

SIMATIC Embedded IPC

	SIMATIC IPC127E	SIMATIC IPC227E	SIMATIC IPC277E					SIMATIC IPC427E	SIMATIC IPC477E				
													
General features	Box PC	Box PC	Panel PC, 7" Touch	Panel PC, 9" Touch	Panel PC, 12" Touch	Panel PC, 15" Touch	Panel PC, 19" Touch	Box PC	Panel PC, 15" Touch	Panel PC, 19" Touch	Panel PC, 22" Touch	Panel PC, 24" Touch	General features
Resolution in pixels	–	–	Widescreen (800 x 480)	Widescreen (800 x 480)	Widescreen (1280 x 800)	Widescreen (1366 x 768)	Widescreen (1366 x 768)	–	Widescreen (1280 x 800)	Widescreen (1366 x 768)	Widescreen (1920 x 1080)	Widescreen (1920 x 1080)	Resolution in pixels
Processor	Intel Atom E3930 (2C / 2T; 1,3 (1,8) GHz; 2MB L2; HD 500 Graphics) Intel Atom E3940 (4C / 4T; 1,6 (1,8) GHz; 2MB L2; HD 500 Graphics)		Intel Celeron N2807 (2C/2T, 1.58 (2.16) GHz, 1 MB cache, VT-x); Intel Celeron N2930 (4C/4T, 1.83 (2.16) GHz, 2 MB cache, VT-x)						Intel Celeron G3902E (2C/2T, 1.6 GHz, 2 MB cache); Intel Core i3 6102E (2C/4T, 1.90 GHz, 3 MB cache); Intel Core i5-6442EQ (4C/4T, 1.9 (2.7) GHz, 6 MB cache); Intel Xeon Processor E3-1505L v5 (4C/8T, 2.0 (2.8) GHz, 8 MB cache)				Processor
Main memory	2 GB oder 4 GB		2 GB, 4 GB oder 8 GB; 512 KByte NVRAM optional						4 GB, 8 GB or 16 GB; 512 KByte NVRAM optional				Main memory
Free expansion slots	–	1 x PCIe (optional) max. 5 W	–					Up to 2 x PCIe cards (optional); (1 x PCIe x 4 and 1 x PCIe x 1); max. 6 W/12 W	Up to 1 x PCIe card (optional); (1 x PCIe x 4); max. 6 W				Free expansion slots
Operating systems (preinstalled and activated)	Windows 10 Enterprise LTSB 2016, 64Bit, MUI		Windows Embedded Standard 7 (E/P), 32-bit/64-bit; Windows 7 Ultimate MUI ¹⁾ , 32-bit/64-bit						Windows Embedded Standard 7 (E/P), 32-bit/64-bit; Windows 7 Ultimate, MUI ¹⁾ , 64-bit; Windows 10 Enterprise LTSB 2016				Operating systems (preinstalled and activated)
Packages/bundles	–		Packages with WinCC RT Advanced, WinCC V7 and WinAC RTX (F)/Windows 10 Enterprise						Packages with WinCC RT V7, WinCC RT Professional, WinCC RT Advanced, SIMATIC Software Controller				Packages/bundles
Power supply max. power consumption	DC 24 V; 20.4-28.8 V; max. 5 ms; on/off switch		DC 24 V DC; 20.4 ... 28.8 V; isolated / max. 10 ms (in acc. with NAMUR); On / Off switch					24 V DC; 19.2 ... 28.8 V; isolated / max. 15 ms (in acc. with NAMUR); On / Off switch	24 V DC; 19.2 ... 28.8 V; isolated / max. 20 ms (in accordance with NAMUR); or 100–240 V AC, 50/60 Hz; On / Off switch				Power supply / max. power consumption
MTBF backlighting	–	–	Up to 80,000 h ²⁾ ; dimmable from 0 to 100%				Up to 50,000 h ²⁾	–	Up to 80,000 h ²⁾ ; dimmable from 0 to 100%	Up to 50,000 h ²⁾ ; dimmable from 0 to 100%	Up to 30,000 h ²⁾ ; dimmable from 0 to 100%	Up to 30,000 h ²⁾ ; dimmable from 0 to 100%	MTBF backlighting
Drives													Drives
Mass storage	SSD 32 / 64 / 128 GB		CFast up to 16 GB (with external access); SSD 240/480 GB; HDD 320 GB (IPC227E only)						CFast 30 GB (with external access); SSD 240/480 GB; HDD 320 GB				Mass storage
