## **SIEMENS**

## **Data sheet**

## 6ES7672-8FC01-0YA0



SIMATIC S7-1500 Failsafe, Software Controller CPU 1508S F Single License f. 1 install., R-SW, SW and docum. on DVD, license key on USB flash drive, R-SW Class A, 6 languages (de,en,it,fr,es,zh), executable in Windows 7/10 reference HW: IPC4x7E, IPC6x7E, IPC8x7E, IPC627D, IPC827D, IPC677D

General information	
Product type designation	CPU 1508S F
Software version	V21.9
Product function	
• I&M data	Yes; I&M0 to I&M3
Engineering with	
<ul> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	V17
Configuration control	
via dataset	Yes
Memory	
SIMATIC memory card required	No; Use of the PC mass storage
Work memory	
<ul><li>integrated (for program)</li></ul>	12.5 Mbyte
<ul><li>integrated (for data)</li></ul>	100 Mbyte
• integrated (for CPU function library of CPU Runtime)	50 Mbyte
Load memory	
<ul> <li>integrated (on PC mass storage)</li> </ul>	1 024 Mbyte
Backup	
• with UPS	Yes; all memory areas declared retentive
<ul> <li>with non-volatile memory</li> </ul>	Yes; Depending on PC hardware
CPU processing times	
for bit operations, typ.	1 ns; On IPC427E, Intel Xeon processor
for word operations, typ.	2 ns; On IPC427E, Intel Xeon processor
for fixed point arithmetic, typ.	2 ns; On IPC427E, Intel Xeon processor
for floating point arithmetic, typ.	2 ns; On IPC427E, Intel Xeon processor
CPU-blocks	
Number of elements (total)	6 000; In addition to blocks such as DBs, FBs and FCs, UDTs, global constants, etc. are also regarded as elements
DB	
Number, max.	5 999; Number range: 1 to 65535
• Size, max.	16 Mbyte
FB	
<ul><li>Number, max.</li></ul>	5 998; Number range: 1 to 65535
• Size, max.	1 024 kbyte
FC	
Number, max.	5 999; Number range: 1 to 65535
• Size, max.	1 024 kbyte
OB	
• Size, max.	1 024 kbyte
<ul> <li>Number of free cycle OBs</li> </ul>	100

<ul> <li>Number of time alarm OBs</li> </ul>	20
<ul> <li>Number of delay alarm OBs</li> </ul>	20
<ul> <li>Number of cyclic interrupt OBs</li> </ul>	20
<ul> <li>Number of process alarm OBs</li> </ul>	50
<ul> <li>Number of DPV1 alarm OBs</li> </ul>	3
<ul> <li>Number of isochronous mode OBs</li> </ul>	1
<ul> <li>Number of technology synchronous alarm OBs</li> </ul>	2
Number of startup OBs	100
Number of asynchronous error OBs	4
Number of asynchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	04 11 4 0 71 6 511 1
per priority class	24; Up to 8 possible for F-blocks
Counters, timers and their retentivity	
S7 counter	
Number	2 048
Retentivity	
— adjustable	Yes
IEC counter	
Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
S7 times	
• Number	2 048
Retentivity	
·	Yes
— adjustable	165
IEC timer	A constant the three transfers of the second
• Number	Any (only limited by the main memory)
Retentivity	
— adjustable	Yes
Data areas and their retentivity	
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	135 kbyte; on SIMATIC IPC427D, IPC477D, IPC427E, IPC477E, IPC627E, IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.	
Retentive data area (incl. timers, counters, flags), max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  • Size, max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  • Size, max.  • Number of clock memories	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte  8; in 1 memory byte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  • Size, max.  • Number of clock memories  Data blocks  • Retentivity adjustable	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte  8; in 1 memory byte  Yes
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  • Size, max.  • Number of clock memories  Data blocks  • Retentivity adjustable  • Retentivity preset	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte  8; in 1 memory byte  Yes
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable  Retentivity preset  Local data  per priority class, max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  • Size, max.  • Number of clock memories  Data blocks  • Retentivity adjustable  • Retentivity preset  Local data  • per priority class, max.  Address area  Number of IO modules	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  • Size, max.  • Number of clock memories  Data blocks  • Retentivity adjustable  • Retentivity preset  Local data  • per priority class, max.  Address area  Number of IO modules  I/O address area	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable  Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable  Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data per priority class, max.  Address area  Number of IO modules  I/O address area Inputs Outputs  Subprocess images	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable  Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.  Hardware configuration  Number of distributed IO systems	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable  Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.  Hardware configuration  Number of distributed IO systems	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data per priority class, max.  Address area  Number of IO modules  I/O address area Inputs Outputs  Subprocess images Number of subprocess images, max.  Hardware configuration  Number of DP masters	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.  Hardware configuration  Number of DP masters  via PC interfaces	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.  Hardware configuration  Number of DP masters  via PC interfaces  Number of IO Controllers	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max.  Number of clock memories  Data blocks  Retentivity adjustable Retentivity preset  Local data  per priority class, max.  Address area  Number of IO modules  I/O address area  Inputs  Outputs  Subprocess images  Number of subprocess images, max.  Hardware configuration  Number of DP masters  via PC interfaces  Number of IO Controllers  via PC interfaces	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32
