AV2124-0JC01-0AX0 6AV2124-1JC01-0AX0	6AV2124-0MC01-0AX0 6AV2124-1MC01-0AX0

HMI tasks			Mobile Panels			
			Maximum mobility for operation and monitoring			
						
TP1500 Comfort KP1500 Comfort	TP1900 Comfort	TP2200 Comfort	Mobile Panel 177	Mobile Panel 277	Mobile Panel 277 (F) IWLAN V2	Mobile Panel 277
15" touch 15" key	19" touch	22" touch	6" touch + key	8" touch + key	8" touch + key	10" touch
			STN liquid crystal display (LCD), 256 colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors	TFT liquid crystal display (LCD), 64K colors
15.4"	18.5"	21.5"	5.7"	7.5"	7.5"	10.4"
1,280 x 800	1,366 x 768	1,920 x 1,080	320 x 240	640 x 480	640 x 480	800 x 600
80,000	50,000	30,000	50,000	50,000	50,000	50,000
415 x 310 483 x 310	483 x 337	560 x 380	diameter 245	diameter 290	diameter 290	diameter 350
touch screen or membrane keypad	touch screen	touch screen	touch screen or membrane keypad	touch screen or membrane keypad	touch screen or membrane keypad	touch screen
- / - 36 (with LED) / •	- / -	- / -	14 / -	18 / -	18 / -	- / -
24 MByte	24 MByte	24 MByte	2 MByte	6 MByte	6 MByte	6 MByte
24 MByte / 4 MByte	24 MByte / 4 MByte	24 MByte / 4 MByte	- / 32 KByte	1,024 KByte / 64 KByte	1,024 KByte / 64 KByte	1,024 KByte / 64 KByte
•	•	•	•	•	•	•
• ⁵⁾ / • / • / 3	• ⁵⁾ / • / • / 3	• ⁵⁾ / • / • / 3	• / • ³⁾ / • ³⁾ / • ²⁾	• / • / • / •	- / - / - / (• via IWLAN)	• / • / • / •
2 / 1	2 / 1	2 / 1	- / -	• / -	• / -	• / -
- / • / •	- / • / •	- / • / •	- / • / -	- / • / •	- / • / •	- / • / •
6,000 / 32	6,000 / 32	6,000 / 32	2,000 / 32	4,000 / 32	4,000 / 32	4,000 / 32
750	750	750	500	500	500	500
4,096	4,096	4,096	1,024	2,048	2,048	2,048
•	•	•	•	•	•	•
• / f(t), f(x)	• / f(t), f(x)	• / f(t), f(x)	• / • f(t)	• / • f(t)	• / • f(t)	• / • f(t)
•	•	•	-	•	•	•
500	500	500	100	300	300	300
• / •	• / •	• / •	- / -	• / •	• / •	• / •
STATUS / CONTROL, diagnostics viewer	STATUS / CONTROL, diagnostics viewer	STATUS / CONTROL, diagnostics viewer	STATUS / CONTROL	STATUS / CONTROL	STATUS / CONTROL	STATUS / CONTROL
• / •	• / •	• / •	• / •	• / •	• / •	• / •
- / -	- / -	- / -	• ³⁾ / • ³⁾ / • ³⁾	• ⁶⁾ / •	-	• ⁶⁾ / •
- / -	- / -	- / -	• / •	• / •	- / • (not safety version)	• / •
• / •	• / •	• / •	• ³⁾ / • ³⁾	• / •	- / -	• / •
• / •	• / •	• / •	• ³⁾ / • ³⁾	• / •	- / -	• / •
WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11 or higher	WinCC Comfort V11, WinCC flexible Compact Standard, Advanced or higher	WinCC Comfort V11, WinCC flexible Standard, Advanced or higher	WinCC Comfort V11, WinCC flexible Standard, Advanced or higher	WinCC Comfort V11, WinCC flexible Standard or higher
• / • / •	• / • / •	• / • / •	• ²⁾ / - / •	• / • / •	• / • / - ⁹⁾	• / - / -
• / •	• / •	• / •	- / -	• / •	• / •	• / •
6AV2124-0QC02-0AX0 6AV2124-1QC02-0AX0	6AV2124-0UC02-0AX0	6AV2124-0XC02-0AX0	6AV6645-0AA01-0AX0 6AV6645-0BA01-0AX0	6AV6645-0CA01-0AX0	6AV6645-0..01-0AX1	6AV6645-0BE02-0AX0