Optical drives	–		–					–	Can optionally be connected through ext. drive via USB				Optical drives
Interfaces													Interfaces
Fieldbus			PROFINET RT over Ethernet						PROFINET RT via Ethernet				Fieldbus
Ethernet	2 or 3 x 10/100/1000 Mb/s (RJ45)		2 x 10/100/1000 Mbps (RJ45); teaming						3 x 10/100/1000 Mbps (RJ45); teaming				Ethernet
USB	2 x USB 3.0 or an additional 2 x USB 2.0	1 x USB 3.0, 3 x USB 2.0	Rear: 1 x USB 3.0, 2 x USB 2.0	Rear: 1 x USB 3.0, 3 x USB 2.0	Rear: 1 x USB 3.0, 3 x USB 2.0	Rear: 1 x USB 3.0, 3 x USB 2.0; front: USB 2.0 (Singletouch exclusive)	4 x USB 3.0	Rear: 4 x USB 3.0; Front: 1 x USB 3.0 (Singletouch exclusive)				USB	
Serial/parallel	–	2 x RS 232/RS 485/RS 422 switchable in BIOS, optional	1 x RS 232/RS 485/RS 422 switchable in BIOS						2 x RS 232/RS 485/RS 422 switchable in the BIOS, optional				Serial/parallel
Graphics interface			1 x DisplayPort						2 x DisplayPort				Graphics interface
Monitoring/diagnostics functions													Monitoring/diagnostics functions
Basic functionality	Temperature; Watchdog; SSD; CMOS battery (alarm locally via SIMATIC IPC DiagBase software);		Temperature; watchdog; HDD; CFast; SSD; CMOS battery (alarm locally by means of SIMATIC IPC DiagBase software)						Temperature; watchdog; HDD; CFast; SSD; CMOS battery (alarm locally by means of SIMATIC IPC DiagBase software)				Basic functionality
Advanced functions/remote access			System monitoring: Operating hours counter for preventive maintenance, maintenance mode, networking (LAN), SNMP and OPC interface (optionally via SIMATIC IPC DiagMonitor software)						System monitoring: Operating hours counter for preventive maintenance, maintenance mode, networking (LAN), SNMP and OPC interface (optionally via SIMATIC IPC DiagMonitor software)/remote access via Intel AMT Core i5 or higher and via SIMATIC IPC Remote Manager				Advanced functions/remote access
Ambient conditions													Ambient conditions
Degree of protection/EMC	Enclosure according to IP40/EN 55022B; EN 61000-6-3; EN 61000-6-4; FCC A		IP65 (front)/EN 55022A; EN 61000-6-4; EN 61000-6-2; FCC A					IP20 in accordance with IEC 60529/EN 61000-6-3; EN 61000-6-4; CISPR220 Class B; FCC Class A	IP65 (at the front) in accordance with IEC 60529/EN 61000-6-4; CISPR220 Class B; FCC Class A; IP20 (at the rear)				Degree of protection/EMC
Vibration during operation⁵⁾	5 ... 8.4 Hz: 3.5 mm; 8.4 ... 500 Hz: 9.8 m/s ²		10 – 58 Hz: 0.0375 mm; 58 – 200 Hz: 9.8 m/s ² (approx. 1 g) when operated with CFast/SSD						5 – 9 Hz: 3.5 mm; 9 – 500 Hz: 9.8 m/s ² (approx. 1 g) when operated with CFast/SSD				Vibration during operation⁵⁾
Shock load during operation⁶⁾	150 m/s ² ; 11 ms (wall mounting)	150 m/s ² ; 30 ms (approx. 15 g) when operated with CFast/SSD	50 m/s ² ; 30 ms (approx. 5 g) when operated with CFast/SSD					150 m/s ² ; 11 ms (approx. 15 g) when operated with CFast/SSD	50 m/s ² ; 30 ms (approx. 5 g) when operated with CFast/SSD				Shock load during operation⁶⁾
