PC-based Automation
Industrial PC
Rack PC

SIMATIC IPC847D

Overview

SIMATIC IPC847D

The SIMATIC IPC847D is an extremely robust, high-performance industrial PC in 19" rack design (4 U) with excellent industrial functionality.

It offers:

- Maximum expandability
- Extreme ruggedness
- Intel® Core® i / Xeon technology 4th generation

Technical specifications

Article number	6AG4114-2....-....
	SIMATIC IPC847D (Rack PC)
Installation type/mounting	
Mounting	For horizontal and vertical installation; prepared for telescopic rails; 19" mounting bracket can be removed externally; tower kit (optional)
Design	Rack PC, 19", 4U
Supply voltage	
Type of supply voltage	100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC; optional 100/240 V AC with UPS functionality incl. maintenance-free lead-tin battery
Line frequency	
• Rated value 50 Hz	Yes
• Rated value 60 Hz	Yes
Mains buffering	
• Mains/voltage failure stored energy time	20 ms
Processor	
Processor type	Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache); Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache); Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache); Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache)
Chipset	Intel DH82C226 PCH
Graphic	
Graphics controller	Onboard graphics controller Intel HD 4600 Graphics integrated into the processor / PCI-Express graphics card (Dual Head: 2x VGA or 2x DVI-D) in the PCIe (x16) slot (optional)
Drives	
Optical drives	DVD±R/RW (SlimLine)
Hard disk	500 GB HDD, 1 TB HDD, 2x 1 TB HDD, RAID1 (2x 1 TB HDD, mirror disks), RAID1 (2x 1 TB HDD, mirror disks) + 1x 1 TB HDD as hot spare, RAID5 (3x 1 TB HDD, striping with parity), RAID5 (3x 1 TB HDD, striping with parity) + 1x 1 TB HDD as hot spare; RAID1 (2x 1 TB HDD SAS, mirror disks), RAID5 (3x 1 TB HDD SAS, striping with parity), RAID5 (3x 1 TB HDD SAS, striping with parity) + 1x 1 TB HDD SAS as hot spare incl. PCIe (x8) RAID SAS controller incl. ZMCP module
SSD	Yes; 240 GB SSD; RAID1 (2x 240 GB SSD, mirror disks)
Slot for drives	Mounted internally on the fixed hard disk support, or mounted internally in vibration/shock-absorbing hard disk support, or mounted at the front in the low-profile removable drive bay (hot-swap in RAID configurations)

◼ Technical specifications (continued)

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Memory	
Main memory	2 GB to 32 GB DDR3 1600 DIMM, ECC optional
Hardware configuration	
Slots	
• free slots	11 slots: 7x PCI, 3x PCIe (x4) (1 lane), 1x PCIe (x16) or 3x PCI, 5x PCIe mech. (x16) (4x 4 lanes, 1x 8 lanes), 3x PCIe (x4); all modules to a length of 312 mm can be used
Interfaces	
Interfaces/bus type	1x COM1, 1x COM2 (optional), 1x LPT (optional), 2x DisplayPort, 1x DVI-I, 2x PS/2, audio (Microphone In, Line Out), 7x USB, 2x Gigabit Ethernet, PROFIBUS or PROFINET optional
PROFIBUS/MPI	Optionally onboard, isolated, max. 12 Mbit/s, no plug-in card necessary, CP 5622-compatible
USB port	2x USB 3.0, 2x USB 2.0 rear, 1x USB 3.0, 1x USB 2.0 front, 1x USB 3.0 internal
Connection for keyboard/mouse	2x PS/2
serial interface	COM1: 1x RS 232, COM2 (optional): 1x RS 232
parallel interface	optional LPT1
Multimedia	
• Audio In/Out	Yes
• Microphone In	Yes
Video interfaces	
• Graphics interface	2x DisplayPort and 1x DVI-I onboard; 1x VGA via DVI-VGA adapter cable (optional); graphics card PCIe (x16), Dual Head (2x VGA or 2x DVI-D), 1 GB graphics memory (optional)
Industrial Ethernet	
• Industrial Ethernet interface	2x Ethernet (RJ45)
- 100 Mbps	Yes
- 1000 Mbps	Yes
Integrated Functions	
Monitoring functions	
• Temperature monitoring	Yes
• Watchdog	Yes
• Status LEDs	POWER, ETHERNET 1, ETHERNET 2, PN | MPI / DP, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM, HDD2 ALARM, HDD | HDD3 ALARM
• Fan	Yes
• Monitoring function via network	Optional