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Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max. Number of clock memories  Data blocks Retentivity adjustable Retentivity preset  Local data per priority class, max.  Address area  Number of IO modules  I/O address area Inputs Outputs  Subprocess images Number of subprocess images, max.  Hardware configuration  Number of DP masters via PC interfaces  Number of IO Controllers via PC interfaces  Time of day  Clock Type	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32  20  1  1; any combination of RT or IRT interfaces
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max. Number of clock memories  Data blocks Retentivity adjustable Retentivity preset  Local data per priority class, max.  Address area  Inputs Outputs  Subprocess images Number of subprocess images, max.  Hardware configuration  Number of distributed IO systems  Number of DP masters via PC interfaces  Number of day  Clock Type Deviation per day, max.	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32  20  1  1; any combination of RT or IRT interfaces
Retentive data area (incl. timers, counters, flags), max.  Extended retentive data area (incl. timers, counters, flags), max.  Flag  Size, max. Number of clock memories  Data blocks Retentivity adjustable Retentivity preset  Local data per priority class, max.  Address area  Number of IO modules  I/O address area Inputs Outputs  Subprocess images Number of subprocess images, max.  Hardware configuration  Number of DP masters via PC interfaces  Number of IO Controllers via PC interfaces  Time of day  Clock Type	IPC677E; 35 KB on SIMATIC IPC627D, IPC677D and IPC827D  100 Mbyte; When using PC mass storage for retentive data  16 kbyte 8; in 1 memory byte  Yes No  64 kbyte; max. 16 KB per block  8 192  32 kbyte 32 kbyte 32  20  1  1; any combination of RT or IRT interfaces

Clock avachranization	
Clock synchronization	Von
• supported	Yes
• to DP, master	No
• on Ethernet via NTP	Yes
on Windows clock, slave	Yes
Interfaces	
Number of interfaces	3
Number of PROFINIET interfaces	2
Number of PROFIBUS interfaces	1
1. Interface	OD 4005
Interface type  Number of connections	CP 1625
Interface types	192
RJ 45 (Ethernet)	Yes
— Transmission rate, max.	100 Mbit/s
Industrial Ethernet status LED	Yes
Number of ports	2
integrated switch	Yes
Protocols	, 66
PROFINET IO Controller	Yes
PROFINET IO Device	Yes
SIMATIC communication	Yes
Open IE communication	Yes
Web server	Yes
PROFINET IO Controller	
Services	
— Isochronous mode	Yes
— Direct data exchange	Yes; Requirement: IRT and isochronous mode (MRPD optional)
— shortest clock pulse	500 μs
— IRT	Yes
— PROFlenergy	Yes
— Prioritized startup	Yes; max. 32 PROFINET devices; if you want to use the "Prioritized startup" functionality in STEP7 for the PROFINET interface of the CPU, the CPU and the device must be seperated by means of a switch (e.g SCALANCE X205) or CP1625
— Number of connectable IO Devices, max.	256; the maximal amount of supported devices on all interfaces (PN/PB) is 384 in total
— Of which IO devices with IRT, max.	64
<ul> <li>Number of connectable IO Devices for RT, max.</li> </ul>	256
— of which in line, max.	256
<ul> <li>Number of IO Devices that can be simultaneously activated/deactivated, max.</li> </ul>	8
<ul> <li>IO Devices changing during operation (partner ports), supported</li> </ul>	Yes; the CPU and changing IO devices must be separated by a switch (e.g. SCALANCE X205)
Number of IO Devices per tool, max.	8
— Updating times	The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
Update time for IRT	
— for send cycle of 250 μs	250 µs to 4 ms
— for send cycle of 500 μs	500 μs to 8 ms
— for send cycle of 1 ms	1 ms to 16 ms
— for send cycle of 2 ms	2 ms to 32 ms
— for send cycle of 4 ms	4 ms to 64 ms
	Update time = set "odd" send clock (any multiple of 125 μs: 375 μs, 625 μs 3
<ul> <li>With IRT and parameterization of "odd" send cycles</li> </ul>	875 μs)
With IRT and parameterization of "odd" send cycles  Update time for RT	
Update time for RT	875 μs)
Update time for RT — for send cycle of 250 µs	875 μs) 250 μs to 128 ms
Update time for RT  — for send cycle of 250 μs  — for send cycle of 500 μs	250 μs to 128 ms 500 μs to 256 ms
Update time for RT  — for send cycle of 250 μs  — for send cycle of 500 μs  — for send cycle of 1 ms	250 μs to 128 ms 500 μs to 256 ms 1 ms to 512 ms

Innute may	16 kbyte
— Inputs, max. — Outputs, max.	16 kbyte
— Outputs, max.  PROFINET IO Device	10 hbyte
Services	
— Isochronous mode	No
— isociironous mode — IRT	Yes
— PROFlenergy	Yes
— Prioritized startup	Yes
— Shared device	Yes
Number of IO Controllers with shared device, max.	4
— Asset management record	Yes
2. Interface	Only and DDOEINET / IE interferes VO of the OIMATIO IDO Justed One will a
Interface type	Onboard PROFINET / IE interface X2 of the SIMATIC IPC, Intel Springville i210T
Number of connections	192
Interface types	
• RJ 45 (Ethernet)	Yes
— Transmission rate, max.	100 Mbit/s
<ul> <li>Number of ports</li> </ul>	1
integrated switch	No
Protocols	
<ul> <li>PROFINET IO Controller</li> </ul>	Yes
PROFINET IO Device	Yes
<ul> <li>SIMATIC communication</li> </ul>	Yes
Open IE communication	Yes
Web server	Yes
Media redundancy	No
PROFINET IO Controller	
Services	
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes
— Prioritized startup	Yes; max. 32 PROFINET devices; if you want to use the "Prioritized startup" functionality in STEP 7 for the PROFINET interface of the CPU, the CPU and the device must be separated by means of a switch (e.g. SCALANCE X205)
— Number of connectable IO Devices for RT, max.	128; the maximal amount of supported devices on all interfaces (PN/PB) is 384 in total
— of which in line, max.	128
Number of IO Devices that can be simultaneously	8
activated/deactivated, max.	
