SIEMENS

Data sheet

6ES7518-4JP00-0AB0



SIMATIC S7-1500H, CPU 1518HF-4 PN, central processing unit with 9 MB work memory for program and 60 MB for data, 1st interface: PROFINET RT with 2-port switch, 2nd interface: PROFINET, 3rd interface: PROFINET, 4th/5th interface: H-SYNC, SIMATIC Memory Card required

General information	
Product type designation	CPU 1518HF-4PN
HW functional status	FS01
Firmware version	V2.9
Product function	
● I&M data	Yes; I&M0 to I&M3
Isochronous mode	No
Engineering with	
 STEP 7 TIA Portal configurable/integrated from version 	V17
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	6
Mode selector switch	1
Supply voltage	
Type of supply voltage	24 V DC
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
 Mains/voltage failure stored energy time 	5 ms
Input current	
Current consumption (rated value)	1.55 A
Current consumption, max.	1.95 A
Inrush current, max.	2.4 A; Rated value
l²t	0.02 A ² ·s
Power	
Infeed power to the backplane bus	12 W
Power consumption from the backplane bus (balanced)	30 W
Power loss	
Power loss, typ.	24 W
Memory	
Number of slots for SIMATIC memory card	1
SIMATIC memory card required	Yes
Work memory	
 integrated (for program) 	9 Mbyte

 integrated (for data) 	60 Mbyte
Load memory	
 Plug-in (SIMATIC Memory Card), max. 	32 Gbyte
Backup	
maintenance-free	Yes
CPU processing times	
for bit operations, typ.	4 ns
for word operations, typ.	6 ns
for fixed point arithmetic, typ.	6 ns
for floating point arithmetic, typ.	24 ns
CPU-blocks	
Number of elements (total)	20 000; Blocks (OB, FB, FC, DB) and UDTs
DB	
Number range	1 60 999; subdivided into: number range that can be used by the user: 1 59 999, and number range of DBs created via SFC 86: 60 000 60 999
• Size, max.	16 Mbyte; For DBs with absolute addressing, the max. size is 64 KB
FB	
Number range	0 65 535
• Size, max.	1 Mbyte
FC	
Number range	0 65 535
• Size, max.	1 Mbyte
OB	
• Size, max.	1 Mbyte
Number of free cycle OBs	100
Number of time alarm OBs	20
Number of delay alarm OBs	20
 Number of cyclic interrupt OBs 	20; with minimum OB 3x cycle of 100 µs
 Number of process alarm OBs 	50
Number of startup OBs	100
Number of asynchronous error OBs	4
Number of synchronous error OBs	2
Number of diagnostic alarm OBs	1
Nesting depth	
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	No.
— adjustable	Yes
S7 times	0.040
Number	2 048
Retentivity	X
— adjustable	Yes
IEC timer	Any (and) limited by the main many)
Number	Any (only limited by the main memory)
Retentivity	Vec
— adjustable	Yes
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	768 kbyte; In total; available retentive memory for bit memories, timers, counters, DBs, and technology data (axes): 700 KB
Flag	16 khuta
• Size, max.	16 kbyte

Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	o, o clock memory bit, grouped into one clock memory byte
Retentivity adjustable	Yes
Retentivity preset	No
Local data	
	64 kbyte; max. 16 KB per block
per priority class, max.	04 KByte, max. To KB per block
Address area	0.400, many gumb ag of goodylag (sylwas dylag
Number of IO modules	8 192; max. number of modules / submodules
I/O address area	20 lubutes All inpute are in the presses image
Inputs	32 kbyte; All inputs are in the process image 32 kbyte; All outputs are in the process image
Outputs	52 kbyte, All outputs are in the process image
per integrated IO subsystem	16 khuta
— Inputs (volume) — Outputs (volume)	16 kbyte
Subprocess images	16 kbyte
Number of subprocess images, max.	32
	5z
Hardware configuration	1
Number of distributed IO systems	1
Number of IO Controllers	1
• integrated	1
Time of day	
Clock	
• Type	Hardware clock
Backup time	6 wk; At 40 °C ambient temperature, typically
Deviation per day, max.	10 s; Typ.: 2 s
Operating hours counter	
Number	16
Clock synchronization	Y.
