

SIMATIC S7-1200, CPU 1214C, COMPACT CPU, DC/DC/DC,  
ONBOARD I/O: 14 DI 24V DC; 10 DO 24 V DC; 2 AI 0 - 10V DC,  
POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA  
MEMORY: 75 KB



### General information

#### Engineering with

- Programming package STEP 7 V11 SP2 or higher

### Display

with display No

### Supply voltage

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, max. 1.5 A; 24 V DC  
Inrush current, max. 12 A; at 28.8 V

### Encoder supply

24 V encoder supply

- 24 V

Permissible range: 20.4V to 28.8V

### Output current

Current output to backplane bus (DC 5 V), max. 1 600 mA; Max. 5 V DC for SM and CM

### Power losses

Power loss, typ. 12 W

### Memory

Type of memory EEPROM

Usable memory for user data 75 kbyte

#### Work memory

- Integrated 75 kbyte
- expandable No

#### Load memory

- Integrated 4 Mbyte

#### Backup

- present maintenance-free
- without battery Yes

### CPU processing times

for bit operations, typ. 0.085  $\mu$ s; / instruction

for word operations, typ. 1.7  $\mu$ s; / instruction

for floating point arithmetic, typ. 2.5  $\mu$ s; / 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. 8 kbyte; Size of bit memory address area

### 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
• Deviation per day, max.	60 s/month at 25 °C
• Backup time	480 h; Typical

### Digital inputs

Number of digital inputs	14; Integrated
• of which, inputs usable for technological functions	6; HSC (High Speed Counting)
integrated channels (DI)	14
m/p-reading	Yes

Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14

Input voltage	
• Rated value (DC)	24 V
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 VDC 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 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz

Cable length	
• Cable length, shielded, max.	500 m; 50 m for technological functions
• Cable length 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
short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)

Switching capacity of the outputs	
• with resistive load, max.	0.5 A
• on lamp load, max.	5 W

Output voltage	
• for signal "0", max.	0.1 V; with 10 kOhm load

• for signal "1", min.	20 V
<b>Output current</b>	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
<b>Output delay with resistive load</b>	
• "0" to "1", max.	1 $\mu$ s
• "1" to "0", max.	5 $\mu$ s
<b>Switching frequency</b>	
• of the pulse outputs, with resistive load, max.	100 kHz
<b>Relay outputs</b>	
• Max. number of relay outputs, integrated	0
<b>Cable length</b>	
• Cable length, shielded, max.	500 m
• Cable length unshielded, max.	150 m
<b>Analog inputs</b>	
Number of analog inputs	2
Integrated channels (AI)	2; 0 to 10 V
<b>Input ranges</b>	
• Voltage	Yes
<b>Input ranges (rated values), voltages</b>	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	$\geq 100$ k ohms
<b>Cable length</b>	
• Cable length, shielded, max.	100 m; twisted and shielded
<b>Analog outputs</b>	
Number of analog outputs	0
<b>Cable length</b>	
• Cable length, shielded, max.	100 m; Shielded, twisted wire pair
<b>Analog value creation</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	10 bit
• Integration time, parameterizable	Yes
• Conversion time (per channel)	625 $\mu$ s
<b>Encoder</b>	
<b>Connectable encoders</b>	
• 2-wire sensor	Yes
<b>1st interface</b>	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes

Autonegotiation	Yes
Autocrossing	Yes
<b>Functionality</b>	
• PROFINET IO Controller	Yes
<b>Communication functions</b>	
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
• As client	Yes
<b>Open IE communication</b>	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
• UDP	Yes
<b>Web server</b>	
• supported	Yes
• User-defined websites	Yes
<b>Test commissioning functions</b>	
<b>Status/control</b>	
• Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
<b>Forcing</b>	
• Forcing	Yes
<b>Diagnostic buffer</b>	
• present	Yes
<b>Integrated Functions</b>	
Number of counters	6
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	2
Limit frequency (pulse)	100 kHz
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
• Galvanic isolation digital inputs	500V AC for 1 minute
• between the channels, in groups of	1
<b>Galvanic isolation digital outputs</b>	
• Galvanic isolation digital outputs	Yes
• between the channels	No
• between the channels, in groups of	1

<b>Permissible potential difference</b>	
between different circuits	500 V DC between 24 V DC and 5 V DC
<b>EMC</b>	
<b>Interference immunity against discharge of static electricity</b>	
• 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
<b>Interference immunity to cable-borne interference</b>	
• Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
• Interference immunity on signal lines acc. to IEC 61000-4-4	Yes
<b>Surge immunity</b>	
• on the supply lines acc. to IEC 61000-4-5	Yes
<b>Immunity against conducted interference induced by high-frequency fields</b>	
• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6	Yes
<b>Emission of radio interference acc. to EN 55 011</b>	
• 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
<b>Degree and class of protection</b>	
Degree of protection to EN 60529	
• IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
FM approval	Yes
<b>Marine approval</b>	
• Marine approval	Yes
<b>Ambient conditions</b>	
<b>Operating temperature</b>	
• 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
<b>Storage/transport temperature</b>	

• Min.	-40 °C
• max.	70 °C
<b>Air pressure</b>	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Relative humidity</b>	
• Operation, max.	95 %; no condensation
<b>Vibrations</b>	
• Vibrations	2G wall mounting, 1G DIN rail
• Operation, checked according to IEC 60068-2-6	Yes
<b>Shock test</b>	
• 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

### Climatic and mechanical conditions for storage and transport

<b>Climatic conditions for storage and transport</b>	
<b>Free fall</b>	
— Drop height, max. (in packaging)	0.3 m; five times, in dispatch package
<b>Temperature</b>	
— Permissible temperature range	-40 °C to +70 °C
<b>Relative humidity</b>	
— Permissible range (without condensation) at 25 °C	95 %

### Mechanical and climatic conditions during operation

<b>Climatic conditions in operation</b>	
<b>Temperature</b>	
— Min.	-20 °C
— max.	60 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
— Permissible air pressure	1080 to 795 hPa
— Permissible operating height	-1000 to 2000 m
<b>Pollutant concentrations</b>	
— SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free

### Configuration

<b>programming</b>	
<b>Programming language</b>	
— LAD	Yes
— FBD	Yes
— SCL	Yes
<b>Cycle time monitoring</b>	
• can be set	Yes

## Dimensions

Width	110 mm
Height	100 mm
Depth	75 mm

## Weights

Weight, approx.	415 g
<b>last modified:</b>	14.10.2014