<ul> <li>Number of IO Devices per tool, max.</li> </ul>	8
— Updating times	The minimum value of the update time also depends on communication share set for PROFINET IO, on the number of IO devices, and on the quantity of configured user data
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
PROFINET IO Device	
Services	
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
Number of IO Controllers with shared device, max.	4
Asset management record	Yes
3. Interface	
Interface type	PROFIBUS with CP 5622, CP 5622 onboard
Number of connections	44
Protocols	
PROFIBUS DP master	Yes
PROFIBUS DF Illastel  PROFIBUS DP slave	No
SIMATIC communication	Yes
	160
PROFIBUS DP master	

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Number of DP slaves, max.	64
Services	
— Equidistance	No
— Isochronous mode	No
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
4. Interface	
Interface type	PROFIBUS with CP 5623
Number of connections	44
Interface types	
• RS 485	Yes
Protocols	
<ul> <li>PROFIBUS DP master</li> </ul>	Yes
<ul> <li>PROFIBUS DP slave</li> </ul>	No
SIMATIC communication	Yes; no PG/STEP 7 connection possible
PROFIBUS DP master	
<ul> <li>Number of DP slaves, max.</li> </ul>	125
Services	
— Equidistance	No
— Isochronous mode	No
Address area	
— Inputs, max.	8 kbyte
— Outputs, max.	8 kbyte
Protocols	
PROFIsafe	Yes
Number of connections	
Number of connections, max.	192
Number of connections reserved for ES/HMI/web	10
<ul> <li>Number of S7 routing paths</li> </ul>	16
Redundancy mode	
Media redundancy	
— MRP	Yes
— MRPD	Yes; Requirement: IRT
Switchover time on line break, typ.	200 ms; For MRP, bumpless for MRPD
Number of stations in the ring, max.	50
SIMATIC communication	
PG/OP communication	Yes
• S7 routing	Yes
S7 communication, as server	Yes
S7 communication, as server     S7 communication, as client	Yes
User data per job, max.	64 kbyte; BSEND/BRCV: 64 KB; PUT/GET: 960 bytes
	04 kbyte, B3END/BRCV. 04 RB, F01/GET. 900 bytes
Open IE communication  • TCP/IP	Yes
TOP/IP  — Data length, max.	
5	64 kbyte
ISO-on-TCP (RFC1006)      Data length, may	Yes 64 khyto
— Data length, max.	64 kbyte
UDP     Date langth may	Yes
— Data length, max.	2 kbyte
— UDP multicast	Yes; 128 multicast circuits (of which max. 5 via CP 1625)
• DHCP	Yes
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Web server	
• HTTP	Yes
• HTTPS	Yes
OPC UA	
	Yes; "Large" license required Yes: Data access (read, write), method call

— Security policies	Yes; Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	Yes; "anonymous" or by user name & password
<ul> <li>Number of connections, max.</li> </ul>	40
<ul> <li>Number of nodes of the client interfaces, recommended max.</li> </ul>	5 000
<ul> <li>Number of elements for one call of OPC_UA_NodeGetHandleList/OPC_UA_ReadList/OPC_U max.</li> </ul>	300
<ul> <li>Number of elements for one call of OPC_UA_NameSpaceGetIndexList, max.</li> </ul>	20
<ul> <li>Number of elements for one call of OPC_UA_MethodGetHandleList, max.</li> </ul>	100
<ul> <li>Number of simultaneous calls of the client instructions for session management, per connection, max.</li> </ul>	1
<ul> <li>Number of simultaneous calls of the client instructions for data access, per connection, max.</li> </ul>	5
<ul> <li>Number of registerable nodes, max.</li> </ul>	5 000
<ul> <li>Number of registerable method calls of OPC_UA_MethodCall, max.</li> </ul>	100
Number of inputs/outputs when calling OPC_UA_MethodCall, max.	20
OPC UA Server	Yes; Data access (read, write, subscribe), method call, custom address space
<ul> <li>Application authentication</li> </ul>	Yes
— Security policies	Yes; Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
<ul><li>User authentication</li></ul>	Yes; "anonymous" or by user name & password
<ul><li>Number of sessions, max.</li></ul>	64
<ul> <li>Number of accessible variables, max.</li> </ul>	200 000
<ul> <li>Number of registerable nodes, max.</li> </ul>	50 000
<ul> <li>Number of subscriptions per session, max.</li> </ul>	20
<ul><li>— Sampling interval, min.</li></ul>	10 ms
<ul><li>— Publishing interval, min.</li></ul>	10 ms
<ul><li>Number of server methods, max.</li></ul>	100
Number of inputs/outputs per server method, max.	20
<ul> <li>Number of monitored items, recommended max.</li> </ul>	10 000; for 1 s sampling interval and 1 s send interval
Number of server interfaces, max.	10
<ul> <li>Number of nodes for user-defined server interfaces, max.</li> </ul>	30 000
Further protocols	
• MODBUS	Yes; MODBUS TCP
S7 message functions	
Number of login stations for message functions, max.	32
Program alarms	Yes
Number of configurable program messages, max.	10 000
Number of loadable program messages in RUN, max.	5 000
Number of simultaneously active program alarms	1 000
<ul> <li>Number of program alarms</li> </ul>	1 000
Number of alarms for system diagnostics	200
Number of alarms for motion technology objects	160
Test commissioning functions	
Joint commission (Team Engineering)	Yes; Parallel online access possible for up to 10 engineering systems
Status block	Yes; up to 8 simultaneously
Single step  Number of breakpoints	Yes 8
Status/control	
Status/control variable	Yes
Variables	Inputs, outputs, memory bits, DB, times, counters
Number of variables, max.	inpute, outpute, memory bite, DD, times, counters
- of which status variables, max.	200
of which status variables, max.	200
Forcing	
<ul><li>Forcing</li></ul>	Yes

