

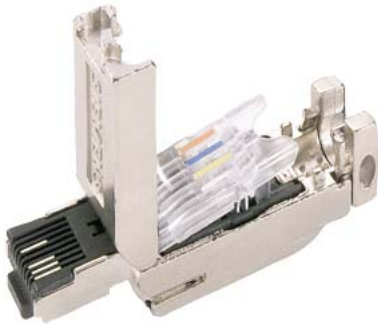
product type designation

product description

IE FC RJ45 Plug 180 (2x2)

RJ45 data connector

Industrial Ethernet FastConnect RJ45 plug 180 2x 2, RJ45 plug-in connector (10/100 Mbit/s) with rugged metal enclosure and FC connection system, for IE FC TP cable 2x 2; 180° cable outlet 1 pack = 1 unit.



suitability for use

For connection to IE FC TP cables 2x2, suitable for fast assembly with the FastConnect system

transfer rate

transfer rate / for Industrial Ethernet

10 Mbit/s, 100 Mbit/s

interfaces

number of electrical connections

- for Industrial Ethernet FC TP cables
- for network components or terminal equipment

4

1

type of electrical connection

- for Industrial Ethernet FC TP cables
- for network components or terminal equipment

integrated cut-and-clamp contacts for 4-wire TP FC installation cable AWG22
RJ45 connector

type of electrical connection / FastConnect

Yes

mechanical data

material / of the enclosure

metal

number of reuses

10

locking mechanism design

other

design, dimensions and weights

type of cable outlet

180° cable outlet

width

13.7 mm

height

16 mm

depth

55 mm

net weight

35 g

connectable cable cross-section

6.5 ... 6.5 mm

connectable conductor cross-section

0.33 mm²

ambient conditions

ambient temperature

- during operation
- during storage
- during transport

-40 ... +85 °C

-40 ... +85 °C

-40 ... +85 °C

relative humidity

- at 25 °C / without condensation / during operation / maximum

95 %

protection class IP

IP20

product features, product functions, product components / general

product feature

- PoE capability
- PoE+capability
- silicon-free

Yes

Yes

Yes

product component	
<ul style="list-style-type: none"> • strain relief 	Yes
standards, specifications, approvals	
certificate of suitability	
<ul style="list-style-type: none"> • RoHS conformity • UL approval • cULus approval • railway application in accordance with EN 50155 	Yes Yes Yes No
standard for structured cabling	Cat5
reference code	
<ul style="list-style-type: none"> • according to IEC 81346-2:2019 	XGA

standards, specifications, approvals / Environmental Product Declaration

Environmental Product Declaration	Yes
Global Warming Potential [CO2 eq]	
<ul style="list-style-type: none"> • total • during manufacturing • during operation • after end of life 	0.277 kg 0.263 kg 0.0086 kg 0.0062 kg

further information / internet links




internet link	
<ul style="list-style-type: none"> • to website: Selection guide for cables and connectors • to web page: selection aid TIA Selection Tool • to website: Industrial communication • to web page: SiePortal • to website: Image database • to website: CAx-Download-Manager • to website: Industry Online Support 	https://support.industry.siemens.com/cs/ww/en/view/109766358 https://www.siemens.com/tstcloud https://www.siemens.com/simatic-net https://sieportal.siemens.com https://www.automation.siemens.com/bilddb http://www.siemens.com/cax https://support.industry.siemens.com

security information




security information	<p>Siemens provides products and solutions with industrial cybersecurity functions that support the secure operation of plants, systems, machines and networks. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial cybersecurity concept. Siemens' products and solutions constitute one element of such a concept. Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. For additional information on industrial cybersecurity measures that may be implemented, please visit www.siemens.com/cybersecurity-industry. Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats. To stay informed about product updates, subscribe to the Siemens Industrial Cybersecurity RSS Feed under https://www.siemens.com/cert. (V4.7)</p>
----------------------	---

Approvals / Certificates

General Product Approval	Test Certificates
---------------------------------	--------------------------

