

Overview CPU 317TF-3 PN/DP



- Fail-safe SIMATIC CPU 317TF-3 PN/DP with integral Technology/Motion Control functionality
- Spare-part-compatible successor to the CPU 317TF-2 DP (Article No. 6ES7317-6TF14-0AB0)
- With full functionality of the standard CPU 317-2 PN/DP and CPU 317F-2 PN/DP (except for CBA)
- For cross-industry automation tasks in series machine, special machine and plant construction

- Ideal for synchronized motion, such as coupling to a virtual/real master, gear synchronization, cam disk, path interpolation, or print mark compensation
- 3D path interpolation with different kinematics
- Position and pressure-regulated hydraulic axes
- Used as central controller in production lines with central and distributed I/O
- With integrated I/O for high-speed technology functions (e.g. camming, reference point acquisition)
- PROFIBUS DP (DRIVE) interface for isochronous connection of drive components
- PROFINET interface with 2-port switch
- PROFINET I/O controller for operating distributed I/O on PROFINET
- One common S7 user program for control and motion control tasks (no additional programming language necessary for motion control)
- "S7-Technology" option package required
- "S7 Distributed Safety" option package required (version V4.2 SP3 and higher)

SIMATIC Micro Memory Card (8 MB) required for operation of the CPU.

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Technical specifications

	6ES7315-7TJ10-0AB0	6ES7317-7TK10-0AB0	6ES7317-7UL10-0AB0
General information			
Engineering with			
• Programming package			STEP 7 V5.5 SP2 or higher; S7-Technology option package V4.2 SP3 or higher, Distributed Safety V5.4 SP5 or higher, S7-F Configuration Pack V5.5 SP10 or higher
Supply voltage			
24 V DC	Yes	Yes	Yes
Power losses			
Power loss, typ.	7.5 W	7.5 W	8.5 W
Memory			
Work memory			
• integrated	384 kbyte	1 024 kbyte	1 536 kbyte
• Size of retentive memory for retentive data blocks	128 kbyte	256 kbyte	256 kbyte
Load memory			
• pluggable (MMC), max.	8 Mbyte	8 Mbyte	8 Mbyte
CPU processing times			
for bit operations, typ.	0.05 µs	0.025 µs	0.025 µs
for word operations, typ.	0.09 µs	0.03 µs	0.03 µs
for fixed point arithmetic, typ.	0.12 µs	0.04 µs	0.04 µs
for floating point arithmetic, typ.	0.45 µs	0.16 µs	0.16 µs
Counters, timers and their retentivity			
S7 counter			
• Number	256	512	512
IEC counter			
• present	Yes	Yes	Yes
S7 times			
• Number	256	512	512
IEC timer			
• present	Yes	Yes	Yes

SIMATIC S7-300

Central processing units

Technology CPUs

Technical specifications (continued)

	6ES7315-7TJ10-0AB0	6ES7317-7TK10-0AB0	6ES7317-7UL10-0AB0
Data areas and their retentivity			
Flag			
• Number, max.	2 048 byte	4 096 byte	4 096 byte
Address area			
I/O address area			
• Inputs	2 048 byte	8 192 byte	8 192 byte
• Outputs	2 048 byte	8 192 byte	8 192 byte
Process image			
• Inputs, adjustable	2 048 byte	8 192 byte	8 192 byte
• Outputs, adjustable	2 048 byte	8 192 byte	8 192 byte
Time of day			
Clock			
• Hardware clock (real-time clock)	Yes	Yes	Yes
Operating hours counter			
• Number	1	4	4
1st interface			
Interface type	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface
Physics	RS 485	RS 485	RS 485
Functionality			
• MPI	Yes	Yes	Yes
• DP master	Yes	Yes	Yes
• DP slave	Yes	Yes	Yes
• Point-to-point connection	No	No	No
DP master			
• Number of DP slaves, max.	124	124	124
2nd interface			
Interface type	Integrated RS 485 interface	Integrated RS 485 interface	Integrated RS 485 interface
Physics	RS 485	RS 485	RS 485
Functionality			
• MPI	No	No	No
• DP master	Yes; DP(DRIVE)-Master	Yes; DP(DRIVE)-Master	Yes; DP(DRIVE)-Master
• DP slave	No	No	No
DP master			
• Number of DP slaves, max.	64	64	64
3rd interface			
Interface type	PROFINET	PROFINET	PROFINET
Physics	Ethernet RJ45	Ethernet RJ45	Ethernet RJ45
Number of ports	2	2	2
Functionality			
• MPI	No	No	No
• DP master	No	No	No
• DP slave	No	No	No
• PROFINET IO Controller	Yes; Also simultaneously with IO-Device functionality	Yes; Also simultaneously with IO-Device functionality	Yes; Also simultaneously with IO-Device functionality
• PROFINET IO Device	Yes; Also simultaneously with IO Controller functionality	Yes; Also simultaneously with IO Controller functionality	Yes; Also simultaneously with IO Controller functionality
PROFINET IO Controller			
• Max. number of connectable IO devices for RT	128	128	128
• Number of IO Devices with IRT and the option "high performance", max.	64	64	64
Isochronous mode			
Isochronous operation (application synchronized up to terminal)	Yes; Via PROFIBUS DP or PROFINET interface	Yes; Via PROFIBUS DP or PROFINET interface	Yes; Via PROFIBUS DP or PROFINET interface
Communication functions			
PG/OP communication	Yes	Yes	Yes
Data record routing	Yes	Yes	Yes
Global data communication			
• supported	Yes	Yes	Yes

Technical specifications (continued)

	6ES7315-7TJ10-0AB0	6ES7317-7TK10-0AB0	6ES7317-7UL10-0AB0
S7 basic communication			
• supported	Yes	Yes	Yes
S7 communication			
• supported	Yes	Yes	Yes
S5-compatible communication			
• supported	Yes; via CP and loadable FC	Yes; via CP and loadable FC	Yes; via CP and loadable FC
Open IE communication			
• TCP/IP	Yes; via integrated PROFINET interface and loadable FBs	Yes; via integrated PROFINET interface and loadable FBs	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	8	16	16
• ISO-on-TCP (RFC1006)	Yes; via integrated PROFINET interface and loadable FBs	Yes; via integrated PROFINET interface and loadable FBs	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	8	16	16
• UDP	Yes; via integrated PROFINET interface and loadable FBs	Yes; via integrated PROFINET interface and loadable FBs	Yes; via integrated PROFINET interface and loadable FBs
- Number of connections, max.	8	16	16
Web server			
• supported	Yes	Yes	Yes
Number of connections			
• overall	16	32	32
Ambient conditions			
Operating temperature			
• Min.	0 °C	0 °C	0 °C
• max.	60 °C	60 °C	60 °C
Configuration			
programming			
• Programming language			
- LAD	Yes	Yes	Yes
- FBD	Yes	Yes	Yes
- STL	Yes	Yes	Yes
- SCL	Yes	Yes	Yes
- CFC	Yes	Yes	Yes
- GRAPH	Yes	Yes	Yes
- HiGraph®	Yes	Yes	Yes
Know-how protection			
• User program protection/password protection	Yes	Yes	Yes
• Block encryption	Yes; With S7 block Privacy	Yes; With S7 block Privacy	Yes; With S7 block Privacy
Dimensions			
Width	120 mm	120 mm	120 mm
Height	125 mm	125 mm	125 mm
Depth	130 mm	130 mm	130 mm
Weights			
Weight, approx.	640 g	640 g	640 g

SIMATIC S7-300

Central processing units

Technology CPUs

Ordering data	Article No.	Article No.
Power supply connector 10 units, spare part	6ES7391-1AA00-0AA0	PROFINET bus components
Labeling strips 10 units, spare part	6ES7392-2XX00-0AA0	IE FC TP Standard Cable GP 2x2 4-core, shielded TP installation cable for connection to IE FC Outlet RJ45/ IE FC RJ45 Plug; PROFINET-compatible; with UL approval; sold by the meter
Label cover 10 units, spare part	6ES7392-2XY00-0AA0	FO Standard Cable GP (50/125) Standard cable, splittable, UL approval, sold by the meter
Labeling sheets for machine inscription For modules with 40-pin front connector, DIN A4, for printing with laser printer; 10 units petrol light-beige yellow red	6ES7392-2AX10-0AA0 6ES7392-2BX10-0AA0 6ES7392-2CX10-0AA0 6ES7392-2DX10-0AA0	6XV1840-2AH10 6XV1873-2A 6GK5204-2BB10-2AA3
USB A2 PC adapter For connecting a PG/PC or Notebook to PROFIBUS or MPI; USB cable included in scope of delivery	6GK1571-0BA00-0AA0	SCALANCE X204-2 Industrial Ethernet Switch Industrial Ethernet Switches with integral SNMP access, Web diagnostics, copper cable diagnostics and PROFINET diagnostics for configuring line, star and ring topologies; four 10/100 Mbit/s RJ45 ports and two FO ports
PROFIBUS bus components		Compact Switch Module CSM 377 Unmanaged Switch for connecting a SIMATIC S7-300, ET200 M and up to three other stations to Industrial Ethernet with 10/100 Mbit/s; 4 x RJ45 ports; external 24 V DC power supply, LED diagnostics, S7-300 module incl. electronic manual on CD-ROM
PROFIBUS DP bus connector RS 485 • with 90° cable outlet, max. transfer rate 12 Mbit/s - without PG interface - with PG interface • with 90° cable outlet for FastConnect connection system, max. transfer rate 12 Mbit/s - without PG interface, 1 unit - without PG interface, 100 units - with PG interface, 1 unit - with PG interface, 100 units • with axial cable outlet for SIMATIC OP, for connecting to PPI, MPI, PROFIBUS	6ES7972-0BA12-0XA0 6ES7972-0BB12-0XA0 6ES7972-0BA52-0XA0 6ES7972-0BA52-0XB0 6ES7972-0BB52-0XA0 6ES7972-0BB52-0XB0 6GK1500-0EA02	6GK7377-1AA00-0AA0
PROFIBUS Fast Connect bus cable Standard type with special design for quick mounting, 2-core, shielded, sold by the meter, max. delivery unit 1000 m, minimum ordering quantity 20 m	6XV1830-0EH10	IE FC RJ45 Plugs RJ45 plug connector for Industrial Ethernet with a rugged metal enclosure and integrated insulation displacement contacts for connecting Industrial Ethernet FC installation cables
RS 485 repeater for PROFIBUS Transmission rate up to 12 Mbit/s; 24 V DC; IP20 enclosure	6ES7972-0AA02-0XA0	IE FC RJ45 Plug 180 180° cable outlet 1 unit 10 units 50 units
		PROFIBUS/PROFINET bus components For establishing MPI/PROFIBUS/PROFINET communication
		See catalogs IK PI, CA 01

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