

SIPLUS S7-1200 CPU 1212C AC/DC/relay -40...+70°C with conformal coating based on 6ES7212-1BE40-0XB0 . compact CPU, AC/DC/relay, onboard I/O: 8 DI 24 V DC 6 DO relay 2 A 2 AI 0-10 V DC, Power supply: 85-264 V AC at 47-63 Hz, Program/data memory 75 KB

General information	
Product type designation	CPU 1212C AC/DC/relay
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
• permissible range, lower limit	47 Hz
• permissible range, upper limit	63 Hz
Input current	
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	
• 24 V	20.4 to 28.8V
Power loss	
Power loss, typ.	11 W
Memory	
Work memory	
• integrated	75 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; / Operation
for word operations, typ.	1.7 µs; / Operation
for floating point arithmetic, typ.	2.3 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	
• 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.	4 kbyte; Size of bit memory address area
Local data	

<ul style="list-style-type: none"> <li>per priority class, max.</li> </ul>	16 kbyte
<b>Address area</b>	
Process image	
<ul style="list-style-type: none"> <li>Inputs, adjustable</li> </ul>	1 kbyte
<ul style="list-style-type: none"> <li>Outputs, adjustable</li> </ul>	1 kbyte
<b>Hardware configuration</b>	
Number of modules per system, max.	3 com. modules, no signal board can be used, 2 signal modules
<b>Time of day</b>	
Clock	
<ul style="list-style-type: none"> <li>Hardware clock (real-time)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>Backup time</li> </ul>	480 h; Typical
<b>Digital inputs</b>	
Number of digital inputs	8; Integrated
<ul style="list-style-type: none"> <li>of which inputs usable for technological functions</li> </ul>	4; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
<ul style="list-style-type: none"> <li>— up to 40 °C, max.</li> </ul>	8
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	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	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
<ul style="list-style-type: none"> <li>— at "0" to "1", min.</li> </ul>	0.2 ms
<ul style="list-style-type: none"> <li>— at "0" to "1", max.</li> </ul>	12.8 ms
for interrupt inputs	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	Yes
for technological functions	
<ul style="list-style-type: none"> <li>— parameterizable</li> </ul>	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
<b>Digital outputs</b>	
Number of digital outputs	6; Relays
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	
<ul style="list-style-type: none"> <li>Number of relay outputs</li> </ul>	6
<ul style="list-style-type: none"> <li>Number of operating cycles, max.</li> </ul>	mechanically 10 million, at rated load voltage 100 000
Cable length	
<ul style="list-style-type: none"> <li>shielded, max.</li> </ul>	500 m
<ul style="list-style-type: none"> <li>unshielded, max.</li> </ul>	150 m
<b>Analog inputs</b>	
Number of analog inputs	2
Input ranges	
<ul style="list-style-type: none"> <li>Voltage</li> </ul>	Yes

