



SIMATIC S7-1200, CPU 1211C, COMPACT CPU, DC/DC/RELAY,
ONBOARD I/O: 6 DI 24V DC; 4 DO RELAY 2A; 2 AI 0 - 10V DC,
POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA
MEMORY: 30 KB

General information

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

Load voltage L+

- Rated value (DC) 24 V
- permissible range, lower limit (DC) 20.4 V
- permissible range, upper limit (DC) 28.8 V

Input current

Current consumption (rated value) 300 mA

Current consumption, max. 900 mA

Inrush current, max. 12 A; at 28.8 V DC

Encoder supply

24 V encoder supply

- 24 V L+ minus 4 V DC min.

Output current

Current output to backplane bus (DC 5 V), max. 750 mA

Power losses	
Power loss, typ.	8 W
Memory	
Type of memory	EEPROM
Work memory	
• Integrated	50 kbyte
• expandable	No
Load memory	
• Integrated	1 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; / instruction
for word operations, typ.	1.7 µs; / instruction
for floating point arithmetic, typ.	2.5 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	
• 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.	4 kbyte; Size of bit memory address area
Process image	
• Inputs, adjustable	1 kbyte
• Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 communication modules, 1 signal board
Time of day	
Clock	
• Hardware clock (real-time clock)	Yes
• Deviation per day, max.	+/- 60 s/month at 25 °C
• Backup time	480 h; Typical
Digital inputs	
Number of digital inputs	6; Integrated

<ul style="list-style-type: none"> • of which, inputs usable for technological functions 	3; HSC (High Speed Counting)
integrated channels (DI)	6
m/p-reading	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	6
Input voltage	
<ul style="list-style-type: none"> • Rated value (DC) 	24 V
<ul style="list-style-type: none"> • for signal "0" 	5 V DC at 1 mA
<ul style="list-style-type: none"> • for signal "1" 	15 VDC at 2.5 mA
Input current	
<ul style="list-style-type: none"> • for signal "1", typ. 	1 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	Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	500 m; 50 m for technological functions
<ul style="list-style-type: none"> • Unshielded, max. 	300 m; For technological functions: No
Digital outputs	
Number of digital outputs	4; Relays
integrated channels (DO)	4
short-circuit protection	No; to be provided externally
Switching capacity of the outputs	
<ul style="list-style-type: none"> • with resistive load, max. 	2 A
<ul style="list-style-type: none"> • on lamp load, max. 	30 W with DC, 200 W with AC
Output delay with resistive load	
<ul style="list-style-type: none"> • "0" to "1", max. 	10 ms; max.
<ul style="list-style-type: none"> • "1" to "0", max. 	10 ms; max.
Switching frequency	
<ul style="list-style-type: none"> • of the pulse outputs, with resistive load, max. 	1 Hz
Relay outputs	
<ul style="list-style-type: none"> • Number of relay outputs, integrated 	4
<ul style="list-style-type: none"> • Number of relay outputs 	4
<ul style="list-style-type: none"> • 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
• For voltage/current measurement	2
Integrated channels (AI)	2; 0 to 10 V
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 value creation	
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
1st interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
Functionality	
• PROFINET IO Device	Yes
• PROFINET IO Controller	Yes
PROFINET IO Controller	
• Transmission rate, max.	100 Mbit/s
• Number of connectable IO devices, max.	16
• Prioritized startup	
— Number of IO Devices, max.	16
PROFINET IO Device	
Services	
— Shared device	Yes

— Number of IO controllers with shared device, max.

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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

Counter frequency (counter) max. 100 kHz

Frequency meter Yes

controlled positioning Yes

PID controller Yes

Number of alarm inputs 4

Galvanic isolation

Galvanic isolation digital inputs

- Galvanic isolation digital inputs 500V AC for 1 minute
- between the channels, in groups of 1

Galvanic isolation digital outputs

- Galvanic isolation digital outputs Relays
- between the channels No

- between the channels, in groups of

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Permissible potential difference

between different circuits

500 V DC between 24 V DC and 5 V DC

EMC

Interference immunity against discharge of static electricity

- Interference immunity against discharge of static electricity acc. to IEC 61000-4-2
 - 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 lines acc. to IEC 61000-4-4 Yes

Surge immunity

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

Immunity against conducted interference 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 to EN 60529

- IP20 Yes

Standards, approvals, certificates

CE mark Yes

UL approval Yes

cULus Yes

RCM (formerly C-TICK) Yes

FM approval Yes

Marine approval

- Marine approval Yes

Ambient conditions

Free fall

- Drop height, max. (in packaging) 0.3 m; five times, in dispatch package

Ambient temperature in operation

- Min. -20 °C
- max. 60 °C
- horizontal installation, min. -20 °C

• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
Storage/transport temperature	
• Min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
• Permissible operating height	-1000 to 2000 m
Relative humidity	
• Operation, max.	95 %; no condensation
• Permissible range (without condensation) at 25 °C	95 %
Vibrations	
• Vibrations	2G wall mounting, 1G DIN rail
• Operation, checked according to IEC 60068-2-6	Yes
Shock test	
• checked 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
Pollutant concentrations	
— SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
• can be set	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	380 g
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