

*** SPARE PART*** SIMATIC S7-1200, CPU 1212C, COMPACT
 CPU, AC/DC/RLY, ONBOARD I/O: 8 DI 24V DC; 6 DO RELAY 2A; 2
 AI 0 - 10V DC, POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ,
 PROGRAM/DATA MEMORY: 25 KB



General information	
Product type designation	CPU 1212C AC/DC/Relay
Engineering with	
<ul style="list-style-type: none"> Programming package 	STEP 7 V10.5 or higher
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
Load voltage L+	
<ul style="list-style-type: none"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> permissible range, lower limit (DC) 	5 V
<ul style="list-style-type: none"> permissible range, upper limit (DC) 	250 V
Input current	

Current consumption (rated value)	80 mA at 120 V AC; 40 mA at 240 V AC
Current consumption, max.	240 mA at 120 V AC; 120 mA at 240 V AC
Inrush current, max.	20 A; at 264 V

Output current	
for backplane bus (5 V DC), max.	1 000 mA; Max. 5 V DC for SM and CM

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

Power loss	
Power loss, typ.	11 W

Memory	
Work memory	
<ul style="list-style-type: none"> • integrated 	25 kbyte
<ul style="list-style-type: none"> • expandable 	No
Load memory	
<ul style="list-style-type: none"> • integrated 	1 Mbyte
<ul style="list-style-type: none"> • Plug-in (SIMATIC Memory Card), max. 	24 Mbyte; with SIMATIC memory card
Backup	
<ul style="list-style-type: none"> • present 	Yes; Entire project maintenance-free in the integral EEPROM
<ul style="list-style-type: none"> • without battery 	Yes

CPU processing times	
for bit operations, typ.	0.1 µs; / Operation
for word operations, typ.	12 µs; / Operation
for floating point arithmetic, typ.	18 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	
<ul style="list-style-type: none"> • Number, max. 	Limited only by RAM for code

Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	2 048 byte
Flag	
<ul style="list-style-type: none"> • Number, max. 	4 kbyte; Size of bit memory address area

Address area	
I/O address area	
<ul style="list-style-type: none"> • Inputs 	1 024 byte
<ul style="list-style-type: none"> • Outputs 	1 024 byte
Process image	

- Inputs, adjustable
- Outputs, adjustable

1 kbyte

1 kbyte

Hardware configuration

Number of modules per system, max. 3 comm. modules, 1 signal board, 2 signal modules

Time of day

Clock

- Hardware clock (real-time) Yes
- Backup time 240 h; Typical
- Deviation per day, max. +/- 60 s/month at 25 °C

Digital inputs

Number of digital inputs 8; Integrated
 • of which inputs usable for technological functions 4; HSC (High Speed Counting)

Source/sink input Yes

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 current

- 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 at 100 kHz & 1 at 30 kHz, differential: 3 at 80 kHz & 1 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 6; Relays

Short-circuit protection No; to be provided externally

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	6
• 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
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	
Cable length	
• shielded, max.	100 m; shielded, twisted pair
Analog value generation for the inputs	
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

Protocols	
Supports protocol for PROFINET IO	No
PROFIBUS	No
AS-Interface	No
Protocols (Ethernet)	
• TCP/IP	Yes
Further protocols	
• MODBUS	No
Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
Web server	
• supported	Yes
• User-defined websites	Yes
Number of connections	
• overall	15; dynamically
Test commissioning functions	
Status/control	
• Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
• Forcing	Yes
Integrated Functions	
Number of counters	4
Counting frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	
• Potential separation digital inputs	No
• between the channels, in groups of	1
Potential separation digital outputs	
• Potential separation digital outputs	Yes; Relays
• between the channels	No

- between the channels, in groups of 2

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 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
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes

Ambient conditions

Free fall

- Fall height, max. 0.3 m; five times, in product package

Ambient temperature during operation

- min. 0 °C
- max. 55 °C
- horizontal installation, min. 0 °C
- horizontal installation, max. 55 °C
- vertical installation, min. 0 °C
- vertical installation, max. 45 °C

• permissible temperature change	5°C to 55°C, 3°C / minute
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 %
• Operation, max.	95 %; no condensation
Vibrations	
• Vibrations	2 g (m/s ²) wall mounting, 1 g (m/s ²) 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	
— SO ₂ at RH < 60% without condensation	SO ₂ : < 0.5 ppm; H ₂ S: < 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.	425 g
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