Relative humidity⁸⁾	5-85% (no condensation)	5-85% (CFast/SSD); -80% (HDD) (no condensation)	5 – 85% at 25 °C (no condensation)					Up to 80% at 25 °C (no condensation)	Up to 85% at 30 °C (no condensation)				Relative humidity⁸⁾
Ambient temperature in continuous operation at full processor load	0 – 50/55 °C	0 – 60 °C	0 – 50 °C			0 – 45 °C		0 – 55 °C	0 – 50 °C	0 – 45 °C	0 – 45 °C	0 – 45 °C	Ambient temperature in continuous operation at full processor load
Certification / EU directives	CE; cULus (508); WEEE / RoHS	CE; cULus (508); Marine approvals ²⁾ ; WEEE/RoHS; C-Tick	CE; cULus (508); ST: shipbuilding approvals for 7"/9"/12" ²⁾ ; MT: 12", 15", 19" in preparation + WEEE/RoHS, C-Tick					CE; cULus (508); ATEX/IECEX Cat 3G Zone 2, shipbuilding approvals ²⁾ ; WEEE/RoHS; C-Tick	CE; cULus (508); ATEX/IECEX Cat 3G Zone 2, shipbuilding approvals ²⁾ ; WEEE/RoHS; C-Tick				Certification / EU directives
Dimensions													Dimensions
Operator panel (W x H) Singletouch	–	–	214 x 158 mm	274 x 190 mm	330 x 241 mm	415 x 310 mm	483 x 337 mm	–	415 x 310 mm	483 x 337 mm	560 x 380 mm		Operator panel (W x H) Singletouch
Operator panel (W x H) Multitouch	–	–	–	–	315 x 227 mm	398 x 257 mm	464 x 294 mm	–	398 x 257 mm	464 x 294 mm	529 x 331 mm	585 x 363 mm	Operator panel (W x H) Multitouch
Installation dimensions (W x H x D) Singletouch	–	Basisgerät: ca. 191 x 100 x 60 mm	197 x 141 x 71 mm	251 x 166 x 71 mm	310 x 221 x 66 mm	396 x 291 x 76 mm	465 x 319 x 76 mm	Basic device: approx. 262 x 133 x 55.5 mm; Depth with 1 x PCIe/2 x PCIe expansion: 85 mm / 105.3 mm	395 x 290 x 83 mm	464 x 318 x 83 mm	542 x 360 x 83 mm		Installation dimensions (W x H x D) Singletouch
Installation dimensions (W x H x D) Multitouch	–	–	–	–	299 x 211 x 76 mm	382 x 241 x 76 mm	448 x 278 x 76 mm	–	382 x 241 x 83 mm	448 x 278 x 83 mm	513 x 315 x 83 mm	569 x 347 x 83 mm	Installation dimensions (W x H x D) Multitouch
Base version (W x H x D)	approx. 85 x 85 x 41 mm							–					Base version (W x H x D)
Extended version (W x H x D)	approx. 85 x 104 x 41 mm							–					Extended version (W x H x D)

SIMATIC Basic IPC			SIMATIC Advanced IPC			SIMATIC High-end IPC						
	SIMATIC IPC377E	SIMATIC IPC327E	SIMATIC IPC347E	SIMATIC IPC547G		SIMATIC IPC647E	SIMATIC IPC847E	SIMATIC IPC627E	SIMATIC IPC677E			
General features	Panel PC, 12", 15", 19"	Box PC	Rack PC, 19", 4HE	Rack PC, 19", 4HE short enclosure	Rack PC, 19", 4HE	Rack PC, 19", 2HE	Rack PC, 19", 4HE	Box PC	Panel PC, 15", 19" oder 22" Multitouch	General features		
Mounting/display resolution	Installation, VESA; 12": 1280 x 800 12" + 19": 1366 x 768	Wall and rail mounting	Ready for telescopic rails; for horizontal installation; 19" mounting bracket detachable from the outside	Ready for telescopic rails; for horizontal and vertical installation; 19" mounting bracket detachable from the outside; tower kit (optional)		Ready for telescopic rails; for horizontal installation; 19" mounting bracket detachable from the outside	Ready for telescopic rails; for horizontal and vertical installation; 19" mounting bracket detachable from the outside; tower kit (optional)	Wall mounting via enclosed mounting brackets; vertical installation via front / vertical installation kits (optional)	Built-in device for central structure 19", 22" and 24" Multitouch, 1920 x 1080 (Full HD)	Mounting/display resolution		