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	SIMATIC IPC847D (Rack PC)
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 - 1000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4-6
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 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-2 Class D, EN 61000-3-3
Degree and class of protection	
IP (at the front)	IP41
IP (rear)	IP20

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Technical specifications (continued)

Article number	6AG4114-2....-....
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Standards, approvals, certificates	
Approval	CE, cULus 60950, KCC
CE mark	Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)
CSA approval	Yes; Included in cULus
UL approval	Yes
cULus	Yes; UL 60950-1, file number E115352
RCM (formerly C-TICK)	Yes
KC approval	Yes
EAC (formerly Gost-R)	Yes
EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
Ambient conditions	
Ambient temperature during operation	
• Ambient temperature during operation	0 °C to +45 °C, no burner operation, 0 °C to +50 °C, no operation of optical drive, power dissipation of the expansion cards in total < 30 W, maximum 3 removable drive bays, 0 °C to +40 °C with AC UPS, 0 °C to +35 °C with hardware RAID controller
Relative humidity	
• Relative humidity	Tested according to IEC 60068-2-78, IEC 60068-2-30: Operation: 5% to 80% at 25 °C (no condensation), Storage: 5% to 95% at 25 °C (no condensation)
Vibrations	
• Vibration resistance during operation acc. to IEC 60068-2-6	Tested according to DIN IEC 60068-2-6: 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s² (0.5 g)
Shock testing	
• Shock load during operation	Tested according to IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s² (5 g), 30 ms, 100 shocks per axis

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Operating systems	
Operating system	Windows 7 Ultimate, multi-language (32-bit/64-bit), Windows 10 Enterprise 2015 LTSB, multi-language (64-bit), Windows 10 Enterprise 2016 LTSB, multi-language (64-bit), Windows Server 2008 R2 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2012 R2 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit)
pre-installed operating system	Yes
Additional info on operating system	Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian)
without operating system	Yes
Software	
SIMATIC Software	Optionally in package with SIMATIC WinCC or WinCC flexible
Dimensions	
Width	430 mm
Height	177 mm; 4U
Depth	444 mm

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■ **Ordering data**   **Article No.**   **Article No.**

