## SIEMENS

Data sheet

## 6AG4112-2GA44-3GB3

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 Core I5-4570TE (2C/4T, 2.7 (3.3) GHz, 4 MB cache, TB, VT-D, AMT); mainboard without fieldbus 500 GB HDD SATA, 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) COM2; LPT (1 slots occupied); graphics onboard; Adapter cable DVI-I according to VGA for onboard graphics Windows Server 2012 R2 Standard Edition incl. 5 clients, 64 bit, MUI (de, en, fr, es, it) SIMATIC PC Image&Partition Creator V3.5 enclosed 110/240V industrial power supply unit; with NAMUR, Power supply cable USA

nstallation type/mounting	
Mounting	For horizontal installation; prepared for telescopic rails; 19" mounting bracket can be removed externally
Design	Rack PC, 19", 2U
upply voltage	
Type of supply voltage	100/240 V AC (autorange) 50 / 60 Hz; optional redundant 100/240 V AC
Line frequency	
Rated value 50 Hz	Yes
Rated value 60 Hz	Yes
Mains buffering	
<ul> <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	
free slots	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
nterfaces	
Interfaces/bus type	1x COM1, 1x COM2 (optional), 1x LPT (optional), 2x DisplayPort, 1x DVI-1, 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	

• Microphone InYesVideo interfaces• Graphics interface2x DisplayPort and 1x DVI-1 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 interface2x Ethernet (RJ45)- 100 MbpsYes- 100 MbpsYes- 100 MbpsYesIntegrated Functions• Temperature monitoringYes• Temperature monitoringYes• Status LEDsPOWER, HDD, ETHERNET 1, ETHERNET 2, PROFIBUS / MPI, SF PROFINET, WATCHDOG, TEMP, FAN, HDD0 ALARM, HDD1 ALARM• FanYes• Monitoring function via networkOptional	a Audia In/Out	Vaa
Value substrained         - DisplayPort and 1% DNI - locussed: 1% VGA via bulk / each bid probable graphics maneral CEs (vi6). Dual Head (2x VGA or 2x DVI-D). 1 GB graphics maneral (PGI or 16). Dual Head (2x VGA or 2x DVI-D). 1 GB graphics maneral (PGI or 16). Dual Head (2x VGA or 2x DVI-D). 1 GB graphics maneral (PGI or 16). Dual Head (2x VGA or 2x DVI-D). 1 GB graphics maneral (PGI or 16). Dual Head (2x VGA or 2x DVI-D). 1 GB graphics maneral (PGI or 10). Dubgs           - 100 Mbps         - Vas           - 100 Mbps         Vas           - 100 Mbps         Vas           - 100 Mbps         Vas           - 100 Mbps         Vas           - National function         Vas           - National function         Vas           - National function         Vas           - Status LEDS         POVER HDD. ETHERNET 1 ETHERNET 2. PROFIBURS I MPI ST           - Ferr         - Vas           - National function van network         Vas           - Ferr         Vas           - Interference Immunity against discharge of status electrons         * National function van network           - Interference Immunity against high-frequency relations         * National function van network           - Interference Immunity against high-frequency relations         * National function van network           - Interference Immunity against high-frequency relations         * National function van network           - Interference Immunity a	Audio In/Out	Yes
• Graphics interface         2.8 bishup/soft and 1.8 UVI onloaved, 12 VIA via DVI VAB a dashed cable (consult operation cambod (reling), Dauh Head (dar VAB or 2.8 UVI.0, 1 GB consult of the consult o	· · ·	Tes
induitial Etheme infrace         2 k Ethemet (RJ46)           - 100 Maps         Yes           information controls         Status LEDs           information controls         Status L		(optional); graphics card PCIe (x16), Dual Head (2x VGA or 2x DVI-D), 1 GB
	Industrial Ethernet	
	Industrial Ethernet interface	2x Ethernet (RJ45)
Integrated functions           Monitoring functions           Yes           Valatchog         Yes           Inteference         Yes	— 100 Mbps	Yes
