

SIMATIC IPC277E



SIMATIC IPC277E: The Panel PC with optimized performance – maintenance-free and compact with displays from 7"

The SIMATIC IPC277E Nanopanel PC is a flexible embedded industrial PC with rugged and durable displays.

Technologically it is based on the IPC227E Nanobox PC and thus offers maximum industrial functionality for flexible use even under harsh conditions - all without the need for maintenance.

The Panel PC is characterized by modern interfaces and a high degree of flexibility in the selection of the display. The latest Intel Dual-Core and Quad-Core processors ensure excellent performance here for visualization and control tasks.

Offers great flexibility in the selection of rugged widescreen fronts

- 7" ... 19" widescreen displays with high resolution and wide viewing angles
- 12" – 19" displays with multi-touch operation
- Fully dimmable displays reduce energy consumption and increase service life

High degree of ruggedness for maintenance-free continuous operation

- Maximum industrial functionality thanks to IP65 front and high electromagnetic compatibility
- Backup of important system data thanks to non-volatile retentive memory (NVRAM, optional)
- Designed for continuous operation at ambient temperatures up to 50 °C and high vibration/shock requirements
- Maintenance-free operation – without fans (operation without battery possible)

Optimized for visualization tasks with additional functionality

- High-performance and energy-saving dual-core and quad-core Intel Celeron processors
- Diverse interfaces and configuration options (USB 3.0, 2 x Gbit Ethernet, RS232/RS485/RS422, SSD/CFast)
- Front USB for easy data exchange (15" / 19") single-touch

High investment security in order to reduce engineering costs

- Long-term availability: Service & support period up to 11 years
- Ideal platform for SIMATIC Software Controller and/or WinCC RT Advanced
- Simple integration into automation solutions with the TIA Portal and on-board PROFINET interfaces

The SIMATIC IPC277E Nanopanel PC is a compact unit comprising an operator control unit with an integrated computing unit.

Computing unit:

- Isolated power supply: 24 V DC (19.2 to 28.8 V)
- Additional graphics connection display port:
 - Resolution: up to 2 560 x 1 600 pixels
- Interfaces (accessible from one side):
 - 2 x LAN 10/100/1 000 Mbps Ethernet interface (RJ45)
 - 1 x USB V3.0, 3 x USB V2.0 (7"/9": 2 x USB V2.0)
 - 1 x COM1 (RS232 / RS485 / RS422, switchable in the BIOS)
- Field bus
 - PROFINET Realtime via Standard Ethernet interface

Design versions

- Processor / main memory configuration:
 - Intel Celeron N2807, 1.58 GHz, Dual Core
 - Intel Celeron N2930, 1.83 GHz, Quad Core
 - respectively without/with trusted platform module TPM V2.0
- Main memory configuration:
 - 2 GB, 4 GB or 8 GB RAM
- Retentive memory
 - 512 KB retentive memory (NVRAM), of which 128 KB can be written within the buffer time (optional)
- Drives:
 - CFAST drive (replaceable, accessible):
2 GB, 4 GB, 8 GB, 16 GB, 30 GB or
 - Solid-state drive 80 GB, 2.5" or
 - Solid-state drive 240 GB, 2.5" or
 - Solid-state drive 480 GB, 2.5"
- Preinstalled operating systems:
 - Windows Embedded Standard 7 E / P, 32-bit or 64-bit
 - Windows 7 Ultimate, Multi-Language, 32-bit or 64-bit
 - Windows 10 IoT Enterprise LTSB 2016, MUI, 64-bit

Components of the operator control unit:

The operator control units are available in the following versions:

- 7" Touch: 7" TFT color display, 800 x 480 pixels, resistive analog Touchscreen
- 9" Touch: 9" TFT color display, 800 x 480 pixels, resistive analog Touchscreen
- 12" Touch: 12" TFT color display, 1 280 x 800 pixels, resistive analog Touchscreen
- 15" Touch: 5" TFT color display, 1 280 x 800 pixels, resistive analog Touchscreen with front USB port
- 19" Touch: 19" TFT color display, 1 366 x 768 pixels, resistive analog Touchscreen with front USB port
- 12" Multitouch: 12" TFT-Farbdisplay, 1 280 x 800 Pixel, multitouch screen
- 15" Multitouch: 15" TFT-Farbdisplay, 1 366 x 768 Pixel, multitouch screen
- 19" Multitouch: 19" TFT-Farbdisplay, 1 366 x 768 Pixel, multitouch screen

Integrated diagnostics DiagBase

Integrated, parameterizable monitoring functions (program execution / watchdog, internal enclosure temperature, mass storage).