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Interfaces: RACK PC, 19", 4 U Interfaces: 2 x GBIT LAN (RJ45); 1 x DVI-I; 2 x DisplayPort; 1 x COM; 2 x PS/2; audio; 2 x USB 3.0, 2 x USB 2.0 at rear; 1 x USB 3.0, 1 x USB 2.0 at front, 1 x USB 3.0 internal; temperature and fan monitoring, watchdog, card retainer			Drives	
			• 500 GB HDD SATA, internal (0.3 g vibration, 3 g shock)	A
			• 500 GB HDD SATA, internal (0.5 g vibration, 5 g shock)	B
Processor / main board			• 1 TB HDD SATA, internal (0.5 g vibration, 5 g shock)	C
• Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache); mainboard without fieldbus	D		• 2 x 1 TB HDD SATA, internal (0.5 g vibration, 5 g shock)	D
• Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache, VT-x); mainboard with PROFIBUS/ MPI (CP 5622-compatible)	E		• RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks), internal (0.5 g vibration, 5 g shock)	E
• Core i3-4330TE (2C/4T, 2.4 GHz, 4 MB cache); mainboard with PROFINET (3 x RJ45, CP 1616-compatible)	F		• 500 GB HDD SATA in removable drive bay; front	F
• Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache, TB, VT-d, AMT); mainboard without fieldbus	G		• 1 TB HDD SATA in removable drive bay; front	G
• Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/MPI (CP 5622-compatible)	H		• 2 x 1 TB HDD SAT in removable drive bay; front	H
• Core i5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible)	J		• RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks) in removable drive bay, hot-swappable, front;	J
• Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, TB, VT-d, AMT); mainboard without fieldbus	K		• RAID5, 2 TB (3 x 1 TB HDD, SATA, striping with parity) in removable drive bay, hot-swappable, front	K
• Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/MPI (CP 5622-compatible)	L		• RAID5, 2 TB (3 x 1 TB HDD, SATA, striping with parity) in removable drive bay, hot-swappable + 1 TB SATA HDD as hot spare in remov. drive bay, front-mounted	L
• Xeon E3-1268L v3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible)	M		• 240 GB SSD SATA, internal	M
• Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache, TB, VT-d, AMT); mainboard without fieldbus	N		• 240 GB SSD SATA in removable drive bay; front	N
• Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache, TB, VT-x, VT-d, AMT); mainboard with PROFIBUS/MPI (CP 5622-compatible)	P		• RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks), internal (0.5 g vibration, 5 g shock) + 240 GB SSD SATA (for operating system) in removable drive bay	P
• Xeon E3-1275 v3 (4C/8T, 3.5 (3.9) GHz, 8 MB cache, TB, VT-d, AMT); mainboard with PROFINET (3 x RJ45, CP 1616-compatible)	Q		• RAID1, 1 TB (2 x 1 TB HDD, SATA, mirror disks) in removable drive bay, hot swap + 1 TB HDD SATA as hot spare in removable drive bay, front;	Q
			• RAID1, 1 TB (2 x 1 TB HDD SATA, mirror disks) + 240 GB SSD SATA (for operating system) in remov. drive bay, hot-swap; front	R
			• RAID1, 1 TB (2 x 1 TB HDD SAS, mirror disks) in removable drive bay, hot-swappable, front-mount- ed; PCIe x8 RAID controller incl. ZCMP module (2 slots occupied)	S
			• RAID1, 1 TB (2 x 1 TB HDD SAS, mirror disks) in removable drive bay; PCIe x8 RAID controller including ZCMP module (2 slots occupied) + 240 GB SATA HDD (for operating system) in remov. drive bay, front-mounted	T
			• RAID5, 2 TB (3 x 1 TB HDD SAS, striping with parity) in removable drive bay, hot-swappable, front- mounted; PCIe x8 RAID controller including ZCMP module (2 slots occupied)	U
			• RAID5, 2 TB (3 x 1 TB HDD SAS, striping with parity) in removable drive bay, hot-swappable; PCIe x8 RAID controller including ZCMP module (2 slots occupied) + 1 TB SATA HDD as hot-spare in remov. drive bay, front-mounted	V
			• RAID1, 240 GB (2 x 240 GB SSD SATA, mirror disks), in removable drive bay, hot swap, at the front	W

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Memory configuration
- 2 GB DDR3 SDRAM (1 x 2 GB), single channel — **1**
- 4 GB DDR3 SDRAM (2 x 2 GB), dual channel — **2**
- 8 GB DDR3 SDRAM (2 x 4 GB), dual channel — **3**
- 16 GB DDR3 SDRAM (2 x 8 GB), dual channel — **4**
- 32 GB DDR3 SDRAM (4 x 8 GB), dual channel — **5**
- 8 GB DDR3 SDRAM, (2 x 4 GB), ECC, dual channel — **6**
- 16 GB DDR3 SDRAM, (2 x 8 GB), ECC, dual channel — **7**
- 32 GB DDR3 SDRAM, (4 x 8 GB), ECC, dual channel — **8**

Bus module / removable data storage media
- Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; without removable data storage media — **0**
- Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; without removable data storage media — **1**
- Bus module 11-slot: 7 x PCI, 3 x PCIe x4, 1 x PCIe x16; DVD±RW (slim) — **2**
- Bus module 11-slot: 3 x PCI, 3 x PCIe x4, 5 x PCIe x16; DVD±RW (slim) — **3**

Expansion hardware
- Without expansions (hardware), onboard graphics — **0**
- Without expansions (hardware), onboard graphics, DVI-I to VGA adapter for onboard graphics; — **1**
- Serial (COM2) + parallel (LPT) (1 slot reserved), onboard graphics — **2**
- Serial (COM2) + parallel (LPT) (1 slot reserved), onboard graphics, DVI-I to VGA adapter cable for onboard graphics — **3**
- Serial (COM2) + parallel (LPT, 1 slot reserved) + PCIe x16 Graphics Card (Dual-Head: 2 x VGA or 2 x DVI-D), 1 GB, (1 slot occupied) — **4**

