



Figure similar

SIPLUS S7-1500 CPU 1517H-3 PN based on 6ES7517-3HP00-0AB0 with conformal coating, 0...+60 °C, central processing unit with 2 MB work memory for program and 8 MB for data, 1st interface: PROFINET IRT with 2-port switch, 2nd interface: PROFINET RT, 3rd interface: H-SYNC, SIMATIC Memory Card required

General information	
Product type designation	CPU 1517H-3 PN
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	see entry ID: 109746275
Configuration control	
via dataset	Yes; Only distributed
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"> <li>Mains/voltage failure stored energy time</li> </ul>	5 ms
Input current	
Current consumption (rated value)	1.5 A
Inrush current, max.	2.4 A; Rated value
$I^2t$	0.02 A <sup>2</sup> ·s
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"> <li>integrated (for program)</li> </ul>	2 Mbyte
<ul style="list-style-type: none"> <li>integrated (for data)</li> </ul>	8 Mbyte
Load memory	
<ul style="list-style-type: none"> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	32 Gbyte
Backup	
<ul style="list-style-type: none"> <li>maintenance-free</li> </ul>	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) 12 000; Blocks (OB, FB, FC, DB) and UDTs

#### DB

- Number range Number range: 1 to 59 999
- Size, max. 8 Mbyte; For non-optimized block accesses, the max. size of the DB 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
- 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

### 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

#### 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 16 384; max. number of modules / submodules

#### I/O address area

- Inputs 32 kbyte
- Outputs 32 kbyte

#### per integrated IO subsystem

- Inputs (volume) 16 kbyte
- Outputs (volume) 16 kbyte

#### Subprocess images

- Number of subprocess images, max. 32

Hardware configuration	
Number of IO Controllers	1
<ul style="list-style-type: none"> <li>integrated</li> </ul>	
Time of day	
Clock	
<ul style="list-style-type: none"> <li>Type</li> <li>Backup time</li> <li>Deviation per day, max.</li> </ul>	Hardware clock 6 wk; At 40 °C ambient temperature, typically 10 s; Typ.: 2 s
Operating hours counter	
<ul style="list-style-type: none"> <li>Number</li> </ul>	16
Clock synchronization	
<ul style="list-style-type: none"> <li>supported</li> <li>in AS, master</li> <li>in AS, slave</li> <li>on Ethernet via NTP</li> </ul>	Yes No No Yes
Interfaces	
Number of PROFINET interfaces	1
1. Interface	
Interface types	
<ul style="list-style-type: none"> <li>RJ 45 (Ethernet)</li> <li>Number of ports</li> <li>integrated switch</li> </ul>	Yes; X1 2 Yes
Protocols	
<ul style="list-style-type: none"> <li>IP protocol</li> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> </ul>	Yes; IPv4 Yes No Yes; Only Server Yes No Yes
PROFINET IO Controller	
Services	
<ul style="list-style-type: none"> <li>PG/OP communication</li> <li>Isochronous mode</li> <li>IRT</li> <li>PROFenergy</li> <li>Number of connectable IO Devices, max.</li> </ul>	Yes No No Yes 256
Update time for RT	
<ul style="list-style-type: none"> <li>for send cycle of 1 ms</li> </ul>	1 ms to 512 ms
2. Interface	
Interface types	
<ul style="list-style-type: none"> <li>RJ 45 (Ethernet)</li> <li>Number of ports</li> <li>integrated switch</li> </ul>	Yes; X2 1 No
Protocols	
<ul style="list-style-type: none"> <li>IP protocol</li> <li>PROFINET IO Controller</li> <li>PROFINET IO Device</li> <li>SIMATIC communication</li> <li>Open IE communication</li> <li>Web server</li> <li>Media redundancy</li> </ul>	Yes; IPv4 No No Yes; Only Server Yes No No
3. Interface	
Interface type	Pluggable interface module (IF)
Plug-in interface modules	Synchronization module 6AG1960-1CB00-4AA5 or 6AG1960-1FB00-4AA5
4. Interface	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization module 6AG1960-1CB00-4AA5 or 6AG1960-1FB00-4AA5
Interface types	
RJ 45 (Ethernet)	

- 100 Mbps Yes
- Autonegotiation Yes
- Autocrossing Yes
- Industrial Ethernet status LED Yes

### Protocols

PROFIsafe No

#### Number of connections

- Number of connections, max. 160
- Number of connections reserved for ES/HMI/web 10

#### Redundancy mode

##### Media redundancy

- MRP Yes; Manager Auto is permanently set in TIA. Max. 50 nodes are possible
- MRPD No
- Switchover time on line break, typ. 200 ms; PROFINET MRP
- Number of stations in the ring, max. 50

#### SIMATIC communication

- S7 routing No
- S7 communication, as server Yes
- S7 communication, as client No

#### Open IE communication

- TCP/IP Yes
  - Data length, max. 64 kbyte
  - several passive connections per port, supported Yes
- ISO-on-TCP (RFC1006) Yes
  - Data length, max. 64 kbyte
- UDP Yes
  - Data length, max. 2 kbyte; 1 472 bytes for UDP broadcast
  - UDP multicast Yes; Max. 5 multicast circuits
- DHCP No
- SNMP Yes
- DCP Yes
- LLDP Yes

#### Web server

- HTTP No
- HTTPS No

#### OPC UA

- OPC UA Client No
- OPC UA Server No

#### Further protocols

- MODBUS Yes; MODBUS TCP

### S7 message functions

Program alarms No

### Test commissioning functions

Joint commission (Team Engineering) No

Status block Yes; Up to 16 simultaneously

Single step No

#### Status/control

- Status/control variable Yes
- Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
- Number of variables, max.
  - of which status variables, max. 200; per job
  - of which control variables, max. 200; per job

#### Forcing

- Forcing, variables Peripheral inputs/outputs
- 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	No
• PID_3Step	No
• PID-Temp	No
Counting and measuring	
• High-speed counter	No
Ambient conditions	
Ambient temperature during operation	
• horizontal installation, min.	0 °C; = Tmin
• horizontal installation, max.	60 °C; = Tmax; display: 50 °C, the display is switched off at an operating temperature of typically 50 °C
• vertical installation, min.	0 °C; = Tmin
• vertical installation, max.	40 °C; Display: 40 °C, at an operating temperature of typically 40 °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
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax -20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
Relative humidity	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
Resistance	
Coolants and lubricants	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
Use in stationary industrial systems	
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna)
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
Remark	
— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!
Conformal coating	
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A
configuration / header	
configuration / programming / header	

Programming language	
— LAD	Yes
— FBD	Yes
— STL	Yes
— SCL	Yes
— CFC	No
— GRAPH	No
Know-how protection	
• User program protection/password protection	Yes
• Copy protection	No
• Block protection	Yes
Access protection	
• Password for display	Yes
• Protection level: Write protection	Yes
• Protection level: Read/write protection	Yes
• Protection level: Complete protection	Yes
Dimensions	
Width	210 mm
Height	147 mm
Depth	129 mm
Weights	
Weight, approx.	2 119 g; Interface modules: 2x 18 g
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