• supported	Yes
on Ethernet via NTP	Yes
Interfaces	
Number of PROFINET interfaces	3
1. Interface	
Interface types	
• RJ 45 (Ethernet)	Yes; X1
Number of ports	2
integrated switch	Yes
Protocols	
• IP protocol	Yes; IPv4
PROFINET IO Controller	Yes
PROFINET IO Device	No
SIMATIC communication	Yes; Only Server
Open IE communication	Yes; Optionally also encrypted
Web server	No
Media redundancy	Yes
PROFINET IO Controller	
Services	Vec
— PG/OP communication	Yes No
— Isochronous mode — IRT	No
 — PROFlenergy — Number of connectable IO Devices, max. 	Yes; per user program 256
Update time for RT	200
— for send cycle of 1 ms	1 ms to 512 ms
2. Interface	
Interface types	Vec: V2
RJ 45 (Ethernet)	Yes; X2

 Number of ports integrated switch No Protocols Protocol Yes, IPv4 Protocol Yes, IPv4 Protocol Yes, IPv4 Protocol Yes, Chry Server Open IE communication Yes, Optionally also encrypted Web server No No entropy of the server No RJ 46 (Ethernet) Yes, Chyl Server No Protocol Yes, Yas, X3 Number of ports 1 integrated switch No Protocol Yes, Yas, X3 Number of ports 1 integrated switch No Protocol Yes, Yas, Yas, X3 Number of ports 1 integrated switch No Protocol Yes, Yas, Yas, Yas, Yas, Yas, Yas, Yas, Ya		4
Protocol Yes, IPv4 • IP protocl Yes, IPv4 • PROFINET IO Device No • SIMATIC communication Yes, Only Server • Open IE communication Yes, Only Server • Open IE communication Yes, Only Server • Open IE communication Yes, Only Server • Rul 45 (Ethernet) Yes, X3 • Number of ports 1 • Interface 1 • Integrated switch No Protocol Yes, X3 • Number of ports 1 • Integrated switch No Protocol Yes, IPv4 • SIMATIC communication Yes, IPv4 • Similar Communication Yes, Only Server • Open IE communication Yes, Only Server • Interface bype Pluggable synchronization submodule (FO) Plugin Interface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 • 100 Mbps Yes, Only possible at the X3 Interface of the CPU 1518 • Autorogation Yes • Inductrial Ethernet status LED Yes • Number of connections, max. 320 • Number of connections, max. 320 • Number of connections, max. 320 • Number of connections, subgated interfaces 320		
Pi Protocol Yes; IPv4 PROFINET IO Controller No SIMATIC communication Yes; Only Server Open IE communication Yes; Only Server No Media redundancy No No Subtraface Interface type Protocol Yes; IPv4 Yes; IPv4 Yes; X3 Yes; IPv4 Yes; X3 Yes; IPv4 Yes; IPv4 Yes; X3 Yes; IPv4 Yes; IPv4 Yes; X3 Yes; IPv4		NO
PROFINET IC Controller No PROFINET IC Controller No SIMATIC communication Yes; Only Server Open IE communication Yes; Only Server No No Web server No Interface types Interface types Plottoch 1 Interface types 1 Interface types Plottoch Plottoch 1 Interface types Plottoch Plottoch Yes; IPv4 SIMATIC communication Yes; IPv4 SIMATIC communication Yes Open IE communication Yes Plottoch Synchronization submodule (FC) Plugable synchronization module 6ES7860-1CB00-0AA5 or 6ES7860-1FB00-0A45 Otherface Synchronization module 6ES7860-1CB00-0AA5 or 6ES7860-1FB00-0A45 Interface type Plugable synchronization submodule (FC) Plugable synchronization module 6ES7860-1CB00-0AA5 or 6ES7860-1FB00-0A45 Otherface type Yes Interface type Yes Number of connections Yes Number of connections max. 320 Number of connections, max		Vee: IDv4
• PROFINET IC Device No • SIMATIC communication Yes; Optionally also encrypted • Web server No • Media redundancy No • Interface Interface Interface stypes • • R/J 45 (Ethernet) Yes; X3 • Number of ports 1 • Interface stypes • • IP protocol Yes; IPv4 • SIMATIC communication Yes; Yes • IP protocol Yes; Only Server • Open IE communication Yes; Yes • Interface type Plugable synchronization submodule (FO) Protocol Yes; Only Server • Open IE communication Yes; Only Server • Interface type Plugable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Plugable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Yes; Only possible at the X3 interface of the CPU 1518 • 100 Mbps Yes; Only possible at the X3 interface of the CPU 1518 • Autocrossing Yes; Only possible at the X3 interface of the CPU 1518 • Number of connections integrated interface; 320 only via 151 interface (X1) • Number of storections undergated interface; 320 only via 151 interface (X1) • Media redundancy only via 151 interface (X1)		