Monitoring functions         Yes           • Temporature monitoring         Yes           • Stabu LEDs         POWER, HDD, ETHERNET 1, ETHERNET 2, PROFIBUS / MPI, SF PROFINET, WATCHDOG, TEMP, FAN, HDDD ALARM, HDDT ALARM           • Fan         Yes           • Indreference immunity against discharge of static iselectricity         Yes           Interference immunity against discharge of static iselectricity         #SKV contact discharge acc. to IEC 61000-4-2; 148 kV air discharge acc. to IEC 61000-4-3; 10V fm for 80 - 1000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-3; 10V fm for 80 - 1000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4-4; Linet; 14 kV acc. to IEC 61000-4-4; Linet; 14 kV acc. to IEC 61000-4-4; Linet; 24 kV acc. to IEC 61000-4-3; Linet; 24 kV acc. to IEC 61000-4-4; Linet; 24 kV acc. to IEC 61000-4-3; Linet; 24 kV acc. to IEC 61000-4-4; Lin	— 1000 Mbps	Yes
• Temperature monitoring         Yes           • Vatarbdog         Yes           • Status LEDs         POWER, HDD, ETHERNET 1, ETHERNET 2, PROFIBUS / MPI, SF           • Fan         Ves           • Solontoring function via network         Optional           Interference immunity against discharge of static electricity         #6 W contact discharge acc. to IEC 61000 4-2; ±6 W and ischarge acc. to IEC 61000 4-2; ±6 W and ischarge acc. to IEC 61000 4-2; ±6 W and ischarge acc. to IEC 61000 4-3; 10 V for 10 kHz - 80 MHz, ads into 10 V m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000 4-3; 10 V for 10 kHz - 80 MHz, ads into 10 V m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000 4-4; staty acc. to IEC 61000	Integrated Functions	
• Watchdog         Yes           • Watchdog         Yes           • POWER PLOD. ETHERNET 1. ETHERNET 2. PROFINELY ALARM.         POWER PLOD. ETHERNET 1. ETHERNET 2. PROFINELY ALARM.           • Fan         Yes           • Working function via network         Yes           • Watchdog         ************************************	Monitoring functions	
• Status EDs     POWER, HOD. ETHERNET 1, ETHERNET 2, ROFFIEUS / MPL SF       • Fan     Yes       • Monitoring function via network     Optional       • Bonitoring function via network     Optional       • Monitoring function via network     Status electricus       • Interference immunity against discharge of status electricus     if KV contact discharge of a tabus electricus       • Interference immunity against high-frequency relations     10 Vin for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 6 1000 -4.2, 18 KV air discharge of a tabus electricus       • Interference immunity against high-frequency relations     10 Vin for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 6 1000 -4.2, 10 V for 10 MHz. = 80 MHz.       • Interference immunity on supply cables     2 EV acc. to IEC 6 1000 -4.4, burst, ±1 KV acc. to IEC 6 1000 -4.5, surge asymmetric       • Interference immunity on supply cables     2 EV acc. to IEC 6 1000 -4.4, Burst       • Interference immunity on supply cables     2 EV acc. to IEC 6 1000 -4.4, Burst       • Interference immunity on supply cables     10 Vin for 80 - 1000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 6 1000 -4.5, surge asymmetric       • Interference immunity on supply cables     2 EV acc. to IEC 6 1000 -4.4, Burst       • Interference immunity on supply cables     2 EV acc. to IEC 6 1000 -4.4, Burst       • Interference immunity on signal cables - 30m     1 V acc. to IEC 6 1000 -4.5, surge asymmetric       • Interference immunity on signal cables - 30m     1 V acc. to IEC 6 1000 -4.5, surge asy	Temperature monitoring	Yes
• Fight ProTINET_WATCHDOG, TEMP, FAN, HDDD ALARM, HDD1 ÁLARM           • Monitoring function via network         Yes           • Monitoring function via network         Optional           ENC         • Monitoring function via network         Stream (Stream (Str	Watchdog	Yes
• Monitoring function via network         Optimal           MC         FinderGene immunity against discharge of static electricity.           Interference immunity against discharge of static electricity.         Isk VV contract discharge acc. to EC 61000-4.2; ±8 KV ari discharge acc. to IEC 61000-4.3; to V more 20.0; To XI, 2004, 42, 40, 40, 40, 40, 40, 40, 40, 40, 40, 40	Status LEDs	
