

SIMATIC IPC647E (Rack PC, 19", 2U); 3x Gbit Ethernet (IE/PN), RJ45; 1x DVI-D, 2x displayport, 1x COM1, audio, 4x USB 3.1, 2x USB 3.1 (Typ C) rear side; 2x USB 3.0 front, 1x USB3.1 internally; 1x M.2 Slot internally; temperature and fan monitoring, watchdog; card retainer; Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB cache, TB, VT-D, AMT); Board 4 slots: 2x PCIe x16 (8 L), 1x PCIe x16 (4 L), 1x PCIe x16 (1 L); RAID1, 2x 480 GB SSD 2.5" SATA; Enclosure with drive support Type B (for internal installation/ 0.5 g vibration, 5 g shock); 2x 100/240V AC redundant industrial power supply unit; 16 GB DDR4 SDRAM (2x 8 GB), Dual Channel; Without expansion (HW); Windows10 Enterprise 2016 LTSB, MUI (de, en, fr, it, es), 64-bit (for Core i3/i5); Adapter cable DP acc. to VGA; for onboard graphic; Without power supply cable

Installation type/mounting	
Mounting	For horizontal installation; prepared for telescopic rails; 19" mounting bracket can be removed externally
Design	Rack PC, 19", 2U
Supply voltage	
Type of supply voltage	100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC
Line frequency	
<ul style="list-style-type: none"> <li>Rated value 50 Hz</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Rated value 60 Hz</li> </ul>	Yes
Mains buffering	
<ul style="list-style-type: none"> <li>Mains/voltage failure stored energy time</li> </ul>	20 ms
Processor	
Processor type	Intel Xeon E-2278GE (8C/16T, 3.3 (4.7) GHz, 16 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Core i7-8700 (6C/12T, 3.2 (4.6) GHz, 12 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Core i5-8500 (6C/6T, 3.0 (4.1) GHz, 9 MB Cache, Turbo Boost 2.0, VT-x/-d-Technology, iAMT); Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-x/-d-Technology)
Chipset	Intel C246
Graphic	
Graphics controller	Onboard Intel UHD graphics P630/630 integrated in processor; graphics card NVIDIA Quadro P400 PCIe (x16) triple head (optional)
Drives	

Hard disk	1x 1 TB 3.5" SATA HDD, 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD, RAID1 2x 1 TB 3.5" SATA HDD (Enterprise), RAID1 2x 2 TB 3.5" SATA HDD (Enterprise), RAID1 2x 2 TB 3.5" SAS HDD (Enterprise) with PCIe x8 RAID controller incl. ZMCP module
SSD	Yes; 1x 480 GB 2.5" SATA SSD, 1x 960 GB 2.5" SATA SSD, 2x 480 GB 2.5" SATA SSD, RAID1 2x 480 GB 2.5" SATA SSD; 1x 512 GB M.2 NVMe SSD, 1x 1 024 GB M.2 NVMe SSD
Slot for drives	Mounting internally in vibration/shock-absorbing drive cage Type B or mounting on the front in removable trays (hot swap in RAID configurations) in drive cage Type A; mounting internally on the fixed drive cage optional

## Memory

Main memory	4 GB to 128 GB DDR4 2666 SDRAM DIMM, ECC optional
Capacity of main memory, max.	128 Gbyte

## Hardware configuration

Slots	
<ul style="list-style-type: none"> <li>free slots</li> </ul>	2 slots: 1x PCI Express (x16) (16 lanes), 1x PCI Express (x16) (4 lanes) or 4 slots: 2x PCI, 2x PCI Express (x16) (8 lanes) or 4 slots: 2x PCI Express (x16) (8 lanes), 1x PCI Express (x16) (4 lanes), 1x PCI Express (x16) (1 lane); expansion modules up to 312 mm in length can be used

## Interfaces

Interfaces/bus type	1x COM1, 1x COM2 (optional), 2x DisplayPort, 1x DVI-D, audio (microphone in, line in, line out), 9x USB, 3x Gigabit Ethernet
PROFIBUS/MPI	can be implemented with plug-in card
USB port	4x USB 3.1 Gen. 2 Type A, 2x USB 3.1 Gen. 2 Type C on the rear; 1x USB 3.1 Gen. 2 Type A internally, e.g. for software dongle with optional interlock, 2x USB 3.1 Gen. 1 Type A on the front, can be used with door closed
Connection for keyboard/mouse	USB
serial interface	COM1: 1x RS 232, COM2 (optional): 1x RS 232
Multimedia	
<ul style="list-style-type: none"> <li>Audio In/Out</li> <li>Microphone In</li> </ul>	Yes Yes
Video interfaces	
<ul style="list-style-type: none"> <li>Graphics interface</li> </ul>	2x DisplayPort and 1x DVI-D onboard; 1x VGA via DP-VGA adapter cable (optional); graphics card PCIe (x16), Triple Head (3x mini DisplayPort, 2 GB graphics memory, 3x mini DisplayPort to DisplayPort adapter cable) (optional)
Industrial Ethernet	
<ul style="list-style-type: none"> <li>Industrial Ethernet interface</li> <li>— 100 Mbps</li> <li>— 1000 Mbps</li> </ul>	3x Gigabit Ethernet (IE/PN), RJ45 Yes Yes