• SIMATIC communication Yes: Optionally also encrypted • Open E communication Yes; Optionally also encrypted • Web server No • Notate edundancy No • Rotates types • • Rotates types • • Rotates types • • Number of ports 1 • Interface types • • Protocol Yes; RN4 • SIMATIC communication Yes; Only Server • Open E communication Yes; Nothronization module SES/960-1/CB00-0AA5 or SES/960-1/FB00-0A5 • Number for conscions Yes; Only possible at the X3 interface of the CPU 1518 • Autorossing Yes; Only possible at the X3 interface of the CPU 1518 • Autorossing Yes; Only possible at the X3 interface of the CPU 1518 • Number of connections, max. 320 • Number of connections, max. 320 • Number of Strong paths 64 Redunatory mode <td></td> <td></td>		
Open IE communication Yes: Optionally also encrypted No Media redundancy No Interface bypes Rul 45 (Ethernet) Yes; X3 Number of parts Interface bypes Interface bypes I		
• Veb server No • Media redundancy No • Media redundancy No • RU4 ds (Ethernet) Yes; X3 • Number of parts 1 • integrated switch No • Protocol Yes; IPV4 • If P protocol Yes; Only Server • Open IE communication Yes • Protocol Yes • Interface type Plugable synchronization submodule (FO) Plug-in interface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Plugable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Ves Interface type Ves Interface type Yes Interface type Yes </td <td></td> <td></td>		
• Media redundancy No 2. Interface types . • RU 45 (Ethernet) Yes; X3 • Number of ports 1 • integrated switch No Protocols . • IP protocol Yes; IPV4 • SIMATIC communication Yes; Only Server • Open IE communication Yes Interface type Pluggable synchronization submodule (FO) Plugable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 . Interface type Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Yes • 100 Mps Yes • 100 Mps Yes • 100 Mps Yes • 100 Mps Yes • Autorossing Yes • Industrial Ehernet status LED Yes • Number of connections, max. 320 • Number of connections, supported Yes; as MRP ring node acco		
J. Interface Interface types • RJ 45 (Ethernet) Yes; X3 • integrated switch No Protocols Yes; IPv4 • SIMATIC communication Yes; Only Server • Open IE communication Yes; Only Server • Open IE communication Yes; Only Server • Open IE communication Yes; Only Descent CEB00-0A5 or 6ES7960-1CB00-0A5 or 6ES7960-1FB00-0A5 Interface type Pluggable synchronization module 6ES7960-1CB00-0A5 or 6ES7960-1FB00-0A5 Interface type Plugable synchronization module 6ES7960-1CB00-0A5 or 6ES7960-1FB00-0A5 Interface type Plugable synchronization module 6ES7960-1CB00-0A5 or 6ES7960-1FB00-0A5 Interface type Plug-in interface type Interface type Plug-in interface of the CPU 1518 • 1000 Mbps Yes • 1000 Mbps Yes • Autocrossing Yes • Number of connections, max. 320 • Number of connections reserved for ES/HMI/web 10 • Number of soncetions via integrated interfaces 320 • Number of soncetions via integrated interfaces 320 • Number of soncetions reserved for ES/HMI/web 10 • Number of s		
Interface types • Var5 (Ethernet) • Var5 (Ethernet) • Var5 (Ethernet) • Integrated switch No • Import of ports • IP protocol • Open the communication • Number of connections reserved for ES/HMI/Web • Open the communication • Number of connections reserved for ES/HMI/Web • Open the communication • Open the communication • O		NU