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 radiation       #6 KV contact discharge acc. to IEC 61000-4-2;         Interference immunity against high-frequency radiation       10 Vm for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc to IEC 61000-4-3;         Interference immunity to subply cables       #2 KV acc. to IEC 61000-4-4;         Interference immunity on supply cables       #2 KV acc. to IEC 61000-4-4;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-4;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-4;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-5;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-4;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-5;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-4;         Interference immunity on signal cables >30m       #1 KV acc. to IEC 61000-4-5;         Interference immunity to magnetic fields at 50 Hz       100 Arm; to IEC 61000-4-4;         Interference emission of sindice fields at 50 Hz       100 Arm; to IEC 61000-4-3;         Interference emission of sindice f	• Fan	
Interference immunity against discharge of static electricity         46 kV contact discharge acc. to IEC 61000 4-2; 48 kV air discharge acc. to IEC 61000 4-2           Interference immunity against high frequency relation electricity         10 Vm for 80 - 1000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4.3; 30 Vm for 72 - 27 GHz, 80% AM acc. to IEC 61000-4.3; 10 V for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4.4; burst ±1 kV acc. to IEC 61000-4.5; surge symmetric; 22 VM acc. to IEC 61000-4.4; burst ±1 kV acc. to IEC 61000-4.5; surge symmetric; 24 VM acc. to IEC 61000-4.4; burst ±1 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; burst ±2 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; burst ±2 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; burst ±2 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; burst ±2 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; burst ±2 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; burst ±2 kV acc. to IEC 61000-4.5; surge symmetric; 12 VM acc. to IEC 61000-4.4; Burst           Interference immunity against voltage surge         12 kV acc. to IEC 61000-4.5; surge symmetric           Interference immunity to magnetic fields         100 Am; to IEC 61000-4.3; Surge symmetric           Interference immunity to magnetic fields         100 Am; to IEC 61000-4.3; Surge symmetric           Interference immunity to magnetic fields         100 Am; to IEC 61000-4.3; EV 5002 Class B, EN 61000-3:2 Class of protection           IP (at the forth)         IP 41           IP (reart)         IP2           IP (athe freence)         Yes; For use in indus	-	Optional
interference immunity against discharge of static electricity               af KV contact discharge acc. to IEC 6 1000-4-2; ±8 kV air discharge acc. to IEC             fi000-4-2            Interference immunity against high-frequency electromagnetic fields               10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4.3; uV for 10 kHz - 80 MHz, 80% AM acc. to IEC 61000-4.4; BVX M acc. to IEC 61000-4.5; SVX B a	EMC	
electricity         6100-42           Interference immunity against high frequency electromagnetic fields           elinterference 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; 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4.3; 10 V/m for 80 - 1 000 MHz and 1.4 - 2 GHz, 80% AM acc. to IEC 61000-4.5; aurge asymmetric           elinterference immunity on supply cables         22 KV acc. to IEC 61000-4.4, burst; 14 KV acc. to IEC 61000-4.5, surge asymmetric           elinterference immunity on signal cables >30m         21 KV acc. to IEC 61000-4.5, surge asymmetric           elinterference immunity on signal cables >30m         11 KV acc. to IEC 61000-4.5, surge asymmetric           elinterference immunity on signal cables >30m         11 KV acc. to IEC 61000-4.5, surge asymmetric           elinterference immunity on signal cables >30m         12 KV acc. to IEC 61000-4.5, surge asymmetric           elinterference immunity to magnetic fields         11 KV acc. to IEC 61000-4.5, surge asymmetric           elinterference immunity to magnetic fields at 50 Hz         100 A/m; to IEC 61000-4.3           elinterference immunity to magnetic fields         EN 61000-6.3, FCC Class A, EN 61000-6.4, CISPR 22, EN 55022 Class B, EN 61000-6.3, FCC Class A, EN 61000-6.4, CISPR 22, EN 55022 Class B, EN 61000-6.3, FCC Class A, EN 61000-6.3, 2007 +A1.2011, noise           elinterference immunity to magnetic fields         FP1           IP (earth front)         IP20	Interference immunity against discharge of static electricity	