Declaration of Conformity			Miscellaneous		Special Test Certificate
---	---	---	-------------------------------	---	--

Marine / Shipping	Environment	Industrial Communication
--------------------------	--------------------	---------------------------------

			Confirmation	PROFINET
---	---	---	------------------------------	--------------------------

last modified: 11/8/2024 

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	FS04
Firmware version	V3.1
<ul style="list-style-type: none"> FW update possible 	Yes
Product function	
<ul style="list-style-type: none"> I&M data 	Yes; I&M0 to I&M3
<ul style="list-style-type: none"> Isochronous mode 	No
<ul style="list-style-type: none"> SysLog 	Yes
Engineering with	
<ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version 	V19 (FW V3.1) / V17 (FW V2.9) or higher
Display	
Screen diagonal [cm]	6.1 cm
Control elements	
Number of keys	6
Mode selector switch	1
Supply voltage	
Rated value (DC)	24 V
permissible range, lower limit (DC)	19.2 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Mains buffering	
<ul style="list-style-type: none"> Mains/voltage failure stored energy time 	5 ms
<ul style="list-style-type: none"> Repeat rate, min. 	1/s
Input current	
Current consumption (rated value)	1.55 A
Current consumption, max.	1.95 A
Inrush current, max.	1.95 A; Rated value
I^2t	0.4 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	
<ul style="list-style-type: none"> integrated (for program) 	9 Mbyte
<ul style="list-style-type: none"> 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 1 ms
• Number of process alarm OBs	50
• Number of DPV1 alarm OBs	3
• 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	
— adjustable	Yes
S7 times	
• Number	2 048
Retentivity	
— adjustable	Yes
IEC timer	
• Number	Any (only limited by the main memory)
Retentivity	
— 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	
• Size, max.	16 kbyte
• Number of clock memories	8; 8 clock memory bit, grouped into one clock memory byte
Data blocks	
• Retentivity adjustable	Yes
• Retentivity preset	No

Local data	
• per priority class, max.	64 kbyte; max. 16 KB per block
Address area	
Number of IO modules	8 192; max. number of modules / submodules
I/O address area	
• Inputs	32 kbyte; All inputs are in the process image
• Outputs	32 kbyte; All outputs are in the process image
per integrated IO subsystem	
— Inputs (volume)	16 kbyte
— Outputs (volume)	16 kbyte
Subprocess images	
• Number of subprocess images, max.	31
Hardware configuration	
Number of distributed IO systems	64; A distributed I/O system is characterized not only by the integration of distributed I/O via PROFINET, but also by the connection of I/O via IE/PB-Links.
Number of IO Controllers	
• integrated	1
Rack	
• Modules per rack, max.	9; CPU + 2 PS + 6 CP
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	
• 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	Yes
• Media redundancy	Yes
PROFINET IO Controller	
Services	
— Isochronous mode	No
— IRT	No
— PROFIenergy	Yes; per user program
— Number of connectable IO Devices, max.	256
— 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
— PROFINET Security Class	1
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
2. Interface	
Interface types	
• RJ 45 (Ethernet)	Yes; X2
• Number of ports	1
• integrated switch	No