Technical specifications SIMATIC IPC277E

Installation type/mounting	
Design	Panel PC, built-in unit
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	Intel Celeron N2807 / N2930
Drives	
SSD	Yes; ≥ 80 GB optional
Memory	
Type of memory	DDR3L
Main memory	2 / 4 / 8 GB
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	512 KB; 128 KB can be stored in the buffer time; optional
Interfaces	
serial interfaces	1x COM (RS 232 / 422 / 485), selectable in BIOS
USB port	1x USB 3.0 / 3x USB 2.0 (7"/9": 2x USB 2.0)
Connection for keyboard/mouse	USB / USB
Video interfaces	
Graphics interface	1x DisplayPort
Industrial Ethernet	
Industrial Ethernet interface	onboard, 2 x 10/100/1000 Mbit, RJ45, no plug-in card necessary
• 100 Mbit/s	• Yes
• 1000 Mbit/s	• Yes

Monitoring functions	
Temperature	Yes
Watchdog	Yes
Status LEDs	No
Fan	No
Monitoring function via network	optional
EMC	
Interference immunity against discharge of static electricity	
Interference immunity against discharge of static electricity	<ul style="list-style-type: none"> • ±6 kV contact discharge according to IEC 61000-4-2; • ±8 kV air discharge according to IEC 61000-4-2
Interference immunity to cable-borne interference	
Interference immunity on supply cables	<ul style="list-style-type: none"> • ±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 > 30 m	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
Interference immunity on signal cables < 30 m	<ul style="list-style-type: none"> • ±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 against high-frequency electromagnetic fields	
Interference immunity against high-frequency radiation	<ul style="list-style-type: none"> • 10 V/m, 80 to 2 GHz, 80 % AM acc. to IEC 61000-4-3; • 3 V/m, 2 to 2.7 GHz, 80 % AM acc. to IEC 61000-4-3; • 10 V, 10 KHz ... 80 MHz, 80 % AM acc. to IEC 61000-4-6
Interference immunity to magnetic fields	
Interference immunity to magnetic fields at 50 Hz	100 A/m; acc. 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	
IP front/rear	IP65/IP20

Standards, approvals, certificates	
Approval	CE (industry), UL, cULus
CE mark	Yes
UL approval (UL 508)	Yes
cULus	Yes
RCM (former C-TICK)	Yes
KC approval	Yes
FCC	Yes
EMC	CE, EN 61000-6-4:2007, EN 61000-6-2:2005
Ambient conditions	
Ambient temperature	
• during operation	0 °C / 50 °C; 19": max. 45 °C
• during storage/transportation min. / max.	-20 °C / 60 °C
Relative humidity	Tested acc. to IEC 60068-2-78, IEC 60068-2-30: operation: 5 % to 85 % at 30 °C (no condensation), storage/transportation: 5 % to 95 % at 25 / 55 °C (no condensation)
Vibrations	
Vibration load in operation acc. to IEC 60068-2-6	Tested acc. to IEC 60068-2-6: 5 Hz to 8,4 Hz: 3.5 mm; 8,4 Hz to 500 Hz: 9.8 m/s ²
Shock testing	
Shock load during operation	Tested acc. to IEC 60068-2-27: 50 m/s ² , 30 ms
Operating systems	
Operating systems	<ul style="list-style-type: none"> • Windows 7 Ultimate (multi language) 32 bits / 64 bits • Windows Embedded Standard 7 E/P 32 bits / 64 bits
operating system pre-installed	<ul style="list-style-type: none"> • Windows 7 Ultimate 32 bits / 64 bits • Windows 10 IoT Enterprise LTSC 2016 64 bits, MUI
Software	
SIMATIC Software	Optional package with SIMATIC WinCC or WinAC RTX

SIMATIC IPC – the more Industrial PC	
More information on SIMATIC IPC is available at:	www.siemens.com/simatic-ipc
A current overview of the configurations is provided by the SIMATIC IPC Online-Konfigurator:	www.siemens.com/ipc-configurator
In-depth information is available in the SIMATIC manuals:	www.siemens.com/simatic-doku
Information material for download:	www.siemens.com/simatic/printmaterial
Technical documentation is available in our Service& Support portal:	www.siemens.com/automation/support
Your personal contact partner is listed at:	www.siemens.com/automation/partner
Electronic ordering via the Internet with the Mall:	www.siemens.com/industrymall
Additional information on PC-based Automation with SIMATIC is available under:	www.siemens.com/pc-based-automation
Additional information on the TIA Portal:	www.siemens.com/tia-portal
Additional information on SIMATIC Safety Integrated:	www.siemens.com/f-cpu