• Interference immunity against high frequency radiation       10 V/m for 8.0 - 1000 MHz and 1.4 - 2.6Hz .80% AM acc. 10 EC 61000-4.3. 3         Interference immunity to cable-borne interference       2 KV acc. to IEC 61000-4.4. burst; ±1 KV acc. to IEC 61000-4.5, surge symmetric         • Interference immunity on signal cables >30m       2 KV acc. to IEC 61000-4.4. burst; ±1 KV acc. to IEC 61000-4.5, surge symmetric         • Interference immunity on signal cables >30m       ±1 KV acc. to IEC 61000-4.5, surge asymmetric         • Interference immunity on signal cables >30m       ±1 KV acc. to IEC 61000-4.5, surge asymmetric         • Interference immunity against valtage surge       ************************************	, , , ,	
Wm for 2 - 27 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 on supply cables     ± 2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric. E0 61000-4-5, surge asymmetric       • Interference immunity on signal cables >30m     ± 2 kV acc. to IEC 61000-4-4, burst; ±1 kV acc. to IEC 61000-4-5, surge symmetric. E0 61000-4-5, surge asymmetric       • Interference immunity on signal cables >30m     ± 2 kV acc. to IEC 61000-4-4, Burst       • Interference immunity on signal cables >30m     ± kV acc. to IEC 61000-4-5, surge asymmetric       • symmetric interference     ± 2 kV acc. to IEC 61000-4-5, surge asymmetric       • symmetric interference     ± 2 kV acc. to IEC 61000-4-5, surge asymmetric       • symmetric interference     ± 2 kV acc. to IEC 61000-4-5, surge asymmetric       • Interference immunity to magnetic fields     100 A/m; to IEC 61000-4-5, surge asymmetric       • 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 61000-3-3       Degree and class of protection     IP41       IP (ear)     IP41       IP (ear)     IP20       Standards, approvals, certificates     Yes; For use in industrial areas as well as domestic, business and commercial environments (emitted interference: 18 1600-6-3;2007 + A1:2011, noise immunity: N 61000-6-2;2005       CE mark     Yes; Included in CULus       UL approval     Yes       CC mark     Yes		
• Interference immunity on supply cables       ±2 kV acc. to IEC 6 1000-4.4, burst. 14 VV acc. to IEC 6 1000-4.5, surge asymmetric         • Interference immunity on signal cables >30m       ±2 kV acc. to IEC 6 1000-4.4, burst. ±2 kV acc. to IEC 6 1000-4.5, surge asymmetric         • Interference immunity against voltage surge       ±2 kV acc. to IEC 6 1000-4.4, Burst. ±2 kV acc. to IEC 6 1000-4.4, Burst.         • asymmetric interference       ±2 kV acc. to IEC 6 1000-4.5, surge asymmetric         • symmetric interference       ±2 kV acc. to IEC 6 1000-4.5, surge asymmetric         • symmetric interference       ±1 kV acc. to IEC 6 1000-4.5, surge asymmetric         • Interference immunity to magnetic fields       ±0 kV acc. to IEC 6 1000-4.5, surge asymmetric         • Interference immunity to magnetic fields ±50 Hz       100 A/m; to IEC 6 1000-4.5         • Interference immunity to magnetic fields ±50 Hz       100 A/m; to IEC 6 1000-4.5         • Interference immunity to magnetic fields ±50 Hz       100 A/m; to IEC 6 1000-4.5         • Interference immunity to magnetic fields ±50 Hz       100 A/m; to IEC 6 1000-4.5         • Interference immunity to magnetic fields ±50 Hz       100 A/m; to IEC 6 1000-6.3, CC Class A, EN 61000-6.4, CISPR 22, EN 55022 Class B, EN 61000-6.3, COC 1000-6.4, CISPR 22, EN 55022 Class B, EN 61000-6.3, COC 1000-6.3, COC 14.1, CO 1000-6.3, COC 1	<ul> <li>Interference immunity against high frequency radiation</li> </ul>	V/m for 2 - 2.7 GHz, 80% AM acc. to IEC 61000-4-3; 10 V for 10 kHz - 80 MHz,