Protocols	
<ul style="list-style-type: none"> • IP protocol • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy 	<ul style="list-style-type: none"> Yes; IPv4 No No Yes; Only Server Yes; Optionally also encrypted Yes No
3. Interface	
Interface types	
<ul style="list-style-type: none"> • RJ 45 (Ethernet) • Number of ports • integrated switch 	<ul style="list-style-type: none"> Yes; X3 1 No
Protocols	
<ul style="list-style-type: none"> • IP protocol • SIMATIC communication • Open IE communication • Web server 	<ul style="list-style-type: none"> Yes; IPv4 Yes; Only Server Yes; Optionally also encrypted Yes
4. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization module 6ES7960-1CB00-0AA5, 6ES7960-1FB00-0AA5 or 6ES7960-1FE00-0AA5
5. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization module 6ES7960-1CB00-0AA5, 6ES7960-1FB00-0AA5 or 6ES7960-1FE00-0AA5
Interface types	
RJ 45 (Ethernet)	
<ul style="list-style-type: none"> • 100 Mbps • 1000 Mbps • Autonegotiation • Autocrossing • Industrial Ethernet status LED 	<ul style="list-style-type: none"> Yes Yes; Only possible at the X3 interface of the CPU 1518 Yes Yes Yes
Protocols	
PROFIsafe	Yes; V2.4 / V2.6
Number of connections	
<ul style="list-style-type: none"> • Number of connections, max. • Number of connections reserved for ES/HMI/web • Number of connections via integrated interfaces • Number of S7 routing paths 	<ul style="list-style-type: none"> 384; via integrated interfaces of the CPU and connected CPs 10 320 64
Redundancy mode	
<ul style="list-style-type: none"> • PROFINET system redundancy (S2) • PROFINET system redundancy (R1) 	<ul style="list-style-type: none"> Yes Yes
Media redundancy	
<ul style="list-style-type: none"> — Media redundancy — MRP — MRP interconnection, supported — MRPD — Switchover time on line break, typ. — Number of stations in the ring, max. 	<ul style="list-style-type: none"> only via 1st interface (X1) Yes; MRP Automanager according to IEC 62439-2 Edition 2.0 Yes; as MRP ring node according to IEC 62439-2 Edition 3.0 No 200 ms; PROFINET MRP 50
SIMATIC communication	
<ul style="list-style-type: none"> • PG/OP communication • S7 routing • S7 communication, as server • S7 communication, as client 	<ul style="list-style-type: none"> Yes; encryption with TLS V1.3 pre-selected Yes Yes No
Open IE communication	
<ul style="list-style-type: none"> • TCP/IP <ul style="list-style-type: none"> — Data length, max. — several passive connections per port, supported • ISO-on-TCP (RFC1006) <ul style="list-style-type: none"> — Data length, max. 	<ul style="list-style-type: none"> Yes <ul style="list-style-type: none"> 64 kbyte Yes Yes <ul style="list-style-type: none"> 64 kbyte

<ul style="list-style-type: none"> • UDP <ul style="list-style-type: none"> — Data length, max. — UDP multicast • DHCP • DNS • SNMP • DCP • LLDP • Encryption 	<p>Yes</p> <p>2 kbyte; 1 472 bytes for UDP broadcast</p> <p>Yes; 128 multicast circuits (of which max. 5 via X1)</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes; Optional</p>
Web server	
<ul style="list-style-type: none"> • HTTP • HTTPS • web API <ul style="list-style-type: none"> — Number of sessions, max. — number of simultaneous HTTP calls, max. — HTTP request body, max. 	<p>No</p> <p>Yes; only via Web API</p> <p>Yes</p> <p>200</p> <p>4</p> <p>131 072 byte</p>
OPC UA	
<ul style="list-style-type: none"> • Runtime license required • OPC UA Client • OPC UA Server <ul style="list-style-type: none"> — Application authentication — Security policies — User authentication — GDS support (certificate management) — Number of sessions, max. — Number of subscriptions per session, max. — Sampling interval, min. — Publishing interval, min. — Number of server methods, max. — Number of inputs/outputs per server method, max. — Number of monitored items, recommended max. — Number of server interfaces, max. — Number of nodes for user-defined server interfaces, max. • Alarms and Conditions 	<p>Yes; "Large" license required per CPU</p> <p>No</p> <p>Yes; Data access (read, write, subscribe), method call, custom address space</p> <p>Yes</p> <p>available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256, Aes128Sha256RsaOaep, Aes256Sha256RsaPss</p> <p>"anonymous" or by user name & password</p> <p>No</p> <p>32</p> <p>25</p> <p>25 ms</p> <p>25 ms</p> <p>100</p> <p>20</p> <p>12 000; for 1 s sampling interval and 1 s send interval</p> <p>10 of each "Server interfaces" / "Companion specification" type and 20 of the type "Reference namespace"</p> <p>50 000</p> <p>No</p>
Further protocols	
<ul style="list-style-type: none"> • MODBUS 	<p>Yes; MODBUS TCP</p>
S7 message functions	
Number of login stations for message functions, max.	64
number of subscriptions, max.	750
number of tags/attributes for subscriptions, max.	50 000
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.	10 000
Number of simultaneously active program alarms	
<ul style="list-style-type: none"> • Number of program alarms • Number of alarms for system diagnostics 	<p>4 000</p> <p>1 000</p>
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	
<ul style="list-style-type: none"> • Status/control variable • Variables • Number of variables, max. <ul style="list-style-type: none"> — of which status variables, max. — of which control variables, max. 	<p>Yes; without fail-safe</p> <p>inputs/outputs, bit memories, DBs, peripheral I/Os (without fail-safe), times, counters</p> <p>200; per job</p> <p>200; per job</p>