**Number of variables, max.  - Forward ** Present **  ** Present **  ** Present **  ** Number of entries, max.  - Forward **  ** Number of configurable Traces **  ** Number of LED **  ** Number of available Motion Control resources for technology objects **  - Per speed-controled axis **  - Per speed-controled axis **  - Per probability objects **  - Per probability objects **  ** Number of available Motion Control resources for technology objects **  - Per probability objects **  - Per probability objects axis **  - Per probability objects **  - Number of available Motion Control resources for technology objects **  - Per probability objects **  - Per probability objects axis **  - Per probability object		
Processor   Proc	Forcing, variables	Inputs, outputs
Present Number of entries, max — of which powerfail proof  Traces  • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of available Motion Control Property New Yes, HW LED of SIMATIC IPC227E, IPC427DIE, IPC627DIE, IPC6		200
**Number of entries, max** - of which powerfail-proof* 3000  Tracess*  **Unumber of configurable Traces* - **Memory size pet trace, max** - **ST2 kityle  **MEMORY size pet trace, max** - **ST2 kityle  **MEMORY size pet trace, max** - **ST2 kityle  **MEMORY size pet trace, max** - **MEMORY size pe		V
- of which powerfail-proof Traces  • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Number of configurable Traces • Remony size pet Trace, max.    ST2 keyte		
Number of configurable Traces		
Number of configurable Traces Alemony size per trace, max  Interrupts/depinestics/cetaus information  Diagnostics indication, LED  RUNSTOP LED PROFITOR PROFITOR  REPORTOP LED PROFITOR  REPORTOR  REPORT REPORTOR  REPORTO		300
Memory size pet frace, max.  Diagnosises indication LED  RUNISTOP LED  RUNISTOP LED  RUNISTOP LED  REROR LED  MAINT LED  Supported technology objects  Molon Control  Number of available Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Reported Motion Control resources for iterbrology objects  Molon Control  Number of available Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  4 800  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Motion Control resources for iterbrology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER  Required Required Required Report of the TIA Selection Tool or SIZER  Required Required Report of the TIA Selection Tool or SIZER  Required Report of the TIA Selection Tool or SIZER  Report of the TIA Selection Tool or		4
Degranation   LED	<u> </u>	
Diagnostics indication LEID  RUNSTOP LED  RUNSTOP LED  POSTTOR:  Number of available Motion Control resources for technology objects affects the cycle time of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program, selection guide via the TIA Selection Tool or SIZER of the PLC program selection guide via the TIA Selection Tool or SIZER of the PLC program selection guide via the TIA Selection Tool or SIZER of the PLC program selection guide via the TIA Selection Tool or SIZER of the PLC program selection guide via the TIA Selection Tool or SIZER of the PLC program selection guide via the TIA Selection Tool or SIZER of the PLC program selection Tool or SIZER of the P	· ·	312 kDyte
RUNNSTOP LED  PYSS: HW LED of SINATIC IPC227E, IPC427DIE, IPC627DIE, IPC627DI		
ERROR LED  *** MAINT LED  *** SINATIC IPC227E, IPC427DIE, IPC627DIE, IPC627D.  *** IPC677DIE  ***  *** MOtion Control  *** Number of available Motion Control resources for technology objects  *** Number of available Motion Control resources for technology objects  *** Required Motion Control resources  *** — per speed-controlled axis  *** — per synchronous axis  *** — per synchronous axis  *** — per controlled axis  *** — per cam track  *** — per cam track  *** — per proble  *** Positioning axis  *** — Number of positioning axes at motion control cycle  *** of a ms (typical value)  *** — Number of positioning axes at motion control cycle  *** of a ms (typical value)  *** — Number of positioning axes at motion control cycle  *** of B ms (typical value)  *** Dipl_Compact  *** PID_Compact  *** PID_Compact  *** PID_Compact  *** PID_Sistep  *** PID_Temp  *** Yes; IPD controller with integrated optimization  *** PID_Sistep  *** PID_Controller  *** PID_Compact  *** Pides a safety value  *** Occurring and measuring  *** High-speed counter  *** High-speed counter  *** High-speed counter  *** High-speed counter  *** Probability of failure (for service life of 20 years and repair time of 10 hours)  *** — Low demand mode: PFDayg in accordance with SL3  *** Hardware requirement  ***		Ves: HW LED of SIMATIC IPC227E IPC427D/E IPC627D/E IPC827D
#MAINT LED  ### WAINT LED  ### WAINT LED of SIMATIC IPC227E, IPC427DE, IPC827DE, IPC82	TROPIOTOL LED	
Motion Control  **Number of available Motion Control resources for technology objects affects the cycle time of the PLC program; selection guide via the TLA Selection Tool or SIZER  **Number of available Motion Control resources for technology objects affects the cycle time of the PLC program; selection guide via the TLA Selection Tool or SIZER  **Number of positioning axis  - per speed-controlled axis  - per synchronous axis  - per synchronous axis  - per external encoder  - per output cam  - per combus axis  - per probe  **Positioning axis  - Number of positioning axes at motion control cycle of 4 ms (typical value)  - Number of positioning axes at motion control cycle of 8 ms (typical value)  **Controller**  **PID_Compact**  **PID_Compact**  **PID_Satep**  **PID_Satep**  **PID_Temp**  **PID_Satep**  **PID_Temp**  **PID_Temp**  **PiD_Temp**  **PiD_Temp**  **Performance level according to ISO 13849-1*  **Playest sately classe achievable in safety mode**  **Performance level according to ISO 13849-1*  **PLA SELA CLE LEC 61508*  **Probability of failure (for service life of 20 years and repair time of 100 hours)  - Low demand mode: PFDar yin accordance with SIL3  - High demand/continuous mode: PFH in accordance with SIL3  - Hardware requirement  **Hardware requirement*  Hardware requirement*  Hardware requirement*  Hardware requirement*  **Hardware requirement*  Hardware requirement*  **Hardware requirement*  Hardware requirement*  **Hardware requirement*  **Final Mardware PiD Controller viith integrated optimization for temperature of 100 hours)  - Low demand mode: PFDar yin accordance with 100 hours)  - Low demand mod	• ERROR LED	
