

\*\*\*Spare part\*\*\* SIPLUS S7-1200 CPU 1212C AC/DC/relay for medial exposure with conformal coating based on 6ES7212-1BD30-0XB0 . compact CPU, AC/DC/relay, onboard I/O: 8 DI 24 V DC 6 DO relay 0.5 A 2 AI 0-10 V DC, Power supply: 85-264 V AC @ 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"> <li>Programming package</li> </ul>	STEP 7 Basic V10.5

### Supply voltage

Rated value (AC)	
<ul style="list-style-type: none"> <li>120 V AC</li> <li>230 V AC</li> </ul>	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V

### Line frequency

<ul style="list-style-type: none"> <li>permissible range, lower limit</li> <li>permissible range, upper limit</li> </ul>	47 Hz
	63 Hz

### Load voltage L+

<ul style="list-style-type: none"> <li>Rated value (DC)</li> <li>permissible range, lower limit (DC)</li> <li>permissible range, upper limit (DC)</li> </ul>	24 V
	5 V
	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

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

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

<b>Power loss</b>	
Power loss, typ.	11 W

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

<b>CPU processing times</b>	
for bit operations, typ.	0.1 µs; / Operation
for word operations, typ.	12 µs; / Operation
for floating point arithmetic, typ.	18 µs; / Operation

<b>CPU-blocks</b>	
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"> <li>• Number, max.</li> </ul>	Limited only by RAM for code

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

<b>Address area</b>	
I/O address area	
<ul style="list-style-type: none"> <li>• Inputs</li> </ul>	1 024 byte
<ul style="list-style-type: none"> <li>• Outputs</li> </ul>	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.  $\pm 60$  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 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 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.
<b>Switching frequency</b>	
• of the pulse outputs, with resistive load, max.	1 Hz
<b>Relay outputs</b>	
• Number of relay outputs	6
• 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
<b>Analog inputs</b>	
Number of analog inputs	2
<b>Input ranges</b>	
• Voltage	Yes
<b>Input ranges (rated values), voltages</b>	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	≥100k ohms
<b>Cable length</b>	
• shielded, max.	100 m; twisted and shielded
<b>Analog outputs</b>	
Number of analog outputs	0
<b>Cable length</b>	
• shielded, max.	100 m; shielded, twisted pair
<b>Analog value generation for the inputs</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 μs
<b>Encoder</b>	
<b>Connectable encoders</b>	
• 2-wire sensor	Yes
<b>1. Interface</b>	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
<b>Functionality</b>	

• PROFINET IO Controller	Yes
<b>Protocols</b>	
Supports protocol for PROFINET IO	No
PROFIBUS	No
AS-Interface	No
<b>Protocols (Ethernet)</b>	
• TCP/IP	Yes
<b>Open IE communication</b>	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
<b>Web server</b>	
• User-defined websites	Yes
<b>Further protocols</b>	
• MODBUS	No
<b>Communication functions</b>	
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
<b>Web server</b>	
• supported	Yes
<b>Number of connections</b>	
• overall	15; dynamically
<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>Integrated Functions</b>	
Number of counters	4
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
<b>Potential separation</b>	
<b>Potential separation digital inputs</b>	
• Potential separation digital inputs	No; 500V AC for 1 minute
• between the channels, in groups of	1
<b>Potential separation digital outputs</b>	

- 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 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

### Ambient conditions

#### Free fall

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

#### Ambient temperature during operation

- horizontal installation, min. 0 °C; = Tmin
- horizontal installation, max. 55 °C; = Tmax
- vertical installation, min. 0 °C; = Tmin
- vertical installation, max. 45 °C; = Tmax
- permissible temperature change 5°C to 55°C, 3°C / minute

<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Altitude during operation relating to sea level</b>	
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 080 hPa ... 795 hPa (-1 000 m ... +2 000 m) // Tmin ... (Tmax - 10 K) at 795 hPa ... 658 hPa (+2 000 m ... +3 500 m) // Tmin ... (Tmax - 20 K) at 658 hPa ... 540 hPa (+3 500 m ... +5 000 m)
<b>Relative humidity</b>	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost permitted (no commissioning in bedewed state)
<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; 15 g (m/s <sup>2</sup> ), 11 ms pulse, 6 shocks in each of 3 axes
<b>Resistance</b>	
Use in stationary industrial systems	
— to biologically active substances according to EN 60721-3-3	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
— to chemically active substances according to EN 60721-3-3	Yes; Class 3C4 incl. salt spray. The supplied connector covers must remain on the unused interfaces during operation!
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!
<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	90 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	425 g
<b>last modified:</b>	05/18/2018