• RJ 45 (Ethernet) Yes; X3 • Number of ports 1 • Integrated switch No Protocols Yes; IPv4 • IM protocol Yes; IPv4 • SIMATIC communication Yes; IPv4 • Open IE communication Yes • Open IE communication Yes Interface type Plugable synchronization submodule (FO) Plug-in interface modules Synchronization module 6ES7980-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Plugable synchronization module 6ES7980-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface type Plug-in interface of the CPU 1518 • 1000 Mbps Yes • 1000 Mbps Yes • 1000 Mbps Yes • Number of connections, max. 320 • Number of connections waintegrated interface 320 • Number of connections via integrated interface 320 • Number of connections supported Yes; was RNP ring node according to IEC 62439-2 Edition 2.0 MRP Yes; was RNP ring node according to IEC 62439-2 Edition 3.0 • MRP No No - MRPD Yes; encryption with TLS V1.3 pre-selected • SToommunication <		
• Number of ports 1 • Integrated switch No Protocol Yes; IPv4 • ISINATIC communication Yes; Only Server • Open IE communication Yes • Interface type Pluggable synchronization submodule (FO) Plugin Interface modules Synchronization module GES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Pluggable synchronization module GES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface types - RL 45 (Ethernet) - • 100 Mbps Yes • Industrial Ethernet status LED Yes • Number of connections, max. 320 • Number of connections reserved for ESHMILveb 10 • Number of connections is a integrated interfaces 320 • Number of connections, max. 320 <td></td> <td>Voc V2</td>		Voc V2
• integrated switch No Protocods Ves; IPv4 • SIMATIC communication Yes; Only Server • Open IE communication Yes; Only Server • Open IE communication Yes; Only Server • Interface type Pluggable synchronization submodule (FO) Plug-in Interface type Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface types Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface types Ves; Only possible at the X3 interface of the CPU 1518 • 1000 Mbps Yes; Only possible at the X3 interface of the CPU 1518 • Autocrossing Yes • Autocrossing Yes • Autocrossing Yes • Number of connections, max. 320 • Number of connections reserved for ESHMI/web 10 • Number of connections reserved for ESHMI/web 10 • Number of connections reserved for ESHMI/web 20 • Number of connections reserved for ESHMI/web 10 • Number of connections, max. 320 • Number of connections supported Yes; SNRP ring node according to IEC 62439-2 Edition 2.0 • NeP Media redundancy only via 1st interface (X1) - MRP Yes; SNRP ring node according to IEC 62439-2 Edition 3.0 • MRP Sommunication <td></td> <td></td>		
Protocols Ves; IPv4 • IN protocol Yes; Only Server • Open IE communication Yes; Only Server • Interface type Pluggable synchronization submodule (FO) Interface type Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Pluggable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Plugable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Yes RJ 45 (Ethernet) Yes • 1000 Mbps Yes; Only possible at the X3 interface of the CPU 1518 • Autoregotiation Yes • Autoregotiation Yes • Autoregotiation Yes • Number of connections, max. 320 • Number of connections, max. 320 • Number of connections via integrated interfaces 320 • Number of Strong paths 64 Redundancy mode Ves; MRP Automanager according to IEC 62439-2 Edition 2.0 - MRPI Yes; MRP Automanager according to IEC 62439-2 Edition 3.0 - MRPD No - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, ma		