Motion Control  Number of available Motion Control resources for technology objects affects the cycle time of the PLC program; selection guide via the TIA Selection Tool or SIZER  Number of available Motion Control resources  Required Motion Control resources	• MAINT LED	
Number of available Motion Control resources for technology objects  Required Motion Control resources  Per speed-controlled axis  - per speed-controlled axis  - per sprothonous axis  - per synchronous axis  - per synchronous axis  - per output cam  - per cant track  - per cant track  - per prote  Positioning axis  - Number of positioning axes at motion control cycle of 4 ms (typical value)  Positioning axis  - Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller  PID_Compact  PID_Compact  PID_Tamp  PID_Tamp  Yes; PID controller with integrated optimization for valves  PHID_Step  PHID_Tamp  Courting and measuring  High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode  Per Porbability of failure (for service life of 20 years and repair time of 100 hours)  - Low demand mode: PFDavg in accordance with St.3  Hardware required  SilmATTIC IPC4x7E, IPC6x7E, IPC6x7D, IPC6x7D, configurations with NVRAM required: IPC6x7E, I	Supported technology objects	
Number of available Motion Control resources for technology objects  Required Motion Control resources  — per speed-controlled axis — per positioning axis — per positioning axis — per output cam — per output cam — per output cam — per proble — per output cam — per proble — per proble — Positioning axis — Number of positioning axes at motion control cycle of 4 ms (typical value) — Number of positioning axes at motion control cycle of 8 ms (typical value) — Number of positioning axes at motion control cycle of 8 ms (typical value)  PID_Compact PID_Compact PID_Compact PID_Step PID-Temp Yes; PID controller with integrated optimization for valves PID-Temp Yes; PID controller with integrated optimization for temperature  Countrillar PID_Step Yes; PID controller with integrated optimization for temperature  Countrillar PID_Step Yes; PID controller with integrated optimization for temperature  Countrillar PID_Step Yes; PID controller with integrated optimization for temperature  Countrillar with judgated optimization for temperature  Countrillar yes performed to temperature  Countrillar with integrated optimization for temperature  Countrillar yes performed to temperature  Promance level according to ISO 13849-1 PLe Standards, approvals, certificates  Highest safety class achievable in safety mode Performance level according to ISO 13849-1 PLe Standards, approvals, certificates  Highest safety class achievable in safety mode Promance level according to ISO 13849-1 PLe Sill, acc. to IEC 61508 Sill, 3 Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with Sill, 3 Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with Sill, 3 Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with Sill, 3 Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accor	Motion Control	
technology objects  Required Motion Control resources  — per speed-controlled axis — per synchronous axis — per synchronous axis — per synchronous axis — per oxternal encoder — per output cam — per cam track — per proble — per proble — Positioning axis — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — Number of positioning axes at motion control cycle — PID_Compact — PID_Compact — PID_Tomp — Yes; Universal PID controller with integrated optimization — PID_Tomp — Yes; PID controller with integrated optimization for temperature  Counting and measuring — High-speed counter — Yes  Standards, approvals, certificates  Highest safety class achievable in safety mode — Performance level according to ISO 13849-1 — Sit. acc. to IEC 61508 — Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode; PFDavg in accordance with Sit.3 — High demand/continuous mode: PFH in accordance with Sit.3 — High demand/continuous mode: PFH in accordance with Sit.3 — High demand/continuous mode: PFH in accordance with Sit.3 — High demand/continuous mode: PFH in accordance with Sit.3 — High core processor  • Single-core processor • Single-core processor • Single-core processor with hyper-threading • Multi-core processor with hyper-threading • Work memory, min.  8 Gbyte		
per positioning axis 80 per pysnchronous axis 160 per external encoder 80 per care track 160 per care track 160 per care track 160 per proble 40 Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) 60; On IPC427E, Intel Xeon processor Number of positioning axes at motion control cycle of 8 ms (typical value) 60; On IPC427E, Intel Xeon processor PID_Compact 9: Universal PID controller with integrated optimization 7 ves; PID controller with i		4 800
- per positioning axis	<ul> <li>Required Motion Control resources</li> </ul>	