Processor	Intel Celeron Quad Core N3160 (4C/4T, 1.6 GHz, up to 2.24 GHz, 2 MB Cache)		Intel Core i5-4570S (4C/4T, up to 3.6 GHz, 6 MB Cache) Intel Pentium G3420 (2C/2T, 3.2 GHz, 3 MB Cache)	Intel Xeon E3-1275 v5 (4C/8T, 3.6 (4.0) GHz, 8 MB Cache, VT-x/-d, iAMT) ¹⁾ Intel Core i7-6700 (4C/8T, 3.4 (4.0) GHz, 8 MB Cache, VT-x/-d, iAMT) Intel Core i5-6500 (4C/4T, 3.2 (3.6) GHz, 6 MB Cache, VT-x/-d, iAMT) Intel Pentium G4400 (2C/2T, 3.3 GHz, 3 MB Cache, VT-x/-d)		Intel Xeon E-2176G (6C/12T, 3.7 (4.7) GHz, 12 MB Cache, VT-x/-d, iAMT) Intel Core i7-8700 (6C/12T, 3.2 (4.5) GHz, 12 MB Cache, VT-x/-d, iAMT) Intel Core i5-8500 (6C/12T, 3.0 (4.1) GHz, 9 MB Cache, VT-x/-d, iAMT) Intel Core i3-8100 (4C/4T, 3.6 GHz, 6 MB Cache, VT-x/-d)	Core i7-8700 (6C/12T, 3.2(4.5)GHz, 12MB Cache, VT-d, iAMT) Core i3-8100 (4C/4T, 3.6GHz, 6MB Cache, VT-d) Celeron G4900 (2C/2T, 3.1GHz, 2MB Cache, VT-d)		Processor			
Main memory	4 GB, 8 GB DDR3L-1600		2 GB, 4 GB, 8GB DDR3-1600 (configurable up to 16 GB); 2 x DIMM	From 4 GB DDR4-2133 SDRAM; 2 x DIMM, configurable up to 32 GB or 4 x DIMM ¹⁾ ; configurable up to 64 GB ¹⁾ (only for motherboard with C236 chipset)		From 4 GB DDR4-2666 SDRAM; 4 x DIMM; configurable up to 64 GB; ECC optional		From 4 GB DDR4-2666 SDRAM; 4 x DIMM configurable up to 64 GB; Retentive memory: NVRAM 2 MB optional		Main memory		
Free expansion slots	1 x mPCIe (half-size); 1 x mSATA (full-size)		4 x PCI; 1 x PCIe x 16; 1 x PCIe x 8; 1 x PCIe x 1 (all 312 mm)	2 x PCI; 2 x PCIe x16; 1 x PCIe x8; 2 x PCIe x4 (all 312 mm)		4 x PCIe x16 oder 2 x PCI; 2 x PCIe x 16 or 2x PCI x16 (all 312 mm)	7 x PCI; 2 x PCIe x16 or 3 x PCI; 6 x PCIe x 16; 2 x PCIe x4 (all 312 mm)	2 x PCI (185 mm) or 1 x PCIe x 16 (185 mm); 1 x PCI (185 mm) or 1 x PCIe x 1 (185 mm); 1 x PCIe x4 (185 mm); 1x PCI (240mm), 1x PCI (185mm), 1x PCIe x4 (185mm), 1x PCIe x16 (185mm)	2 x PCI (185 mm) or 1 x PCIe x 16 (185 mm); 1 x PCI (185 mm) or 1 x PCIe x 1 (185 mm); 1 x PCIe x 4 (185 mm)	Free expansion slots		
Graphics	Intel HD Graphics 400 integrated in processor, max. 1920 x 1200		Intel HD Graphics 4600 integrated in processor, Dynamic Video Memory up to 1.7 GB; max. resolution VGA/DVI-I: 1920 x 1200 / 60 Hz / 32-bit colors	Intel HD Graphics 510/530/P530 integrated in the processor with dynamic video memory up to 1.7 GB; max. DisplayPort resolution: 4096 x 2304 / 60 Hz / 32-bit colors; DVI: 1920 x 1200/60 Hz/32-bit colors; Graphics card: NVIDIA NVS 315 optional, dual-head: 2 x DVI-D or 2 x VGA; PCIe x 16, 1 GB; max. resolution (digital) 2560 x 1600/60 Hz/32-bit color depth		Intel UHD Graphics 630 im Processor integrated in the processor with Dynamic Video Memory up to 32 GB; DisplayPort resolution: 4096 x 2304 / 60 Hz / 32-bit color depth; DVI: 1920 x 1200 / 60 Hz / 32-bit; Graphics card: NVIDIA Quadro P400 optional; Triple Head: 3 x mDP (3x DP / DVI-D) / VGA via Adapter; PCIe x 16, 2 GB; max. resolution (digital) 4096 x 2160 / 60 Hz / 32-bit color depth	On board Intel UHD Graphics 630 (Core i3, i7) Intel UHD Graphics 610 (Celeron) resolution: 4k		Graphics			