symmetric; ±2 kV acc. to IEC 61000-4-5, surge asymmetric ±2 kV acc. to IEC 61000-4-5, surge asymmetric ±2 kV acc. to IEC 61000-4-5, surge asymmetric ±2 kV acc. to IEC 61000-4-4, Burst Interference immunity against voltage surge ±2 kV acc. to IEC 61000-4-5, surge asymmetric ±2 kV acc. to IEC 61000-4-5, surge asymmetric ±1 kV acc. to IEC 61000-6-3, surge asymmetric ±1 kV acc. to IEC 61000-6-3	Interference immunity to cable-borne interference	
Interference immunity on signal cables < 30m     Interference immunity against voltage surge         24 kV acc. to IEC 61000-4-4, Burst         easymmetric interference         asymmetric interference         1kV acc. to IEC 61000-4-5, surge asymmetric         surge asymmetric         1kV acc. to IEC 61000-4-5, surge asymmetric         1kV acc. to IEC 61000-4-5, surge asymmetric         1kV acc. to IEC 61000-4-5, surge asymmetric         1kV acc. to IEC 61000-4-8         Interference immunity to magnetic fields         100 Am; to IEC 61000-4-8         Emission of conducted and non-conducted interference         Interference emission via line/AC current cables         BN 61000-8-3, 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)         IP (area)         Standards, approvals, certificates         CE mark         Yes; For use in industrial areas as well as domestic, business and commercial         environments (emitted interference: EN 81000-6-3.2007 +A1.2011, noise         immunity: EN 81000-6-3.2007 +A1.2011, EN 81000-6-2.2005         Us astracted in tefference: EN 81000-6-3.2007 +A1.2011, EN 81000-6-3.	• Interference immunity on supply cables	
Interference immunity against voltage surge         ± 2 KV acc. to IEC 61000-4.5, surge asymmetric           • asymmetric interference         ± 1 kV acc. to IEC 61000-4.5, surge asymmetric           • Interference immunity to magnetic fields at 50 Hz         100 Atm; to IEC 61000-4.5, surge symmetric           • Interference immunity to magnetic fields at 50 Hz         100 Atm; to IEC 61000-4.5, Surge symmetric           • Interference immunity to magnetic fields at 50 Hz         100 Atm; to IEC 61000-4.8           Emission of conducted and non-conducted interference         EN 61000-6.3, FCC Class A, EN 61000-6.4, CISPR 22, EN 55022 Class B, EN 61000-3-2           • Interference emission via line/AC current cables         EN 61000-3-2 Class D, EN 61000-3-3           >pegree and class of protection         IP41           IP (rath front)         IP41           IP (rath fort)         IP20           Standards, approvals, certificates         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 61000-6-3:2005           CE mark         Yes; Included in cULus           UL approval         Yes           CL approval         Yes           CE (ormerly Gost-R)         Yes           EAC (formerly Gost-R)         Yes           EAC (formerly Gost-R)         Yes; Only with fostD           Optionational	<ul> <li>Interference immunity on signal cables &gt;30m</li> </ul>	±2 kV acc. to IEC 61000-4-4, burst; ±2 kV acc. to IEC 61000-4-5, 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 at 50 Hz       100 A/m; to IEC 61000-4-8         Emission of conducted and non-conducted interference       100 A/m; to IEC 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-2 Class D, EN 61000-3-2 Class D, EN 61000-3-3         Degree and class of protection       IP41         IP (ear)       IP20         Standards, approvals, certificates       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; Included in cULus         UL approval       Yes; UL 60950-1, file number E115352         RCM (formerly C-TICK)       Yes         KC approval       Yes; UL 60950-4, A1:2011, EN 61000-6-2:2005         Dust protection       Yes         Marine approval       Yes; Only with SSD         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       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD <td><ul> <li>Interference immunity on signal cables &lt; 30m</li> </ul></td> <td>±1 kV acc. to IEC 61000-4-4, Burst</td>	<ul> <li>Interference immunity on signal cables &lt; 30m</li> </ul>	±1 kV acc. to IEC 61000-4-4, Burst