Forcing	
<ul style="list-style-type: none"> • Forcing • Forcing, variables • Number of variables, max. 	<p>Yes; without fail-safe peripheral inputs/outputs (without fail-safe) 200</p>
Diagnostic buffer	
<ul style="list-style-type: none"> • present • Number of entries, max. — of which powerfail-proof 	<p>Yes 3 200 1 000</p>
Traces	
<ul style="list-style-type: none"> • Number of configurable Traces • Memory size per trace, max. 	<p>8 512 kbyte</p>
Interrupts/diagnostics/status information	
Diagnostics indication LED	
<ul style="list-style-type: none"> • RUN/STOP LED • ERROR LED • MAINT LED • Connection display LINK TX/RX 	<p>Yes Yes Yes Yes</p>
Supported technology objects	
Motion Control	No
Controller	<ul style="list-style-type: none"> • PID_Compact • PID_3Step • PID-Temp <p>Yes; Universal PID controller with integrated optimization Yes; PID controller with integrated optimization for valves Yes; PID controller with integrated optimization for temperature</p>
Counting and measuring	Yes
Standards, approvals, certificates	
Ecological footprint	
<ul style="list-style-type: none"> • environmental product declaration 	Yes
Global warming potential	
— global warming potential, (total) [CO2 eq]	570 kg
— global warming potential, (during production) [CO2 eq]	96.9 kg
— global warming potential, (during operation) [CO2 eq]	483 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-9.97 kg
Highest safety class achievable in safety mode	
<ul style="list-style-type: none"> • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 	<p>PLe SIL 3</p>
Probability of failure (for service life of 20 years and repair 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	
<ul style="list-style-type: none"> • horizontal installation, min. • horizontal installation, max. • vertical installation, min. • vertical installation, max. 	<p>0 °C 60 °C; Display: 50 °C, at an operating temperature of typically 50 °C, the display is switched off 0 °C 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off</p>
Ambient temperature during storage/transportation	
<ul style="list-style-type: none"> • min. • max. 	<p>-40 °C 70 °C</p>
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> • Installation altitude above sea level, max. 	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes; incl. failsafe
— FBD	Yes; incl. failsafe
— STL	Yes

— SCL	Yes
— CFC	Yes; either CFC or failsafe functionality
— 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
• User administration	Yes
programming / cycle time monitoring / header	
• lower limit	adjustable minimum cycle time
• upper limit	adjustable maximum cycle time
Dimensions	
Width	210 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	2 116 g

last modified:

10/9/2024 

SIMATIC S7-1500HF, CPU 1518HF system bundle consisting of: 2 x CPU 1518HF-4 PN (6ES7518-4JP00-0AB0), 4 sync modules up to 10 m (6ES7960-1CB00-0AA5), 2 x sync cables 1 m (6ES7960-1BB00-5AA5), without memory card

General information	
Product type designation	system bundle

last modified: 3/12/2024 