• IP protocol Yes; IPv4 • SIMATIC communication Yes; Ohly Server • Open IE communication Yes A.Interface Pluggable synchronization submodule (FO) Plug-in intraface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface type Plugable synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface types R145 (Ethernet) • 100 Mbps Yes • 100 Mbps Yes; Only possible at the X3 interface of the CPU 1518 • Autoregolation Yes • Autoregolation Yes • Autorespondent Yes • Number of connections, max. 320 • Number of connections via integrated interfaces 320 • Number of connections via integrated interfaces 320 • Number of S7 routing paths 64 Redundancy only via 1st interface (X1) - MRP interconnection, suported Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 Media redundancy only via 1st interface (X1) - MRP interconnection, suported Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 SiMATIC communication Yes; encryption with TLS V1.3 pre-selected <td></td> <td>NO</td>		NO
 SIMATIC communication Yes; Only Server • Open IE communication Yes Alnterface type Plug-bit interface type Plug-bit interface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface types RL45 (Ethernet) Yes; Only possible at the X3 interface of the CPU 1518 Autoregotiation Yes; Only possible at the X3 interface of the CPU 1518 Autoregotiation Yes; Only possible at the X3 interface of the CPU 1518 Autoregotiation Yes; Only possible at the X3 interface of the CPU 1518 Autoregotiation Yes Industrial Ethernet status LED Yes Protocols Number of connections, max. 320 Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of connections via integrated interfaces Number of S7 routing paths Hedia redundancy MRP interconnection, supported Yes; SMRP Automanager according to IEC 62439-2 Edition 2.0 Yes; SMRP Automanager according to IEC 62439-2 Edition 2.0 Yes; SMRP ing node according to IEC 62439-2 Edition 2.0 SMATIC communication Ves; SMRP Automanager according to IEC 62439-2 Edition 3.0 No SMMATIC communication Yes; encryption with TLS V1.3 pre-selected S7 communication, as server Yes S7 communication, as server Yes Open IE communication Yes Open IE communication, as server Yes Open IE communication, as server Yes Data length, max. Several passive connections per port, supported Yes 		Ves: IDv/
Open IE communication Yes Interface type Plugable synchronization submodule (FO) Prug-in interface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface types RI 45 (Ethernet) * 100 Mbps Yes * 100 Mbps Yes * Autoregotiation Yes * Number of connections, max. 320 * Number of connections reserved for ES/HMI/web 10 * Number of connections reserved for ES/HMI/web 10 * Number of connections, max. 320 * Number of connections reserved for ES/HMI/web 10 * Number of connections reserved for ES/HMI/web 10 * Number of connections reserved for ES/HMI/web 10 * Number of connections sub integrated interfaces 320 * Number of connections reserved for ES/HMI/web 10 * Number of connections in max. 50 Media redundancy		
4. Interface Pluggable synchronization submodule (FO) Plug-in interface type Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface types Interface types RJ 45 (Ethernet) • • 1000 Mbps Yes • 1000 Mbps Yes • 1000 Mbps Yes • 1000 Mbps Yes • Autonegotiation Yes • Autoregotiation Yes • Autoregotiation Yes • Autoregotiation Yes • Number of connections, max. 320 • Number of connections via integrated interfaces 320 • Number of S7 routing paths 64 Redundancy only via 1st interface (X1) - MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 - MRP Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 - MRP Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected • PC/OP communication, as server Yes <tr< td=""><td></td><td></td></tr<>		
Interface type Plugable synchronization submodule (FQ) Plug-in interface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00- 0AA5 Interface types RJ 45 (Ethernet) • 100 Mbps Yes • 100 Mbps Yes • 100 Mbps Yes • Autoregotiation Yes • Autoregotiation Yes • Industrial Ethernet status LED Yes Protocols Yes Number of connections, max. 320 • Number of connections reserved for ES/HMI/web 10 • Number of connections reserved for ES/HMI/web 10 • Number of connections, max. 320 • Number of connections, max. 320 • Number of connections reserved for ES/HMI/web 10 • Number of So roting paths 64 Redundancy only via 1st interface (X1) - MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 - MRPD No - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 SIMATIC communication Y	-	
