

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
based on	<a href="#">6ES7517-3HP00-0AB0</a>
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 <sup>2</sup> t	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> <li>integrated (for data)</li> </ul>	2 Mbyte 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
<b>Hardware configuration</b>	
Number of IO Controllers	
• integrated	1
<b>Time of day</b>	
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
• in AS, master	No
• in AS, device	No
• on Ethernet via NTP	Yes
<b>Interfaces</b>	
Number of PROFINET interfaces	
	1
<b>1. Interface</b>	
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
• Web server	No
• Media redundancy	Yes
PROFINET IO Controller	
Services	
— PG/OP communication	Yes
— Isochronous mode	No
— IRT	No
— PROFINergy	Yes
— Number of connectable IO Devices, max.	256
Update time for RT	
— for send cycle of 1 ms	1 ms to 512 ms
<b>2. Interface</b>	
Interface types	
• RJ 45 (Ethernet)	Yes; X2
• Number of ports	1
• integrated switch	No
Protocols	
• IP protocol	Yes; IPv4
• PROFINET IO Controller	No
• PROFINET IO Device	No
• SIMATIC communication	Yes; Only Server
• Open IE communication	Yes
• Web server	No
• Media redundancy	No
<b>3. Interface</b>	
Interface type	Pluggable interface module (IF)
Plug-in interface modules	Synchronization module 6AG1960-1CB00-4AA5 or 6AG1960-1FB00-4AA5
<b>4. Interface</b>	
Interface type	Pluggable synchronization submodule (FO)
Plug-in interface modules	Synchronization module 6AG1960-1CB00-4AA5 or 6AG1960-1FB00-4AA5
<b>Interface types</b>	

<b>RJ 45 (Ethernet)</b>	
• 100 Mbps	Yes
• Autonegotiation	Yes
• Autocrossing	Yes
• Industrial Ethernet status LED	Yes
<b>Protocols</b>	
PROFIsafe	No
<b>Number of connections</b>	
• Number of connections, max.	160
• Number of connections reserved for ES/HMI/web	10
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
— 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
<b>SIMATIC communication</b>	
• S7 routing	No
• S7 communication, as server	Yes
• S7 communication, as client	No
<b>Open IE communication</b>	
• 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
<b>Web server</b>	
• HTTP	No
• HTTPS	No
<b>OPC UA</b>	
• OPC UA Client	No
• OPC UA Server	No
<b>Further protocols</b>	
• MODBUS	Yes; MODBUS TCP
<b>S7 message functions</b>	
Program alarms	No
<b>Test commissioning functions</b>	
Joint commission (Team Engineering)	No
Status block	Yes; Up to 16 simultaneously
Single step	No
<b>Status/control</b>	
• 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
<b>Forcing</b>	
• Forcing, variables	Peripheral inputs/outputs
• Number of variables, max.	200
<b>Diagnostic buffer</b>	
• present	Yes
• Number of entries, max.	3 200
— of which powerfail-proof	1 000

<b>Traces</b>	
<ul style="list-style-type: none"> <li>• Number of configurable Traces</li> <li>• Memory size per trace, max.</li> </ul>	<p>8 512 kbyte</p>
<b>Interrupts/diagnostics/status information</b>	
<b>Diagnostics indication LED</b>	
<ul style="list-style-type: none"> <li>• RUN/STOP LED</li> <li>• ERROR LED</li> <li>• MAINT LED</li> <li>• Connection display LINK TX/RX</li> </ul>	<p>Yes Yes Yes Yes</p>
<b>Supported technology objects</b>	
Motion Control	No
Controller	
<ul style="list-style-type: none"> <li>• PID_Compact</li> <li>• PID_3Step</li> <li>• PID-Temp</li> </ul>	<p>No No No</p>
Counting and measuring	
<ul style="list-style-type: none"> <li>• High-speed counter</li> </ul>	No
<b>Ambient conditions</b>	
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>• horizontal installation, min.</li> <li>• horizontal installation, max.</li> <li>• vertical installation, min.</li> <li>• vertical installation, max.</li> </ul>	<p>0 °C; = Tmin 60 °C; = Tmax; display: 50 °C, the display is switched off at an operating temperature of typically 50 °C 0 °C; = Tmin 40 °C; Display: 40 °C, at an operating temperature of typically 40 °C, the display is switched off</p>
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> <li>• max.</li> </ul>	<p>-40 °C 70 °C</p>
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> <li>• Ambient air temperature-barometric pressure-altitude</li> </ul>	<p>5 000 m 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)</p>
<b>Relative humidity</b>	
<ul style="list-style-type: none"> <li>• With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation / frost (no commissioning in bedewed state), horizontal installation
<b>Resistance</b>	
<b>Coolants and lubricants</b>	
<ul style="list-style-type: none"> <li>— Resistant to commercially available coolants and lubricants</li> </ul>	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-3</li> <li>— to chemically active substances according to EN 60721-3-3</li> <li>— to mechanically active substances according to EN 60721-3-3</li> </ul>	<p>Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request Yes; Class 3C4 (RH &lt; 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *</p>
<b>Use on ships/at sea</b>	
<ul style="list-style-type: none"> <li>— to biologically active substances according to EN 60721-3-6</li> <li>— to chemically active substances according to EN 60721-3-6</li> <li>— to mechanically active substances according to EN 60721-3-6</li> </ul>	<p>Yes; Class 6B2 mold, fungal and dry rot spores (excluding fauna) Yes; Class 6C3 (RH &lt; 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *</p>
<b>Remark</b>	
<ul style="list-style-type: none"> <li>— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>	
<ul style="list-style-type: none"> <li>• Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>• Protection against fouling acc. to EN 60664-3</li> <li>• Military testing according to MIL-I-46058C, Amendment 7</li> <li>• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	<p>Yes; Class 2 for high reliability Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A</p>

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

last modified:

