

SIMATIC S7-1200, CPU 1217C, COMPACT CPU, DC/DC/DC, 2
PROFINET PORT ONBOARD I/O: 10 DI 24V DC; 4 DI RS422/485; 6
DO 24V DC; 0,5A; 4 DO RS422/485; 2 AI 0- 10V DC, 2 AQ 0- 20mA;
POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA
MEMORY: 150 KB



General information	
Product type designation	CPU 1217C DC/DC/DC
Firmware version	V4.1
Engineering with	
• Programming package	STEP 7 V13 SP1 or higher
Display	
with display	No
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
• Rated value (DC)	24 V
Input current	
Current consumption (rated value)	600 mA; CPU only
Current consumption, max.	1 600 mA; CPU with all expansion modules

Inrush current, max.	12 A; at 28.8 V DC
Encoder supply	
24 V encoder supply	
• 24 V	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
• integrated	150 kbyte
• expandable	No
Load memory	
• integrated	4 Mbyte
• Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card
Backup	
• present	Yes; maintenance-free
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.085 µs; / Operation
for word operations, typ.	1.5 µs; / Operation
for floating point arithmetic, typ.	2.3 µs; / Operation
CPU-blocks	
Number of blocks (total)	DBs, FCs, FBs, counters and timers. The maximum number of addressable blocks ranges from 1 to 65535. There is no restriction, the entire working memory can be used
OB	
• Number, max.	Limited only by RAM for code
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	10 kbyte
Flag	
• Number, max.	8 kbyte; Size of bit memory address area
Local data	
• per priority class, max.	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
Address area	
I/O address area	
• Inputs	1 024 byte
• Outputs	1 024 byte
Process image	
• Inputs, adjustable	1 kbyte

- Outputs, adjustable

1 kbyte

Hardware configuration

Number of modules per system, max. 3 comm. modules, 1 signal board, 8 signal modules

Time of day

Clock

- Hardware clock (real-time clock) Yes
- Backup time 480 h; Typical
- Deviation per day, max. +/- 60 s/month at 25 °C

Digital inputs

Number of digital inputs 14; Integrated
 • of which inputs usable for technological functions 6; HSC (High Speed Counting)
 integrated channels (DI) 14; Of which, 10x 24 V DC and 4x RS 422/485 differential
 m/p-reading Yes

Number of simultaneously controllable inputs

all mounting positions

— up to 40 °C, max. 14

Input delay (for rated value of input voltage)

for standard inputs

- parameterizable 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms, selectable in groups of four
- at "0" to "1", min. 0.2 ms
- at "0" to "1", max. 12.8 ms

for interrupt inputs

- parameterizable Yes

for counter/technological functions

- parameterizable Yes

Cable length

- shielded, max. 500 m; 50 m for technological functions
- unshielded, max. 300 m; For technological functions: No

Digital outputs

Number of digital outputs 10
 • of which high-speed outputs 4; 100 kHz Pulse Train Output
 integrated channels (DO) 10; of which, 6x 24 V DC and 4x 1.5 V differential
 Output delay with resistive load
 • "0" to "1", max. 1 µs
 • "1" to "0", max. 5 µs

Analog inputs

Number of analog inputs 2
 integrated channels (AI) 2; 0 to 10V

Input ranges	
• Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
integrated channels (AO)	2; 0 to 20 mA
Output ranges, current	
• 0 to 20 mA	Yes
Analog value generation	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	10 bit
• Integration time, parameterizable	Yes
• Conversion time (per channel)	625 μs
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Functionality	
• PROFINET IO Controller	Yes
• PROFINET IO Device	Yes
• Open IE communication	Yes
• Web server	Yes
PROFINET IO Controller	
• Transmission rate, max.	100 Mbit/s
Services	
— Number of connectable IO Devices, max.	16
PROFINET IO Device	
Services	
— Shared device	Yes

— Number of IO Controllers with shared device, max.

2

Protocols

Supports protocol for PROFINET IO

Yes

PROFIBUS

Yes; CM 1243-5 required

AS-Interface

Yes

Protocols (Ethernet)

- TCP/IP

Yes

Further protocols

- MODBUS

Yes

Communication functions

S7 communication

- supported
- as server
- as client

Yes

Yes

Yes

Open IE communication

- TCP/IP
- ISO-on-TCP (RFC1006)
- UDP

Yes

Yes

Yes

Web server

- supported
- User-defined websites

Yes

Yes

Number of connections

- overall

16; dynamically

Test commissioning functions

Status/control

- Status/control variable
- Variables

Yes

Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters

Forcing

- Forcing

Yes

Diagnostic buffer

- present

Yes

Traces

- Number of configurable Traces

2; Up to 512 KB of data per trace are possible

Integrated Functions

Number of counters

6

Counting frequency (counter) max.

1 MHz

Frequency meter

Yes

controlled positioning

Yes

Number of position-controlled positioning axes, max.

8

Number of positioning axes via pulse-direction interface	4; With integrated DO
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	1 MHz

Potential separation

Potential separation digital inputs

- Potential separation digital inputs No
- between the channels, in groups of 1

Potential separation digital outputs

- between the channels No
- between the channels, in groups of 1

EMC

Interference immunity against discharge of static electricity

- Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 Yes
 - Test voltage at air discharge 8 kV
 - Test voltage at contact discharge 6 kV

Interference immunity to cable-borne interference

- Interference immunity on supply lines acc. to IEC 61000-4-4 Yes
- Interference immunity on signal cables acc. to IEC 61000-4-4 Yes

Interference immunity against voltage surge

- on the supply lines acc. to IEC 61000-4-5 Yes

Interference immunity against conducted variable disturbance induced by high-frequency fields

- Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Yes

Emission of radio interference acc. to EN 55 011

- Limit class A, for use in industrial areas Yes; Group 1
- Limit class B, for use in residential areas Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection

Degree of protection acc. to EN 60529

- IP20 Yes

Standards, approvals, certificates

CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes

Marine approval	
• Marine approval	Yes
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-20 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
• horizontal installation, min.	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
• permissible operating height	-1000 to 2000 m
Relative humidity	
• permissible range (without condensation) at 25 °C	95 %
Vibrations	
• Vibrations	2G wall mounting, 1G DIN rail
• Operation, tested according to IEC 60068-2-6	Yes
Shock test	
• tested according to IEC 60068-2-27	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
Extended ambient conditions	
Pollutant concentrations	
— SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
Configuration	
Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	

- adjustable

Yes

Dimensions

Width	150 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx.	500 g
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last modified: 09.04.2016