- per synchronous axis - per external encoder - per output cam - per cam track - per probe - Positioning axis - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller - PID_Compact - PID_Compact - PID_Compact - PID_Step - PID_Temp - Yes; PID controller with integrated optimization for valves - PID_Temp - PID_Temp - Ves; PID controller with integrated optimization for temperature  Counting and measuring - High-speed counter - Yes - Standards, approvals, certificates - Highest safety class achievable in safety mode - Performance level according to ISO 13849-1 - Sill. acc. to IEC 61508 - Probability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode: PFDavg in accordance with Sill.3 - High demand/continuous mode: PFH in accordance with Sill.3 - High demand/continuous mode: PFH in accordance with Sill.3 - Hardware required - Single-core processor - Single-core processor - Single-core processor - Single-core processor with hyper-threading - Multi-core processor with hyper-threading - Multi-core processor with hyper-threading - Work memory, min Böbyte		
per external encoder per output cam per output cam per cam track per probe per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value)  Number of positioning axes at motion control cycle of 8 ms (typical value)  Number of positioning axes at motion control cycle of 8 ms (typical value)  Number of positioning axes at motion control cycle of 8 ms (typical value)  Number of positioning axes at motion control cycle of 8 ms (typical value)  Number of positioning axes at motion control cycle of 8 ms (typical value)  Number of positioning axes at motion control cycle of 8 ms (typical value)  PID_Compact	<ul><li>per positioning axis</li></ul>	80
- per output cam - per cam track - per probe - Postloning axis - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller - PID_Compact - PID_Compact - PID_Step - PID_Temp - Yes; Universal PID controller with integrated optimization - PID_Step - PID_Temp - Yes; PID controller with integrated optimization for valves - PID_Temp - Ves; PID controller with integrated optimization for temperature  Counting and measuring - High speed counter - Standards, approvals, contificates - Highest safety class achievable in safety mode - Performance level according to ISO 13849-1 - Sill acc. to IEC 61508 - Plobability of failure (for service life of 20 years and repair time of 100 hours) - Low demand mode; PFDavg in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3 - No Engle-core processor - Single-core processor - Single-core processor with hyper-threading - Multi-core processor with hyper-threading - Multi-core processor with hyper-threading - Occupied cores - Multi-core processor with hyper-threading - Occupied cores - Work memory, min Work memory, min Work memory, min Work memory, min.	— per synchronous axis	160
per cam track per probe Positioning axis Number of positioning axes at motion control cycle of 4 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value) Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller PID_Compact PID_Compact PID_Step Yes; Universal PID controller with integrated optimization PID_Step Yes; PID controller with integrated optimization for valves PID-Temp Yes PID-Temp PID-Temp Yes PID-Temp PID-Temp Yes PID-Temp PID	— per external encoder	80
- per probe Positioning axis - Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller PID_Compact PID_Step PiD_Step PiD_Step PiD_Step PiD_Step PiD_Step PiD_Step Pillo-Temp Pies: PID controller with integrated optimization for valves PID_Temp Pig-speed counter Pigh-speed counter Pigh	— per output cam	20
Positioning axis  - Number of positioning axes at motion control cycle of 4 ms (typical value)  - Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller  PID_Compact  PID_Compact  PID_Compact  PID_Temp  Yes; Universal PID controller with integrated optimization  PID_3Step  PID-Temp  Ves; PID controller with integrated optimization for valves  PID-Temp  Ves; PID controller with integrated optimization for temperature  Counting and measuring  High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode  Performance level according to ISO 13849-1  PLe  SIL acc. to IEC 61508  SIL 3  Probability of failure (for service life of 20 years and repair time of 100 hours)  - Low demand mode: PFDavg in accordance with SIL3  - High demand/continuous mode: PFH in accordance with SIL3  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC6x7E, IPC6x7E, IPC827D, configurations with NVRAM required; IPC6x7E, IP	— per cam track	160
- Number of positioning axes at motion control cycle of 4 ms (typical value) - Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller  • PID_Compact • PID_Compact • PID_Step • PID-Temp • PID_Temp • Pide typical value • PID_Temp • PID_Temp • Pide typical value • PID_Temp • PID_Temp • Pide typical value • Pide typi	— per probe	40
of 4 ms (typical value) — Number of positioning axes at motion control cycle of 8 ms (typical value)  Controller  • PID_Compact • PID_Step • PID_Temp • Pi	<ul> <li>Positioning axis</li> </ul>	