• symmetric interference       ±1 kV acc. to IEC 61000-4-5, surge symmetric         Interference immunity to magnetic fields       100 A/m; to IEC 61000-4-8         Emission of conducted and non-conducted interference       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       IP41         IP (at the front)       IP41         IP (rear)       IP20         Standards, approvals, certificates       EN 61000-6-22 Class a set environments (emitted interference: EN 61000-6-3.2007 +A1:2011, noise immunity: EN 61000-6-22005)         CSA approval       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 61000-6-22005)         CSA approval       Yes; UL 60950-1, file number E115352         UL approval       Yes         CG (formerly C-TICK)       Yes         KC approval       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       Yes; Only with SSD         • American Bureau of Shipping (ABS)       Yes; Only with SSD         • Bureau Verlias (BV)       Yes; Only with SSD         • Dust Norske Verlias (DNV)       Yes; Only with SSD <tr< td=""><td>Interference immunity against voltage surge</td><td></td></tr<>	Interference immunity against voltage surge	
Interference immunity to magnetic fields at 50 Hz         100 A/m; to IEC 61000-4-8           Emission of conducted and non-conducted interference         Enission of 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)         IP40         Standards, approvals, certificates           CE mark         Yes; For use in industrial areas as well as domestic, business and commercial environments (entited interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)           CSA approval         Yes; Included in cULus           UL approval         Yes; Included in cULus           UL approval         Yes; Included in cULus           KC approval         Yes; Included in cULus           KC approval         Yes           KC approval         Yes           KC approval         Yes           KC approval         Yes           ENC         CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005           Dust protection         Wes           Marine approval         Yes           eGermanischer Lloyd (GL)         Yes; Only with SSD           eAmerican Bureau of Shipping (ABS)         Yes; Only with SSD	<ul> <li>asymmetric interference</li> </ul>	
• Interference immunity to magnetic fields at 50 Hz       100 A/m; to IEC 61000-4-8         Emission of conducted and non-conducted interference       EN 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-3         Degree and class of protection       IP (at the front)       IP41         IP (at the front)       IP20         Standards, approvals, cortificates       Ves; 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; Included in cULus         UL approval       Yes         CGUus       Yes (LogoSo-1, file number E115352         RCM (formerly C-TICK)       Yes         KC approval       Yes         Dust protection       Yes         Marine approval       Yes         Cermanischer Lloyd (GL)       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • American Bureau Of hisping (ABS)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Loyds Register of Shipping (LRS)       Yes; Only with SSD         • Loyds Register of Shipping (LRS)       Yes; Only with SSD	symmetric interference	±1 kV acc. to IEC 61000-4-5, surge symmetric
Emission of conducted and non-conducted interference <ul> <li>Interference emission via line/AC current cables</li> <li>EN 61000-6-3, FCC Class A, EN 61000-6-4, CISPR 22, EN 55022 Class B, EN 61000-3-3</li> </ul> Degree and class of protection         IP (at the front)       IP41         IP (rear)       IP20         Standards, approvals, certificates       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         CL genoval       Yes; Included in cULus         UL approval       Yes; UL 60950-1, file number E115352         RCM (formerly C-TICK)       Yes         KC approval       Yes         EAC (formerly Gost-R)       Yes         EMC       CE to 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       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Dust protection Stopping (ABS)       Yes; Only with SSD         • Dust protectias (BV)       Yes; Only with SSD         • Dust protexitas (BV)       Yes; Only with SSD<	Interference immunity to magnetic fields	