Plug-in Interface modules Synchronization module 6ES7960-1CB00-0AA5 or 6ES7960-1FB00-0AA5 Interface types RI 45 (Ethernet) RI 45 (Ethernet) Yes • 100 Mbps Yes • 100 Mbps Yes • Autonegotiation Yes • Autorcossing Yes • Industrial Ethernet status LED Yes Protocols Yes Number of connections, max. 320 • Number of connections via integrated interfaces 320 • Number of S7 routing paths 64 Redundancy only via 1st interface (X1) — Media redundancy only via 1st interface (X1) — MRP Yes; as MRP ring node according to IEC 62439-2 Edition 2.0 Yes; as MRP non one of one one of ins in the ring, max. 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected • S7 communication Yes • S7 communication, as server Yes • S7 communication Yes • S7 com		Pluggable synchronization submodule (EQ)
Interface types Interface of the CPU 1518 Interface		
Interface types RJ 45 (Ethernet) • 100 Mbps Yes • 100 Mbps Yes; Only possible at the X3 interface of the CPU 1518 • Autonegotiation Yes • Autocrossing Yes • Industrial Ethernet status LED Yes Protocols Yes Number of connections max. 320 • Number of connections via integrated interfaces 320 • Number of S7 routing paths 64 Redundancy only via 1st interface (X1) — MRP Yes; SMRP Automanager according to IEC 62439-2 Edition 2.0 — MRPD Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 No No — Switchover time on line break, typ. 200 ms; PROFINET MRP — Number of stations in the ring, max. 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected • S7 communication Yes • S7 communication, as client No • CPO/IP Yes • TCP/IP Yes • Data length, max. G4 kbyte • Supported Yes	Plug-In Interface modules	
RJ 45 (Ethernet) 100 Mbps Yes 000 Mbps Yes; Only possible at the X3 interface of the CPU 1518 Autocrossing Yes Industrial Ethernet status LED Yes Protocols Number of connections, max. Number of connections reserved for ES/HMI/web Number of connections via integrated interfaces Number of S7 routing paths Redundancy - Media redundancy - MRP - MRP - MRPD - Switchover time on line break, typ. - Source • PG/OP communication Yes; encryption with TLS V1.3 pre-selected • S7 communication, as server • S7 communication, as dient No Open IE communication • TCP/IP - Data length, max. <t< td=""><td>Interface types</td><td></td></t<>	Interface types	
• 100 Mbps Yes • 1000 Mbps Yes; Only possible at the X3 interface of the CPU 1518 • Autocrossing Yes • Autocrossing Yes • Industrial Ethernet status LED Yes Protocols Number of connections max. • Number of connections reserved for ES/HMI/web 10 • Number of connections via integrated interfaces 320 • Number of connections via integrated interfaces 320 • Number of connections via integrated interfaces 320 • Number of S7 routing paths 64 Redundancy only via 1st interface (X1) - MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 - MRPD No - MRPD No - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected • S7 continung Yes • S7 communication, as client No • Open IE communication Yes • TCP/IP Yes • Data length, max. 64 kbyte • Data length, max. 64 kbyte • Several passive connections per port, supported Yes		
• 1000 MbpsYes; Only possible at the X3 interface of the CPU 1518• AutonegoliationYes• AutocrossingYes• Industrial Ethernet status LEDYesProtocolsNumber of connections, max.• Number of connections reserved for ES/HMI/web10• Number of sonnections reserved for ES/HMI/web10• Number of sonnections via integrated interfaces320• Number of S routing paths64Redundancy modeMedia redundancyonly via 1st interface (X1)- MRPYes; MRP Automanager according to IEC 62439-2 Edition 2.0- MRPDYes; as MRP ring node according to IEC 62439-2 Edition 3.0- MRPDNo- Switchover time on line break, typ.200 ms; PROFINET MRP- Number of stations in the ring, max.50SIMATIC communicationYes; encryption with TLS V1.3 pre-selected• S7 contingYes• S7 communication, as serverYes• S7 communication, as clientNo• CP/IPYes- Data length, max.64 kbyte- Data length, max.64 kbyte- Switchower time connections per port, supportedYes		Yes