Power supply / temporary voltage interruption	24 V DC (20.4 to 28.8 V); max. 10ms		AC: 100 – 240 V, 50 – 60 Hz / max. 17 ms	AC: 100 – 240V, 50 – 60 Hz / max. 20 ms (in acc. with NAMUR)	AC: 100 – 240 V, 50 – 60 Hz / max. 20 ms (in acc. with NAMUR); optional AC redundant: 100 – 240 V, 50 – 60 Hz / max. 20 ms	AC: 100 – 240 V, 50 – 60 Hz / max. 20 ms (in acc. with NAMUR); optional AC redundant: 100 – 240 V, 50 – 60 Hz / max. 20 ms	AC: 100 – 240 V; 50 – 60 Hz / max. 20 ms (in acc. with NAMUR); DC 24 V: 20.4 – 28.8 V		Power supply / temporary voltage interruption			
Operating system	Windows 7 Ultimate (64 Bit) MUI ¹⁾			Windows 7 Ultimate (32/64-bit) MUI ¹⁾ ; Windows 10 Enterprise 2015 LTSB (64-bit) MUI ¹⁾ ; Windows 10 Enterprise 2016 LTSB (64-bit) MUI ¹⁾ ; Windows Server 2008 R2 Standard Edition incl. 5 Clients (64-bit) MUI ¹⁾ ; Windows Server 2012 R2 Standard Edition incl. 5 Clients (64-bit) MUI ¹⁾ ; Windows Server 2016 Standard Edition incl. 5 Clients (64-bit) MUI ¹⁾		Windows 10 Enterprise 2016 LTSB (64-bit) MUI ¹⁾ ; Windows Server 2016 Standard Edition incl. 5 Clients (64-bit) MUI ¹⁾		Windows 10 Enterprise 2016 LTSB, 64-bit, MUI ¹⁾		Operating system		
Installed and activated										Installed and activated		
Additional	–			Suited for Linux		Suited for Linux (in preparation); VMware (ESXi) Certification in preparation		–		Additional		
Packages, bundles	Packages mit WinCC V7; WinCC RT Advanced			Packages mit WinCC V7; WinCC RT Advanced; WinCC RT Professional		Packages in preparation		Packages with WinCC V7; WinCC RT Advanced; WinCC RT Professional and WinAC RTX (F)		Packages, bundles		
Drives konfigurationen	Drives											
Hard disks	500 GB HDD		Installed internally: SATA 500 GB / 1 TB;	SATA 1 TB, 2 x 1 TB; RAID1 ¹⁾ (2x 1 TB Enterprise or 2x 2 TB Enterprise)	Installed internally or front-mounted in removable drive bay inserts: SATA 1 TB; 2 x 1 TB; RAID1 ¹⁾ (2 x 1 TB Enterprise or 2 x 2 TB Enterprise and optionally plus 2 TB as Hot Spare); RAID5 ¹⁾ (3 x 2 TB Enterprise optionally plus 2 TB as Hot Spare)	Installed internally or front-mounted in removable drive bay inserts: SATA 1 TB; 2 x 1 TB; RAID1 (2 x 1 TB Enterprise or 2 x 2 TB Enterprise and optionally plus 2 TB as Hot Spare); RAID1 configurations with Hardware RAID-controller and SAS HDD in preparation	Installed internally or front-mounted in removable drive bay inserts: SATA 1 TB; 2 x 1 TB; RAID1 (2 x 1 TB Enterprise or 2 x 2 TB Enterprise and optionally plus 2 TB as Hot Spare)	1x HDD 2.5" SATA at least 320 GB SSD 2.5" SATA at least 480 GB internal; M.2 SSD NVMe at least 512 GB; RAID1 2x SSD 2.5" ¹⁾ at least 480 GB internal or in removable drive bay	Hard disks			