<b>Input ranges (rated values), voltages</b>	
<ul style="list-style-type: none"> <li>● 0 to +10 V</li> <li>— Input resistance (0 to 10 V)</li> </ul>	Yes ≥100k ohms
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>● shielded, max.</li> </ul>	100 m; twisted and shielded
<b>Analog outputs</b>	
Number of analog outputs	0
<b>Analog value generation for the inputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
<ul style="list-style-type: none"> <li>● Resolution with overrange (bit including sign), max.</li> <li>● Integration time, parameterizable</li> <li>● Conversion time (per channel)</li> </ul>	10 bit Yes 625 μs
<b>Encoder</b>	
<b>Connectable encoders</b>	
<ul style="list-style-type: none"> <li>● 2-wire sensor</li> </ul>	Yes
<b>1. Interface</b>	
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
<b>Interface types</b>	
<ul style="list-style-type: none"> <li>● RJ 45 (Ethernet)</li> </ul>	Yes
<b>Protocols</b>	
<ul style="list-style-type: none"> <li>● PROFINET IO Controller</li> <li>● PROFINET IO Device</li> <li>● Open IE communication</li> <li>● Web server</li> </ul>	Yes Yes Yes Yes
<b>PROFINET IO Controller</b>	
<ul style="list-style-type: none"> <li>● Transmission rate, max.</li> </ul>	100 Mbit/s
<b>Services</b>	
— Number of connectable IO Devices, max.	16
<b>PROFINET IO Device</b>	
<b>Services</b>	
— Shared device	Yes
— Number of IO Controllers with shared device, max.	2
<b>Protocols</b>	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes
<b>Protocols (Ethernet)</b>	
<ul style="list-style-type: none"> <li>● TCP/IP</li> </ul>	Yes
<b>Open IE communication</b>	
<ul style="list-style-type: none"> <li>● TCP/IP</li> <li>● ISO-on-TCP (RFC1006)</li> <li>● UDP</li> </ul>	Yes Yes Yes
<b>Web server</b>	
<ul style="list-style-type: none"> <li>● supported</li> <li>● User-defined websites</li> </ul>	Yes Yes
<b>Further protocols</b>	
<ul style="list-style-type: none"> <li>● MODBUS</li> </ul>	Yes
<b>Communication functions</b>	
<b>S7 communication</b>	
<ul style="list-style-type: none"> <li>● supported</li> <li>● as server</li> <li>● as client</li> </ul>	Yes Yes Yes
<b>Number of connections</b>	
<ul style="list-style-type: none"> <li>● overall</li> </ul>	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	4
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	
• Potential separation digital inputs	500V AC for 1 minute
• between the channels, in groups of	1
Potential separation digital outputs	
• Potential separation digital outputs	Relays
• between the channels	No
• between the channels, in groups of	2
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	
• Interference immunity on 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
Ambient conditions	
Free fall	
• Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
• min.	-40 °C; = Tmin; Startup @ -25 °C
• max.	70 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 4, digital outputs 3, analog inputs 2 (no adjacent points) with horizontal mounting position; Tmax > +60 °C number of simultaneously switched-on digital inputs 3, digital outputs 2, analog inputs 0 (no adjacent points) with horizontal mounting position
• vertical installation, min.	-40 °C; = Tmin; Startup @ -25 °C
• vertical installation, max.	50 °C; = Tmax
• At cold restart, min.	-25 °C

<b>Ambient temperature during storage/transportation</b>	
• min.	-40 °C
• max.	70 °C
<b>Altitude during operation relating to sea level</b>	
• Installation altitude above sea level, max.	2 000 m
• Ambient air temperature-barometric pressure-altitude	Tmin ... Tmax at 1 140 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); above 2 000 m max. 132 V AC
<b>Relative humidity</b>	
• With condensation, tested in accordance with IEC 60068-2-38, max.	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<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
<b>Resistance</b>	
<b>Coolants and lubricants</b>	
— Resistant to commercially available coolants and lubricants	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>	
— 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 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-3	Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>	
— to biologically active substances according to EN 60721-3-6	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
— to chemically active substances according to EN 60721-3-6	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
— to mechanically active substances according to EN 60721-3-6	Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>	
— Against chemically active substances acc. to EN 60654-4	Yes; Class 3 (excluding trichlorethylene)
— Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04	Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil)
<b>Remark</b>	
— Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>	
• Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
• Protection against fouling acc. to EN 60664-3	Yes; Type 1 protection
• Military testing according to MIL-I-46058C, Amendment 7	Yes; Discoloration of coating possible during service life
• Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A	Yes; Conformal coating, Class A
<b>Configuration</b>	
<b>Programming</b>	
<b>Programming language</b>	
— LAD	Yes
— FBD	Yes
— SCL	Yes
<b>Cycle time monitoring</b>	
• adjustable	Yes

Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	425 g
<b>last modified:</b>	1/16/2021 