 Autonegotiation Yes Autocrossing Yes Industrial Ethernet status LED Yes Protocols Number of connections, max. Number of connections reserved for ES/HM//web Number of connections reserved for ES/HM//web Number of sorbusia integrated interfaces S20 Number of S7 routing paths 64 Redundancy mode Media redundancy MRP Media redundancy MRP Automanager according to IEC 62439-2 Edition 2.0 MRPD Number of stations in the ring, max. S00 ms; PROFINET MRP SWMTIC communication Yes; encryption with TLS V1.3 pre-selected S7 conting Yes S7 communication, as server S7 communication, as dient No Open IE communication TCP/IP P basive connections per port, supported Yes 		
 Autocrossing Yes Industrial Ethernet status LED Yes Protocols Number of connections max. Number of connections reserved for ES/HMI/web Number of sonnections reserved for ES/HMI/web Number of sonnections reserved for ES/HMI/web Number of connections reserved for ES/HMI/web Number of sonnections reserved for ES/HMI/web MRP MRP MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 MRP Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 MRPD No Switchover time on line break, typ. 200 ms; PROFINET MRP Number of stations in the ring, max. S0 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected S7 communication, as server Yes S7 communication, as server Yes S7 communication, as client No Open IE communication TCP/IP Pata length, max. G4 kbyte Serveral passive connections per port, supported 		
Industrial Ethernet status LED Yes Protocols Number of connections, max. 320 Number of connections, max. 320 Number of connections reserved for ES/HMI/web 10 Number of connections via integrated interfaces 320 Number of S7 routing paths 64 Redundancy mode Media redundancy - Media redundancy - MRP interconnection, supported Yes; as MRP Automanager according to IEC 62439-2 Edition 2.0 - MRP interconnection, supported Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 - MRPD No - Switchover time on line break, typ. 200 ms; PROFINET MRP - Number of stations in the ring, max. 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected S7 routing S7 conting Yes S7 communication, as server Yes S7 communication TCP/IP - Data length, max. G4 kbyte - several passive connections per port, supported		
Protocols Number of connections • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of S7 routing paths • Media redundancy • Media redundancy • MRP • MRP Interconnection, supported • MRPD • Switchover time on line break, typ. • Number of stations in the ring, max. • PG/OP communication • PC/OP communication • S7 communication, as server • S7 communication, as client • TCP/IP • Data length, max. • Several passive connections per port, supported	-	
Number of connections 320 Number of connections, max. 320 Number of connections reserved for ES/HMI/web 10 Number of connections via integrated interfaces 320 Number of S7 routing paths 64 Redundancy mode 64 Media redundancy only via 1st interface (X1) — Media redundancy only via 1st interface (X1) — MRP Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 — MRP Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 — MRPD No — Switchover time on line break, typ. 200 ms; PROFINET MRP — Number of stations in the ring, max. 50 SIMATIC communication Yes; encryption with TLS V1.3 pre-selected • S7 routing Yes • S7 communication, as server Yes • S7 communication, as client No Open IE communication Yes • TCP/IP Yes — Data length, max. 64 kbyte — several passive connections per port, supported Yes		