Integrated Functions	
<b>Monitoring functions</b>	
<ul style="list-style-type: none"> <li>• Temperature monitoring</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Watchdog</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Status LEDs</li> </ul>	Power, HDD, Ethernet 1, Ethernet 2, Ethernet 3, Watchdog, Temp, Fan, HDD1 alarm, HDD0 alarm
<ul style="list-style-type: none"> <li>• Fan</li> </ul>	Yes
<ul style="list-style-type: none"> <li>• Monitoring function via network</li> </ul>	Optional
EMC	
<b>Interference immunity against discharge of static electricity</b>	
<ul style="list-style-type: none"> <li>• Interference immunity against discharge of static electricity</li> </ul>	±6 kV contact discharge acc. to IEC 61000-4-2; ±8 kV air discharge acc. to IEC 61000-4-2
<b>Interference immunity against high-frequency electromagnetic fields</b>	
<ul style="list-style-type: none"> <li>• Interference immunity against high frequency radiation</li> </ul>	10 V/m for 80 ... 2 700 MHz, 80% AM acc. to IEC 61000-4-3; 3 V/m for 2.7 to 6 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz to 80 MHz, 80% AM acc. to IEC 61000-4-6
<b>Interference immunity to cable-borne interference</b>	
<ul style="list-style-type: none"> <li>• Interference immunity on supply cables</li> </ul>	±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
<ul style="list-style-type: none"> <li>• Interference immunity on signal cables &gt;30m</li> </ul>	±2 kV acc. to IEC 61000-4-5, surge, length > 30 m
<ul style="list-style-type: none"> <li>• Interference immunity on signal cables &lt; 30m</li> </ul>	±1 kV acc. to IEC 61000-4-4; burst, length < 3 m
<b>Interference immunity against voltage surge</b>	
<ul style="list-style-type: none"> <li>• asymmetric interference</li> </ul>	±2 kV acc. to IEC 61000-4-5, surge asymmetric
<ul style="list-style-type: none"> <li>• symmetric interference</li> </ul>	±1 kV acc. to IEC 61000-4-5, surge symmetric
<b>Interference immunity to magnetic fields</b>	
<ul style="list-style-type: none"> <li>• Interference immunity to magnetic fields at 50 Hz</li> </ul>	100 A/m; to IEC 61000-4-8
<b>Emission of conducted and non-conducted interference</b>	
<ul style="list-style-type: none"> <li>• Interference emission via line/AC current cables</li> </ul>	EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 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
Standards, approvals, certificates	
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; CAN/CSA-C22.2 No. 61010-2-201 Second Edition
UL approval	Yes; UL 61010-2-201 Second Edition, File E85972
cULus	Yes; UL 61010-2-201 Second Edition; CAN/CSA-C22.2 No. 61010-2-201 Second Edition
KC approval	Yes

EMC	EN 61000-6-3; EN 61000-6-4, CAN/CSA CISPR 22 Class B, EN 55032 Class B; FCC Class A; KN32 Class B, EN 61000-3-2 Class D; EN 61000-3-3
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 +50 °C with full configuration
Ambient temperature during storage/transportation	
• min.	-20 °C; Max. 20 °C/h (no condensation)
• max.	60 °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: 10 cycles, 10 Hz to 58 Hz: 0.0375 mm, 58 Hz to 500 Hz: 4.9 m/s <sup>2</sup> (0.5 g)
Shock testing	
• Shock load during operation	Tested according to DIN IEC 60068-2-7: 50 m/s <sup>2</sup> (5 g), 30 ms, 100 shocks

### Operating systems

pre-installed operating system	Windows 10 Enterprise 2016 LTSB, multi-language (64-bit); Windows 10 IoT Enterprise 2019 LTSC, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 multi-language clients (64-bit); Windows Server 2019 Standard Edition incl. 5 multi-language clients (64-bit)
Additional info on operating system	Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian)
without operating system	Yes

### Software

SIMATIC Software	Optional package with SIMATIC WinCC
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### Dimensions

Width	430 mm
Height	88 mm; 2U
Depth	444 mm
<b>last modified:</b>	12/09/2020