Controller  PID_Compact PID_Sitep PID_Step PID_Temp Pignor Yes; PID controller with integrated optimization of valves PID_Temp Pignor Yes; PID controller with integrated optimization for valves PID-Temp Yes; PID controller with integrated optimization for valves PID-Temp Yes; PID controller with integrated optimization for temperature  Counting and measuring Pignor Yes; PID controller with integrated optimization for temperature  Counting and measuring Pignor Yes; PID controller with integrated optimization for temperature  Counting and measuring Pignor Yes; PID controller with integrated optimization for temperature  Counting and measuring Pignor Yes; PID controller with integrated optimization for valves  Integrated optimization for valves Yes; PID controller with integrated optimization for valves Yes Yes SID controller with integrated optimization for valves Yes SIL 3  SIL 3  Probability of failure (for service life of 20 years and repair time of 100 hours)  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg in accordance with SIL 3  - Low demand mode: PFDavg		30; On IPC427E, Intel Xeon processor
PID_Compact PID_SStep Yes; Universal PID controller with integrated optimization PID_SStep Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature  Counting and measuring High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Probability of failure (for service life of 20 years and repair time of 100 hours) — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirem  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor with hyper-threading Multi-core processor with hyper-threading Occupied cores  Memory Work memory, min.  Yes  Yes Yes Yes Yes Work memory, min.  Yes Yes Yes Yes Work memory, min.  Yes Yes Yes Yes Work memory, min.		60; On IPC427E, Intel Xeon processor
PID_3step PID_Temp Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature  Counting and measuring High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Probability of failure (for service life of 20 years and repair time of 100 hours)  Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware requirement  Hardware required SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor Single-core processor Single-core processor with hyper-threading Multi-core processor with hyper-threading Multi-core processor with hyper-threading Occupied cores  Memory Work memory, min.  Yes  Yes Yes Yes Yes Yes Yes Yes Yes Y	Controller	
PID-Temp Yes; PID controller with integrated optimization for temperature  Counting and measuring High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode  Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3  Probability of failure (for service life of 20 years and repair time of 100 hours)  Low demand mode: PFDavg in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC647E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor with hyper-threading Multi-core processor with hyper-threading Occupied cores  No Multi-core processor with hyper-threading For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory  Work memory, min.  8 Gbyte	<ul><li>PID_Compact</li></ul>	Yes; Universal PID controller with integrated optimization
Counting and measuring      High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode      Performance level according to ISO 13849-1      SIL acc. to IEC 61508  Probability of failure (for service life of 20 years and repair time of 100 hours)      — Low demand mode: PFDavg in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  • Single-core processor  • Single-core processor with hyper-threading No  • Multi-core processor with hyper-threading Yes  • Multi-core processor with hyper-threading Yes  • occupied cores  1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory  • Work memory, min.  8 Gbyte	PID_3Step	Yes; PID controller with integrated optimization for valves
High-speed counter  Standards, approvals, certificates  Highest safety class achievable in safety mode  Performance level according to ISO 13849-1 SIL acc. to IEC 61508  Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor yes Multi-core processor with hyper-threading Occupied cores  No Cupied cores  No Single-core is reserved for the CPU 1507S  Memory Work memory, min.  8 Gbyte	PID-Temp	Yes; PID controller with integrated optimization for temperature
Standards, approvals, certificates  Highest safety class achievable in safety mode  • Performance level according to ISO 13849-1  • SIL acc. to IEC 61508  Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  • Single-core processor  • Single-core processor with hyper-threading  • Multi-core processor with hyper-threading  • Multi-core processor with hyper-threading  • occupied cores  Memory  • Work memory, min.  8 Gbyte	Counting and measuring	
Highest safety class achievable in safety mode  • Performance level according to ISO 13849-1  • SIL acc. to IEC 61508  Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  • Single-core processor  • Single-core processor with hyper-threading  • Multi-core processor with hyper-threading  • Multi-core processor with hyper-threading  • occupied cores  1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory  • Work memory, min.  8 Gbyte	High-speed counter	Yes
Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3  Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC6x7E, IPC6x7E, IPC8x7E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor with hyper-threading Multi-core processor with hyper-threading Occupied cores  1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory  Work memory, min.  8 Gbyte	Standards, approvals, certificates	
SIL acc. to IEC 61508  Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with SIL3 — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor yes Multi-core processor with hyper-threading Occupied cores  Memory  Work memory, min.  SIL 3  SIL 3  SIL 3  SIL 3  A 100 hours)   100 hours  100 hour	Highest safety class achievable in safety mode	