Solid State Drive (SSD)	–		Installed internally: SATA 256 GB;	Installed internally: SATA 240 GB; 480 GB; 2x 480GB; RAID1 ¹⁾ (2x 480GB)	Installed internally or front-mounted in removable drive bay inserts: SATA 240 GB; 480 GB; 2x 480 GB; RAID1 ¹⁾ (2 x 480 GB)	Installed internally or front-mounted in removable drive bay inserts: SATA 480 GB; 960 GB; 2x 480 GB; RAID1 (2 x 480 GB); Installed internally in M.2 Slot: NVMe 512 GB; 1024 GB;	Installed internally or front-mounted in removable drive bay inserts: SATA 480 GB; 960 GB; 2x 480 GB; RAID1 (2 x 480 GB); Installed internally in M.2 Slot via adapter card: NVMe 512 GB; 1024 GB;	Solid State Drive (SSD)				
Optical drives	–		DVD ± R / RW (5,25")	–	DVD = R / RW (Slimline)	–	–	Optical drives				
Mounting locations	1x mSATA (full-size)		4 (internal: 1 x 3.5", front: 3 x 5.25")	2 (internal: 2 x 3.5"/2.5")	4 (front 3x 5.25" for internal 3 x 3.5"/2.5"; 1 x Slimline for ODD) or 5 (front 1 x 5.25"; 3 x low-profile removable drive bay inserts; 1 x Slimline for ODD) or 5 (front: 4 x low-profile removable drive bay inserts; 1 x Slimline for ODD)	3 (internal: 2 x 3.5"/2.5"; 1x 2.5") or 3 (front: 2 x low-profile removable drive bay inserts; 1 x 2.5" internal)	4 (front 3x 5.25" for internal 3 x 3.5"/2.5"; 1 x Slimline for ODD) or 5 (front 1 x 5.25"; 3 x low-profile removable drive bay inserts; 1 x Slimline for ODD) or 5 (front: 4 x low-profile removable drive bay inserts; 1 x Slimline for ODD)	Mounting locations				
Ports	Ports											
Fieldbus	–		PROFINET RT via Ethernet	PROFINET RT via Ethernet		PROFINET RT via Ethernet		PROFINET RT via Ethernet		Fieldbus		
Ethernet	2 x 10/100/1000 MB/s (RJ45)		2 x Realtek: 10 / 100 / 1000 MB / s (RJ45)	2 x Intel: 10 / 100 / 1000 MB / s (RJ45); teaming		3 x Intel: 10 / 100 / 1000 MB / s (RJ45); teaming		3x Gigabit Ethernet (iEIPN), RJ45 (thereof 2x Intel WGi210IT teaming)		Ethernet		
USB	2 x USB 3.0 2 x USB 2.0	2 x USB 3.0 4 x USB 2.0	USB 3.0: 2 x at the rear; USB 2.0: 2 x at the rear; 2 x at the front; 1 x internal	USB 3.0: 2 x at the front; 4 x at the rear ¹⁾ or 2 x at the rear USB 2.0: 4 x at the rear; 1 x internal ¹⁾		USB 3.1: 6 x at the rear (thereof 2x Type C); 1 x internal; USB 3.0: 2 x at the front		4 x USB 3.1 Gen.2 Type A 2x USB 3.1 Gen.2 Type C		USB		
Serial/parallel	2 x COM (RS232); 2 x COM (RS232/485/422)		4 x COM (RS232); 2 x COM (RS232/485/422)	1 x COM1 (V.24); 1 x COM2 (V.24)		1 x COM1 (V.24); 1 x COM2 (V.24) (optional); 1 x LPT (optional)		1 x COM1		Serial/parallel		
Graphics interface/DVI/DisplayPort	1 x DP, 1 x VGA		1 x VGA / 1 x DVI-D	1 x DVI-D/2 x DisplayPort V1.2 ¹⁾ or 1 x DisplayPort V1.2; 2 x VGA or 2 x DVI-D via PCIe graphics card (optional)		1 x DVI-D / 2 x DisplayPort V1.2; 3 x DisplayPort 1.4 / VGA / DVI-D via PCIe graphics card (optional)		1 x DVI-D / 2 x DisplayPort (Triple Display)		Graphics interface/DVI/DisplayPort		
Legacy interfaces	–		2 x PS / 2	2 x PS / 2		–		–		Legacy interfaces		
Audio	1 x Audio out		1 x Line In; 1 x Line Out; 1 x Mic.	1 x Line In; 1 x Line Out; 1 x Mic.		1 x Mic. / Line Out		–		Audio		