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Open IE communication Yes • TCP/IP Yes — Data length, max. 64 kbyte — several passive connections per port, supported Yes		
TCP/IP Yes Data length, max. 64 kbyte - several passive connections per port, supported Yes		
— several passive connections per port, Yes supported		Yes
— several passive connections per port, Yes supported	— Data length, max.	64 kbyte
supported	-	
ISO-on-TCP (RFC1006) Yes		
	 ISO-on-TCP (RFC1006) 	
- Data length, max. 64 kbyte	— Data length, max.	64 kbyte
• UDP Yes	• UDP	Yes
— Data length, max. 2 kbyte; 1 472 bytes for UDP broadcast	— Data length, max.	2 kbyte; 1 472 bytes for UDP broadcast

— UDP multicast	Yes; 128 multicast circuits (of which max. 5 via X1)
• DHCP	No
• DNS	Yes
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
• LLDP Web server	Tes
• HTTP	No
• HTTPS	No
OPC UA	INU
OPC UA Client	No
OPC UA Server	No
Further protocols	INO
MODBUS	Yes; MODBUS TCP
Isochronous mode	
	Nie
Equidistance	No
S7 message functions	
Number of login stations for message functions, max.	64
Program alarms	Yes
Number of configurable program messages, max.	10 000; Program messages are generated by the "Program_Alarm" block, ProDiag or GRAPH
Number of loadable program messages in RUN, max.	5 000
Number of simultaneously active program alarms	
Number of program alarms	4 000
 Number of alarms for system diagnostics 	1 000
Test commissioning functions	
Joint commission (Team Engineering)	No
Status block	Yes; Up to 16 simultaneously
Single step	No
Number of breakpoints	20; Breakpoints are only supported in RUN-Solo status
Status/control	
Status/control variable	Yes
Variables	inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters
 Number of variables, max. 	
— of which status variables, max.	200; per job
— of which control variables, max.	200; per job
Forcing	
Forcing	Yes
 Forcing, variables 	peripheral inputs/outputs (without fail-safe)
 Number of variables, max. 	200
Diagnostic buffer	
• present	Yes
 Number of entries, max. 	3 200
— of which powerfail-proof	1 000
Traces	
 Number of configurable Traces 	8
 Memory size per trace, max. 	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
 Connection display LINK TX/RX 	Yes
Supported technology objects	
Motion Control	No
Controller	
PID_Compact	Yes; Universal PID controller with integrated optimization
	, surrough in the origination of the integration optimization

 PID_3Step 	Yes; PID controller with integrated optimization for valves
PID-Temp	Yes; PID controller with integrated optimization for temperature
Counting and measuring	Yes
High-speed counter	No
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 repa	ir time of 100 hours)
 Low demand mode: PFDavg in accordance with SIL3 	< 2.00E-05
 High demand/continuous mode: PFH in accordance with SIL3 	< 1.00E-09
Ambient conditions	
Ambient temperature during operation	
 horizontal installation, min. 	0°0
 horizontal installation, max. 	60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off
 vertical installation, min. 	0 °C
 vertical installation, max. 	40 $^\circ\text{C};$ Display: 40 $^\circ\text{C},$ at an operating temperature of typically 40 $^\circ\text{C},$ the display is switched off
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Configuration	
Programming	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— STL	Yes
— SCL	Yes
— GRAPH	Yes
Know-how protection	
 User program protection/password protection 	Yes
 Copy protection 	No
Block protection	Yes
Access protection	
 protection of confidential configuration data 	Yes
 Password for display 	Yes
 Protection level: Write protection 	Yes
 Protection level: Read/write protection 	Yes
 Protection level: Write protection for Failsafe 	Yes
Protection level: Complete protection	Yes
Cycle time monitoring	
lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	210 mm
Height	147 mm
Depth	129 mm
last modified:	