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Operating system (pre-installed and activated)
- Windows 7 Ultimate, 32-bit, SP1, MUI (en, de, fr, it, es) — **A**
- Windows 7 Ultimate, 64-bit, SP1, MUI (en, de, fr, it, es) — **B**
- Windows 10 Enterprise 2015, LTSB, 64-bit, MUI (en, de, fr, it, es) — **C**
- Windows 10 Enterprise 2016, LTSB, 64-bit, MUI (en, de, fr, it, es) (for Core i3/i5) — **D**
- Windows 10 Enterprise 2016, LTSB, 64-bit, MUI (en, de, fr, it, es) (for Xeon) — **E**
- Windows Server 2008 R2 Standard Edition, 64-bit SP1 incl. 5 clients, multi-language (en, de, fr, it, es) — **F**
- Windows Server 2012 R2 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit — **G**
- Windows Server 2016 Standard Edition incl. 5 clients, MUI (en, de, fr, it, es), 64-bit language — **H**
- Without operating system — **X**

(Software) / security expansions
- SIMATIC IPC DiagMonitor software enclosed — **A**
- SIMATIC IPC Image Creator software included — **B**
- SIMATIC IPC DiagMonitor and Image Creator software enclosed — **C**
- Without software (software) — **X**
- TPM 1.2 [1] (not for China and Russia) — **Y**

Power supply, with country-specific cable
- 110/240 V AC industrial power supply with NAMUR; power cable for Europe — **0**
- 110/240 V AC industrial power supply with NAMUR; power cable for United Kingdom — **1**
- 110/240 V AC industrial power supply with NAMUR; power cable for Switzerland — **2**
- 110/240 V AC industrial power supply with NAMUR; power cable for the USA — **3**
- 110/240 V AC industrial power supply with NAMUR; power cable for Italy — **4**
- 110/240 V AC industrial power supply with NAMUR; power cable for China — **5**
- 2 x 110/240 V AC redundant power supply; without power cable — **6**
- 110/240 V AC industrial UPS including maintenance-free lead-tin battery; without network cable — **7**
- 110/240 V AC industrial power supply with NAMUR; without power cable — **8**

[1] TPM = Trusted Platform Module

Note:

Please assemble the required IPC configuration using the TIA Selection Tool or the configurator in the Industry Mall in order to ensure suitability; we do not accept any liability for configurations compiled by users themselves.

For an up-to-date overview, see the SIMATIC IPC online configurator at:
http://www.siemens.com/ipc-configurator

■ Ordering data

Accessories	Article No.
Memory expansions	
• 2 GB DDR3 1600 DIMM	**6ES7648-2AJ50-0MA0**
• 4 GB DDR3 1600 DIMM	**6ES7648-2AJ60-0MA0**
• 8 GB DDR3 1600 DIMM	**6ES7648-2AJ70-0MA0**
• 8 GB DDR3 1600 DIMM, ECC	**6ES7648-2AJ70-1MA0**
Hardware accessories	
Tray for low-profile removable drive bay	**6ES7648-0EG01-1BA0**
For 3.5" hard drive (SATA/SAS) and 2.5" SSD (SATA), without drive	
Filter mats	**A5E01064980**
for SIMATIC IPC847D (packing unit: 10 units)	
Adapter cable	
• DisplayPort to DVI-D for onboard graphics	**6ES7648-3AF00-0XA0**
• DisplayPort to VGA for onboard graphics	**6ES7648-3AG00-0XA0**

	Article No.
Power cable, straight, 3 m long	
• Austria, Belgium, Finland, France, Germany, Netherlands, Spain, Sweden	**6ES7900-0AA00-0XA0**
• United Kingdom	**6ES7900-0BA00-0XA0**
• Switzerland	**6ES7900-0CA00-0XA0**
• USA	**6ES7900-0DA00-0XA0**
• Italy	**6ES7900-0EA00-0XA0**
• China	**6ES7900-0FA00-0XA0**
Tower Kit	**6ES7648-1AA00-0XD0**
for converting the computer into an industrial tower PC	
USB retainer	**6ES7648-1AA00-0XK0**
For interlocking the internal USB port	
Expansion components	See Expansion components
Communication products	See Expansion components

Note:

Software Packages with SIMATIC WinCC flexible, WinCC RT Advanced, SIMATIC WinCC, and SIMATIC WinAC RTX (F) can be ordered together with the SIMATIC IPC at a price advantage. More information under "Embedded Bundles/Packages for industrial PCs".

Additional information is available on the Internet at:

http://www.siemens.com/simatic-pc

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