Monitoring/diagnostics functions	Monitoring/diagnostics functions											
Basic functionality	–		Temperature; fan; watchdog; HDD; RAID; SSD; CMOS battery (alarm locally by means of SIMATIC IPC DiagBase software)	Temperature; fan; watchdog; HDD; RAID; SSD; CMOS battery (alarm locally by means of SIMATIC IPC DiagBase software)		Temperature; fan; watchdog; HDD; RAID; SSD; CMOS battery; redundant power supply; (alarm locally by means of SIMATIC IPC DiagBase software)		Temperature; fan; watchdog; HDD; SSD; M.2; RAID; CMOS-battery (alarm locally by means of SIMATIC IPC DiagBase software)		Basic functionality		
Advanced functions	–		Temperature; fan; watchdog; HDD; RAID; SSD; CMOS battery System / Ethernet monitoring; Operating hours counter; Communication via Ethernet; SNMP and OPC interface (optionally via SIMATIC IPC DiagMonitor software)	Temperature; fan; watchdog; HDD; RAID; SSD; CMOS battery System / Ethernet monitoring; Operating hours counter; Communication via Ethernet; SNMP and OPC interface (optionally via SIMATIC IPC DiagMonitor software)		Temperature; fan; watchdog; HDD; RAID; SSD; CMOS battery; redundant power supply; System / Ethernet monitoring; Operating hours counter; Communication via Ethernet; SNMP and OPC interface (optionally via SIMATIC IPC DiagMonitor software)		Temperature; fan; watchdog; hard drives (SMART) System / Ethernet monitoring; Operating hours counter; Communication via Ethernet; SNMP and OPC interface (optionally via SIMATIC IPC DiagMonitor software)		Advanced functions		
Remote access	–		Via Intel Active Management Technology (iAMT) (at Core i5/i7 and Xeon) and SIMATIC IPC Remote Manager	Via Intel Active Management Technology (iAMT) (at Core i5/i7 and Xeon) and SIMATIC IPC Remote Manager		Via Intel Active Management Technology (iAMT) (at Core i5/i7 and Xeon) and SIMATIC IPC Remote Manager		Via Intel Active Management Technology (iAMT) 9.0 (Core i7) and SIMATIC IPC Remote Manager		Remote access		
Front LEDs	POWER; HDD		POWER; HDD; TEMP; FAN; HDD ALARM 0 / 1 / 2 / 3	POWER; HDD; TEMP; FAN; HDD ALARM 0 / 1 / 2 / 3		POWER; HDD; ETHERNET 1 / 2 / 3; WATCHDOG; TEMP; FAN; HDD 0 / 1 ALARM	POWER; HDD; ETHERNET 1 / 2 / 3; WATCHDOG; TEMP; FAN; HDD 0 / 1 / 2 / 3 ALARM	1 x Power; 3 x Users		Front-LEDs		
Ambient conditions	Ambient conditions											
Degree of protection	IP65 front, IP40 rear	IP40	IP20 front; IP20 rear	IP30 front; IP20 rear		IP41 front; IP20 rear		IP20	IP65 front; IP20 rear	Degree of protection		
Protection class	Protection class I according to IEC 61140			Protection class I according to IEC 61140		Protection class I according to IEC 61140		Protection class I according to IEC 61140		Protection class		
Vibration during operation ⁵⁾	10 – 58 Hz: 0.075 mm/s; 58 – 200 Hz: 9.8 m/s ²		–	20 – 58 Hz: 0.015 mm/s; 58 – 200 Hz: 2 m/s ² (approx. 0.2 g)		10 – 58 Hz: 0.0375 mm/s; 58 – 500 Hz: 5 m/s ² (approx. 0.5 g)		10 – 58 Hz: 0.075 mm/s; 58 – 500 Hz: 9.8 m/s ² (approx. 1 g)		Vibration during operation		
