

SIMATIC S7-1200, CPU 1215C, compact CPU, AC/DC/relay, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DO relay 2 A, 2 AI 0-10 V DC, 2 AO 0-20 mA DC, Power supply: AC 85-264 V AC at 47-63 Hz, Program/data memory 100 KB



Figure similar

General information	
Product type designation	CPU 1215C AC/DC/relay
Engineering with	
<ul style="list-style-type: none"> <li>Programming package</li> </ul>	STEP 7 V11 SP2 or higher
Supply voltage	
Rated value (AC)	
<ul style="list-style-type: none"> <li>120 V AC</li> </ul>	Yes
<ul style="list-style-type: none"> <li>230 V AC</li> </ul>	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	265 V
Line frequency	
<ul style="list-style-type: none"> <li>permissible range, lower limit</li> </ul>	47 Hz
<ul style="list-style-type: none"> <li>permissible range, upper limit</li> </ul>	63 Hz
Input current	
Current consumption (rated value)	100 mA at 120 V AC; 50 mA at 240 V AC
Inrush current, max.	20 A; at 264 V

Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
• integrated	100 kbyte
• expandable	No
Load memory	
• integrated	4 Mbyte
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 (incl. timers, 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)	Yes

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

Digital inputs	
Number of digital inputs	14; Integrated
<ul style="list-style-type: none"> <li>• of which inputs usable for technological functions</li> </ul>	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	14
Input voltage	
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• for signal "0"</li> </ul>	5 V DC at 1 mA
<ul style="list-style-type: none"> <li>• for signal "1"</li> </ul>	15 V DC at 2.5 mA
Input current	
<ul style="list-style-type: none"> <li>• for signal "1", typ.</li> </ul>	1 mA
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable	Yes; 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 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	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	500 m; 50 m for technological functions
<ul style="list-style-type: none"> <li>• unshielded, max.</li> </ul>	300 m; For technological functions: No
Digital outputs	
Number of digital outputs	10; Relays
Short-circuit protection	No; to be provided externally
Switching capacity of the outputs	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> </ul>	2 A
<ul style="list-style-type: none"> <li>• on lamp load, max.</li> </ul>	30 W with DC, 200 W with AC
Output delay with resistive load	
<ul style="list-style-type: none"> <li>• "0" to "1", max.</li> </ul>	10 ms; max.
<ul style="list-style-type: none"> <li>• "1" to "0", max.</li> </ul>	10 ms; max.
Switching frequency	
<ul style="list-style-type: none"> <li>• of the pulse outputs, with resistive load, max.</li> </ul>	1 Hz
Relay outputs	

• Number of relay outputs	10
• Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
<b>Cable length</b>	
• shielded, max.	500 m
• unshielded, max.	150 m

### Analog inputs

Number of analog inputs	2
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### Input ranges

• Voltage	Yes
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### 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
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### Analog outputs

Number of analog outputs	2
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### Output ranges, current

• 0 to 20 mA	Yes
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### Cable length

• shielded, max.	100 m; shielded, twisted pair
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### 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
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### 1. Interface

Interface type	PROFINET
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Physics	Ethernet
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Isolated	Yes
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automatic detection of transmission rate	Yes
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Autonegotiation	Yes
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Autocrossing	Yes
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#### Protocols

• PROFINET IO Controller	Yes
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### 2. Interface

Interface type	PROFINET
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Physics	Ethernet
<b>Protocols</b>	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes
AS-Interface	Yes
<b>Protocols (Ethernet)</b>	
• TCP/IP	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>Further protocols</b>	
• MODBUS	Yes
<b>Communication functions</b>	
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
• as client	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
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
• Potential separation digital inputs	500V AC for 1 minute

• between the channels, in groups of	1
<b>Potential separation digital outputs</b>	
• Potential separation digital outputs	Relays
• between the channels	No
• between the channels, in groups of	2
<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 cables acc. to IEC 61000-4-4	Yes
<b>Interference immunity against voltage surge</b>	
• on the supply lines acc. to IEC 61000-4-5	Yes
<b>Interference immunity against conducted variable disturbance 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 acc. to EN 60529	
• IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Marine approval	Yes
<b>Ambient conditions</b>	
<b>Free fall</b>	
• Fall height, max.	0.3 m; five times, in product package

<b>Ambient temperature during operation</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>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
<b>Altitude during operation relating to sea level</b>	
• Installation altitude, min.	-1 000 m
• Installation altitude, max.	2 000 m
<b>Relative humidity</b>	
• Operation, max.	95 %; no condensation
<b>Vibrations</b>	
• Vibration resistance during operation acc. to IEC 60068-2-6	2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail
• Operation, tested according to IEC 60068-2-6	Yes
<b>Shock testing</b>	
• 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
<b>Pollutant concentrations</b>	
• SO <sub>2</sub> at RH < 60% without condensation	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free
<b>Configuration</b>	
<b>Programming</b>	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
<b>Cycle time monitoring</b>	
• adjustable	Yes
<b>Dimensions</b>	
Width	130 mm
Height	100 mm
Depth	75 mm

## Weights

Weight, approx.

550 g

**last modified:**

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