• 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           Degree and class of protection         IP (at the front)         IP (at the front)           IP (at the front)         IP41         IP20           Standards, approvals, certificates         IP (at an from the 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; 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 (U 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         Yes; Only with SSD           • American Bureau of Shipping (ABS)         Yes; Only with SSD           • Bureau Veritas (BV)         Yes; Only with SSD           • Det Norske Veritas (DNV)         Yes; Only with SSD	<ul> <li>Interference immunity to magnetic fields at 50 Hz</li> </ul>	100 A/m; to IEC 61000-4-8
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       revironments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise immunity: EN 61000-6-2:2005)         CSA approval       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; 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       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Lloyds Register of Shipping (LRS)       Yes; Only with SSD      <	Emission of conducted and non-conducted interference	
IP (at the front)       IP41         IP (rear)       IP20         Standards, approvals, certificates <ul> <li>CE mark</li> <li>Pes; 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)</li> <li>CSA approval</li> <li>Yes; Included in cULus</li> <li>UL approval</li> <li>Yes</li> <li>cULus</li> <li>Yes; UL 60950-1, file number E115352</li> <li>RCM (formerly C-TICK)</li> <li>Yes</li> <li>KC approval</li> <li>Yes</li> <li>EAC (formerly Gost-R)</li> <li>Yes</li> <li>EMC</li> <li>CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005</li> <li>Dust protection</li> <li>With front door closed: G2 EN 779, 99% of particles &gt; 0.5 mm are filtered</li> <li>Marine approval</li> <li>Germanischer Lloyd (GL)</li> <li>Yes; Only with SSD</li> <li>Bureau Veritas (BV)</li> <li>Yes; Only with SSD</li> <li>Bureau Veritas (BV)</li> <li>Yes; Only with SSD</li> <li>Bureau Veritas (BV)</li> <li>Yes; Only with SSD</li> <li>Eloyds Register of Shipping (LRS)</li> <li>Yes; Only with SSD</li> <li>Ambient conditions</li> <li>Ambient conditions</li> <li>Ambient temperature during operation</li> <li>Interpretation</li> <li>Interpretation<td></td><td></td></li></ul>		
IP (rear)       IP20         Standards, approvals, certificates       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 61000-6-3:2005)         CSA approval       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 61000-6-3:2005)         CSA approval       Yes; Included in cULus         UL approval       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       Wit front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered         Marine approval       Yes; Only with SSD         eGermanischer Lloyd (GL)       Yes; Only with SSD         eBureau Veritas (BV)       Yes; Only with SSD         e Lloyds Register of Shipping (ABS)       Yes; Only with SSD         e Lloyds Register of Shipping (LRS)       Yes; Only with SSD         Ambient conditions       Yes; Only with SSD		
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; Included in cULus         UL approval       Yes         UL us       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       Yes         Marine approval       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Lloyds Register of Shipping (LRS)       Yes; Only with SSD         Ambient conditions       Yes; Only with SSD		
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; Included in cULus         UL approval       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       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Lloyds Register of Shipping (LRS)       Yes; Only with SSD         Ambient conditions       Yes; Only with SSD		IP20