Shock load during operation ⁶⁾	150 m/s ² (approx. 15 g), 11 ms		–	9.8 m/s ² ; 20 ms (approx. 1 g)		50 m/s ² ; 30 ms (approx. 5 g)		–		Shock load during operation		
Relative humidity ⁸⁾	5 – 85% at 30 °C (no condensation)		5 – 80% at 25 °C (no condensation)	5 – 80% at 25 °C (no condensation)		5 – 85% at 30 °C (no condensation)		5 – 80% bei 25 °C (no condensation)		Relative humidity		
Ambient temperature in operation	0 – 45 °C at full processor power (Restrictions see manual)	0 – 45 °C at full processor power (Restrictions see manual)	5 – 40 °C at full processor performance	0 – 40 °C at full processor performance (see manual for limitations)		0 – 50 °C at full processor performance (see manual for limitations)		55 °C / 50 °C / 5 – 45 °C (10 watts to PCI / 20 watts to PCI / full expansion)		Ambient temperature in operation		
Electromagnetic compatibility (EMC)	Electromagnetic compatibility (EMC)											
Emitted interference	IEC 61000-6-4; CISPR 22:2004 Class A; FCC Class A		IEC 61000-6-4; CISPR 22; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3	EN 61000-6-3; EN 61000-6-4; CISPR 22 / EN 55022 Class B; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3		EN 61000-6-3; EN 61000-6-4; CISPR 22 Class B / EN 55032 Class B; FCC Class A; EN 61000-3-2 Class D; EN 61000-3-3		Technical data still pending		Emitted interference		
Approvals/directives	Approvals/directives											
Safety	IEC 60950-1			IEC 60950-1; EN 60950-1; UL 60950-1; CSA C22.2 No. 60950-1-07		IEC 61010-2-201; EN 61010-2-201; UL 61010-2-201; CSA C22.2 No 61010-2-201		Technical data still pending		Approvals/directives		
CE Mark/EU Directives, Certification	CE for use in industrial sector; cULus (UL 60950); KCC; EAC; FCC; BSMI		CE for use in industrial sector; cULus (UL 60950);RoHS; C-Tick; BSMI; KCC; EAC; FCC	CE for use in residential, commercial and industrial sector; cULus (UL 60950); RoHS; KC; C-Tick; BIS; EAC		CE for use in residential, commercial and industrial sector; cULus (UL 61010-2-201); RoHS; C-Tick; EAC		CE for use in residential, commercial and industrial sector; cULus (UL 61010-2-201); RoHS; C-Tick; EAC		CE Mark/EU Directives, Certification		
Dimensions and weight	Dimensions and weight											
Installation dimensions (W x H x D) in mm	12": 302 x 208 x 89 (320 x 226) 15": 388 x 240 x 89 (416,5 x 298) 19": 455 x 279 x 89 (483 x 337)	254 x 140 x 75	430 x 177 x 463	434 x 177 x 356		434 x 177 x 446		430 x 88 x 448	430 x 170 x 448	312 x 301 x 90 (incl. mounting rail)	19": 464 x 294 x 115; 22": 529 x 331 x 115; 24": 585 x 362 x 115	Installation dimensions (W x H x D) in mm Operator panel (B x H) in mm
Weight	> 3,6 kg		2,0 kg	from 13 kg		from 15 kg		from 16 kg	from 16 kg	approx. 6 kg	approx. 15 kg	Weight

¹⁾ MUI (multi-language user interface); 5 languages (ENG, GER, FR, SP, IT) ²⁾ GL, LRS, BV, DNV, ABS, Class NK ³⁾ Tested according to: IEC 60068-2-6 ⁴⁾ Tested according to: IEC 60068-2-27 ⁵⁾ Tested according to: IEC 60068-2-78, IEC 60068-2-30 ⁶⁾ Only for motherboard with C236 chipset

Specifications subject to change without prior notice