

SIMATIC IPC647D (Rack PC, 19", 2 HU); 2x Gbit Ethernet (IE/PN), RJ45; 1x DVI-I; 2x display ports; 1x COM 1; 2x PS/2; audio; 4x USB 3.0, incl. 1x internal; 3x USB 2.0; Temp. and fan monitoring; Watchdog, Card retainer XEON E3-1268LV3 (4C/8T, 2.3 (3.3) GHz, 8 MB cache VT-D, AMT); mainboard without fieldbus RAID1, 1 TB (2x 1 TB HDD SATA, mirror disks), internal 0.5 g vibration, 5 G shock 16 GB DDR3 SD-RAM (2x 8 GB), Dual channel bus module 4 slots: 2x PCI, 2x PCIE X16; DVD +/-RW (SLIM) without expansion (HW); graphics onboard; Adapter cable DVI-I according to VGA for onboard graphics Windows 7 Ultimate, 64 bit, MUI (de, en, fr, es, it), SP1 SIMATIC PC DiagMonitor V5.0 and Image&Partition Creator V3.5 enclosed 2x 110/240V redund. power supply; without line 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> <li>Rated value 60 Hz</li> </ul> | Yes<br>Yes                                                                                                                                                                                                                |
| Mains buffering                                                                                |                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>Mains/voltage failure stored energy time</li> </ul>     | 20 ms                                                                                                                                                                                                                     |
| Processor                                                                                      |                                                                                                                                                                                                                           |
| Processor type                                                                                 | 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 SAS, mirror disks) with PCIe (x8) RAID 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) |
| Memory                                                                                         |                                                                                                                                                                                                                           |
| Main memory                                                                                    | 2 GB to 32 GB DDR3-1600 DIMM, ECC optional                                                                                                                                                                                |
| Capacity of main memory, max.                                                                  | 32 Gbyte                                                                                                                                                                                                                  |
| Hardware configuration                                                                         |                                                                                                                                                                                                                           |
| Slots                                                                                          |                                                                                                                                                                                                                           |
| <ul style="list-style-type: none"> <li>free slots</li> </ul>                                   | 2x PCIe mech. (x16) (4 lanes) or 4x PCIe mech. (x16) (4 lanes / 8 lanes depending on slot) or 2x PCI, 2x PCIe mech. (x16) (8 lanes); 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                                                                                                                                                                                                                   |

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| 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                                                                                                                                                                                  |
| <b>Integrated Functions</b>                                         |                                                                                                                                                                                      |
| Monitoring functions                                                |                                                                                                                                                                                      |
| • Temperature monitoring                                            | Yes                                                                                                                                                                                  |
| • Watchdog                                                          | Yes                                                                                                                                                                                  |
| • Status LEDs                                                       | POWER, HDD, ETHERNET 1, ETHERNET 2, PROFIBUS / MPI, SF PROFINET, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM                                                                         |
| • Fan                                                               | Yes                                                                                                                                                                                  |
| • Monitoring function via network                                   | Optional                                                                                                                                                                             |
| <b>EMC</b>                                                          |                                                                                                                                                                                      |
| 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 - 1 000 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                                                                              |
| <b>Degree and class of protection</b>                               |                                                                                                                                                                                      |
| IP (at the front)                                                   | IP41                                                                                                                                                                                 |
| IP (rear)                                                           | IP20                                                                                                                                                                                 |
| <b>Standards, approvals, certificates</b>                           |                                                                                                                                                                                      |
| 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                                                                                                            |
| Marine approval                                                     |                                                                                                                                                                                      |
| • Germanischer Lloyd (GL)                                           | Yes; Only with SSD                                                                                                                                                                   |
| • American Bureau of Shipping (ABS)                                 | Yes; Only with SSD                                                                                                                                                                   |
| • Bureau Veritas (BV)                                               | Yes; Only with SSD                                                                                                                                                                   |

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| • Det Norske Veritas (DNV)                                    | Yes; Only with SSD                                                                                                                                                                                                                                                                                                                                                                                                        |
| • Lloyds Register of Shipping (LRS)                           | Yes; Only with SSD                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Ambient conditions</b>                                     |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Ambient temperature during operation                          |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| • Ambient temperature during operation                        | 0 ... 50 °C no ODD operation, no HDD operation in swap frame, no hardware RAID controller; 0 ... 45 °C no ODD operation, no hardware RAID controller, power loss of expansion cards in total < 55 W; 0 ... 40 °C no hardware RAID controller, power loss of the expansion cards in total < 55 W; 0 ... 35 °C no restrictions                                                                                              |
| Ambient temperature during storage/transportation             |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| • min.                                                        | -20 °C                                                                                                                                                                                                                                                                                                                                                                                                                    |
| • max.                                                        | 60 °C                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Relative humidity                                             |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| • Relative humidity                                           | tested to IEC 60068-78, DIN IEC 68-2-30: 5 % to 80 % at 25 °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 IEC 60068-2-27, IEC 60068-2-29: half-sine: 50 m/s <sup>2</sup> (5 g), 30 ms, 100 shocks per axis                                                                                                                                                                                                                                                                                                      |
| <b>Operating systems</b>                                      |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| pre-installed operating system                                | Windows 7 Ultimate, multi-language (32-bit/64-bit), Windows 10 Enterprise 2015 LTSC, multi-language (64-bit), Windows 10 Enterprise 2016 LTSC, 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) |
| Additional info on operating system                           | Multi-Language User Interface (MUI): 5 languages (English, German, French, Spanish, Italian)                                                                                                                                                                                                                                                                                                                              |
| without operating system                                      | Yes                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Software</b>                                               |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| SIMATIC Software                                              | Optionally in package with SIMATIC WinCC or WinCC flexible                                                                                                                                                                                                                                                                                                                                                                |
| <b>Dimensions</b>                                             |                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Width                                                         | 430 mm                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Height                                                        | 88 mm; 2U                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Depth                                                         | 444 mm                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>last modified:</b>                                         | 11/5/2020                                                                                                                                                                                                                                                                                                                              |