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       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Lloyds Register of Shipping (LRS)       Yes; Only with SSD         Ambient temperature during operation       Yes; Only with SSD		
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         Ves; Only with SSD           • Germanischer Lloyd (GL)         Yes; Only with SSD           • American Bureau of Shipping (ABS)         Yes; Only with SSD           • Bureau Veritas (BV)         Yes; Only with SSD           • Det Norske Veritas (DNV)         Yes; Only with SSD           • Lloyds Register of Shipping (LRS)         Yes; Only with SSD           Ambient temperature during operation         Yes; Only with SSD	CE mark	environments (emitted interference: EN 61000-6-3:2007 +A1:2011, noise
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	CSA approval	Yes; Included in cULus
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       Yes; Only with SSD         • Germanischer Lloyd (GL)       Yes; Only with SSD         • American Bureau of Shipping (ABS)       Yes; Only with SSD         • Bureau Veritas (BV)       Yes; Only with SSD         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Lloyds Register of Shipping (LRS)       Yes; Only with SSD         Ambient conditions       Yes; Only with SSD	UL approval	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	cULus	Yes; UL 60950-1, file number E115352
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	RCM (formerly C-TICK)	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	KC approval	Yes
Dust protection       With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered         Marine approval	EAC (formerly Gost-R)	Yes
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         • Det Norske Veritas (DNV)       Yes; Only with SSD         • Lloyds Register of Shipping (LRS)       Yes; Only with SSD         Ambient conditions       Yes; Only with SSD	EMC	CE, EN 61000-6-3:2007 +A1:2011, EN 61000-6-2:2005
Germanischer Lloyd (GL) Yes; Only with SSD     American Bureau of Shipping (ABS) Yes; Only with SSD     Bureau Veritas (BV) Yes; Only with SSD     Det Norske Veritas (DNV) Yes; Only with SSD     Lloyds Register of Shipping (LRS) Yes; Only with SSD     Ambient conditions Ambient temperature during operation	Dust protection	With front door closed: G2 EN 779, 99% of particles > 0.5 mm are filtered
American Bureau of Shipping (ABS) Yes; Only with SSD     Bureau Veritas (BV) Yes; Only with SSD     Det Norske Veritas (DNV) Yes; Only with SSD     Lloyds Register of Shipping (LRS) Yes; Only with SSD     Ambient conditions     Ambient temperature during operation	Marine approval	
Bureau Veritas (BV) Yes; Only with SSD     Det Norske Veritas (DNV) Yes; Only with SSD     Lloyds Register of Shipping (LRS) Yes; Only with SSD  Ambient conditions  Ambient temperature during operation	Germanischer Lloyd (GL)	Yes; Only with SSD
Det Norske Veritas (DNV) Yes; Only with SSD     Lloyds Register of Shipping (LRS) Yes; Only with SSD  Ambient conditions  Ambient temperature during operation	<ul> <li>American Bureau of Shipping (ABS)</li> </ul>	Yes; Only with SSD
Lloyds Register of Shipping (LRS) Yes; Only with SSD  Ambient conditions  Ambient temperature during operation	• Bureau Veritas (BV)	Yes; Only with SSD
Ambient conditions Ambient temperature during operation	<ul> <li>Det Norske Veritas (DNV)</li> </ul>	Yes; Only with SSD
Ambient temperature during operation	Lloyds Register of Shipping (LRS)	Yes; Only with SSD
	Ambient conditions	
• min. 0 °C	Ambient temperature during operation	
	• min.	0°0

• max.	50 °C
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 $^\circ\text{C}$ (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/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/s $^2$ (5 g), 30 ms, 100 shocks per axis
Operating systems	
pre-installed 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); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, multi-language (64-bit); Windows Server 2016 Standard Edition incl. 5 clients, m
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	88 mm; 2U
Depth	444 mm
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