

SIMATIC S7-1200, CPU 1211C, COMPACT CPU, AC/DC/RELAY,
ONBOARD I/O: 6 DI 24V DC; 4 DO RELAY 2A; 2 AI 0 - 10V DC,
POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ,
PROGRAM/DATA MEMORY: 50 KB



General information	
Product type designation	CPU 1211C AC/DC/Relay
Firmware version	V4.1
Engineering with	
<ul style="list-style-type: none"> Programming package 	STEP 7 V13 SP1 or higher
Display	
with display	No
Supply voltage	
Rated value (AC)	
<ul style="list-style-type: none"> 120 V AC 	Yes
<ul style="list-style-type: none"> 230 V AC 	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
<ul style="list-style-type: none"> permissible range, lower limit 	47 Hz
<ul style="list-style-type: none"> permissible range, upper limit 	63 Hz
Input current	

Current consumption (rated value)	60 mA at 120 V AC; 30 mA at 240 V AC
Current consumption, max.	180 mA at 120 V AC; 90 mA at 240 V AC
Inrush current, max.	20 A; at 264 V

Output current	
for backplane bus (5 V DC), max.	750 mA; Max. 5 V DC for CM

Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> • 24 V 	20.4 to 28.8V

Power loss	
Power loss, typ.	10 W

Memory	
Work memory	
<ul style="list-style-type: none"> • integrated • expandable 	50 kbyte No
Load memory	
<ul style="list-style-type: none"> • integrated • Plug-in (SIMATIC Memory Card), max. 	1 Mbyte with SIMATIC memory card
Backup	
<ul style="list-style-type: none"> • present • without battery 	Yes; maintenance-free Yes

CPU processing times	
for bit operations, typ.	0.085 µs; / instruction
for word operations, typ.	1.7 µs; / instruction
for floating point arithmetic, typ.	2.3 µs; / instruction

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	
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • Number, max. 	4 kbyte; Size of bit memory address area
Local data	
<ul style="list-style-type: none"> • per priority class, max. 	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB

Address area	
Process image	

- Inputs, adjustable
- Outputs, adjustable

1 kbyte

1 kbyte

Hardware configuration

Number of modules per system, max.

3 communication modules, 1 signal board

Time of day

Clock

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

Digital inputs

Number of digital inputs

6; Integrated

- of which inputs usable for technological functions

3; HSC (High Speed Counting)

integrated channels (DI)

6

Source/sink input

Yes

Number of simultaneously controllable inputs

all mounting positions

— up to 40 °C, max.

6

Input voltage

- Rated value (DC) 24 V
- for signal "0" 5 V DC at 1 mA
- for signal "1" 15 V DC at 2.5 mA

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; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz

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

4; Relays

integrated channels (DO)

4

Switching capacity of the outputs

- with resistive load, max.

2 A

• on lamp load, max.	30 W with DC, 200 W with AC
Output delay with resistive load	
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Switching frequency	
• of the pulse outputs, with resistive load, max.	1 Hz
Relay outputs	
• Number of relay outputs	4
• Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m

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	0

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	Yes
• as server	Yes
• as client	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
• UDP	Yes
Web server	
• supported	Yes
• User-defined websites	Yes
Number of connections	
• overall	16; dynamically
Test commissioning functions	
Status/control	
• Status/control variable	Yes
• Variables	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	3
Counting frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	Up to 4 with SB 1222
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	
• Potential separation digital inputs	500V AC for 1 minute
• between the channels, in groups of	1
Potential separation digital outputs	
• Potential separation digital outputs	Relays
• 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.
- max.
- horizontal installation, min.
- horizontal installation, max.
- vertical installation, min.
- vertical installation, max.

-20 °C

60 °C

-20 °C

60 °C

-20 °C

50 °C

Ambient temperature during storage/transportation

- min.
- max.

-40 °C

70 °C

Air pressure acc. to IEC 60068-2-13

- Storage/transport, min.
- Storage/transport, max.
- permissible operating height

660 hPa

1 080 hPa

-1000 to 2000 m

Relative humidity

- permissible range (without condensation) at 25 °C

95 %

Vibrations

- Vibrations
- Operation, tested according to IEC 60068-2-6

2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail

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	90 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx. 420 g

last modified: 10/10/2016