Probability of failure (for service life of 20 years and repair time of 100 hours)  — Low demand mode: PFDavg in accordance with SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC647E  Processor  • Single-core processor  • Single-core processor with hyper-threading  • Multi-core processor yes  • Multi-core processor with hyper-threading  • occupied cores  Memory  • Work memory, min.  8 Gbyte	Performance level according to ISO 13849-1	PLe
- Low demand mode: PFDavg in accordance with SIL3 - High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor yes Multi-core processor with hyper-threading Occupied cores  Memory  Work memory, min.  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  1, For multicore processor with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S	• SIL acc. to IEC 61508	SIL 3
SIL3  — High demand/continuous mode: PFH in accordance with SIL3  Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  • Single-core processor  • Single-core processor with hyper-threading  • Multi-core processor with hyper-threading  • Multi-core processor with hyper-threading  • occupied cores  Memory  • Work memory, min.  8 Gbyte	Probability of failure (for service life of 20 years and repair time	e of 100 hours)
Hardware requirement  Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor Multi-core processor with hyper-threading Multi-core processor with hyper-threading Occupied cores  Single-core processor with hyper-threading No Multi-core processor with hyper-threading Yes Occupied cores  1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory  Work memory, min.  8 Gbyte		< 2.00E-05
Hardware required  SIMATIC IPC4x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Multi-core processor Multi-core processor with hyper-threading SIMATIC IPC6x7E, IPC627D, IPC677D, IPC827D, configurations with NVRAM required; IPC6x7E, IPC847E  No Single-core processor Single-core processor with hyper-threading No Multi-core processor with hyper-threading Yes Occupied cores  1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory Work memory, min.  8 Gbyte		< 1.00E-09
required; IPC6x7E, IPC847E  Processor  Single-core processor Single-core processor with hyper-threading Mo Multi-core processor Multi-core processor with hyper-threading Coccupied cores  T; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S  Memory Work memory, min.  8 Gbyte	Hardware requirement	
Processor  Single-core processor Single-core processor with hyper-threading Mo Multi-core processor Multi-core processor with hyper-threading Cocupied cores  Memory Work memory, min.  No No Yes Yes 1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S	Hardware required	
<ul> <li>Single-core processor</li> <li>Single-core processor with hyper-threading</li> <li>Multi-core processor</li> <li>Multi-core processor with hyper-threading</li> <li>Multi-core processor with hyper-threading</li> <li>Occupied cores</li> <li>1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S</li> </ul> Memory <ul> <li>Work memory, min.</li> <li>8 Gbyte</li> </ul>	Processor	
<ul> <li>Single-core processor with hyper-threading</li> <li>Multi-core processor</li> <li>Multi-core processor with hyper-threading</li> <li>Occupied cores</li> <li>1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S</li> <li>Memory</li> <li>Work memory, min.</li> <li>8 Gbyte</li> </ul>		No
<ul> <li>Multi-core processor</li> <li>Multi-core processor with hyper-threading</li> <li>occupied cores</li> <li>1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S</li> <li>Memory</li> <li>Work memory, min.</li> <li>8 Gbyte</li> </ul>		
<ul> <li>Multi-core processor with hyper-threading</li> <li>occupied cores</li> <li>1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S</li> <li>Memory</li> <li>Work memory, min.</li> <li>8 Gbyte</li> </ul>		
<ul> <li>occupied cores</li> <li>1; For multicore processors with activated Hyper-Threading, one complete physical core is reserved for the CPU 1507S</li> <li>Memory</li> <li>Work memory, min.</li> <li>8 Gbyte</li> </ul>	·	
physical core is reserved for the CPU 1507S  Memory  Work memory, min.  8 Gbyte		
Work memory, min.  8 Gbyte	- 000upiou 00100	
	Memory	
Hard disk memory required for installation     720 Mbyte	Work memory, min.	8 Gbyte
That a distribution of the analysis	<ul> <li>Hard disk memory required for installation</li> </ul>	720 Mbyte
• Temporary hard disk memory for installation 230 Mbyte	Temporary hard disk memory for installation	230 Mbyte

<ul> <li>Hard disk memory required at runtime</li> </ul>	1 000 Mbyte
Operating systems	
Runs under operating system	
• Windows 7	Yes; Professional, Enterprise, Ultimate (32 bit and 64 bit); Windows Embedded Standard 7 with delivery image of the SIMATIC IPC
Windows 10	Yes; Windows 10 Enterprise 2016 LTSB, 64-bit, MUI on IPC2x7E, IPC6x7D, IPC8x7D; Windows 10 Enterprise 2019 LTSC 64-bit, MUI on IPC2x7E, IPC4x7E, IPC6x7E, IPC8x7E
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— STL	Yes
— SCL	Yes
— CFC	No
— GRAPH	Yes
Know-how protection	
<ul> <li>User program protection/password protection</li> </ul>	Yes
<ul> <li>Copy protection</li> </ul>	Yes
Block protection	Yes
Access protection	
<ul> <li>Protection level: Write protection</li> </ul>	Yes
<ul> <li>Protection level: Read/write protection</li> </ul>	Yes
<ul> <li>Protection level: Write protection for Failsafe</li> </ul>	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	
<ul> <li>lower limit</li> </ul>	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Open Development interfaces	
Size of ODK SO file, max.	9.8 Mbyte

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