

SIPLUS S7-1200 CPU 1214C DC/DC/relay -40...+70 °C with conformal coating based on 6ES7214-1HG31-0XB0 . compact CPU, DC/DC/relay, onboard I/O: "14 DI 24 V DC; 10 DO relay 2 A; 2 AI 0-10 V DC, Power supply: DC 20.4-28.8V DC, Program/data memory 75 KB



Figure similar

General information	
Product type designation	CPU 1214C DC/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 (DC)	
<ul style="list-style-type: none"> <li>24 V DC</li> </ul>	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
<ul style="list-style-type: none"> <li>Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>permissible range, lower limit (DC)</li> </ul>	5 V
<ul style="list-style-type: none"> <li>permissible range, upper limit (DC)</li> </ul>	250 V
Input current	
Current consumption (rated value)	500 mA; Typical
Current consumption, max.	1.2 A; 24 V DC

Inrush current, max.	12 A; at 28.8 V
<b>Output current</b>	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
<b>Encoder supply</b>	
24 V encoder supply	
• 24 V	Permissible range: 20.4V to 28.8V
<b>Power loss</b>	
Power loss, typ.	12 W
<b>Memory</b>	
<b>Work memory</b>	
• integrated	75 kbyte
• expandable	No
<b>Load memory</b>	
• integrated	4 Mbyte
<b>Backup</b>	
• present	Yes; maintenance-free
• without battery	Yes
<b>CPU processing times</b>	
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
<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
<b>OB</b>	
• Number, max.	Limited only by RAM for code
<b>Data areas and their retentivity</b>	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
<b>Flag</b>	
• Number, max.	8 kbyte; Size of bit memory address area
<b>Address area</b>	
<b>I/O address area</b>	
• Inputs	1 024 byte
• Outputs	1 024 byte
<b>Process image</b>	
• Inputs, adjustable	1 kbyte
• Outputs, adjustable	1 kbyte

Hardware configuration	
Number of modules per system, max.	3 communication modules, no signal board can be used, 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
• of which inputs usable for technological functions	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	
• 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 & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 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	10; 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
<b>Output delay with resistive load</b>	
• "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	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

<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>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	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>	
• 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>Web server</b>	
• supported	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
<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

<b>Permissible potential difference</b>	
between different circuits	500 V DC between 24 V DC and 5 V DC

## EMC

<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

## Degree and class of protection

<b>Degree of protection acc. to EN 60529</b>	
• IP20	Yes

## Standards, approvals, certificates

CE mark	Yes
UL approval	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes

## Ambient conditions

<b>Free fall</b>	
• Fall height, max.	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
• min.	-40 °C; = Tmin; Startup @ -25 °C

<ul style="list-style-type: none"> <li>• max.</li> </ul>	70 °C; = Tmax; > +60 °C Number of simultaneously controllable inputs and outputs max. 50%; no signal board can be used
<ul style="list-style-type: none"> <li>• horizontal installation, min.</li> </ul>	-40 °C; = Tmin; Startup @ -25 °C
<ul style="list-style-type: none"> <li>• horizontal installation, max.</li> </ul>	70 °C; = Tmax; > +60 °C Number of simultaneously controllable inputs and outputs max. 50%; no signal board can be used
<ul style="list-style-type: none"> <li>• vertical installation, min.</li> </ul>	-40 °C; = Tmin; Startup @ -25 °C
<ul style="list-style-type: none"> <li>• vertical installation, max.</li> </ul>	50 °C; = Tmax
<ul style="list-style-type: none"> <li>• At cold restart, min.</li> </ul>	-25 °C
<b>Ambient temperature during storage/transportation</b>	
<ul style="list-style-type: none"> <li>• min.</li> </ul>	-40 °C
<ul style="list-style-type: none"> <li>• max.</li> </ul>	70 °C
<b>Altitude during operation relating to sea level</b>	
<ul style="list-style-type: none"> <li>• Installation altitude above sea level, max.</li> </ul>	2 000 m
<ul style="list-style-type: none"> <li>• Ambient air temperature-barometric pressure-altitude</li> </ul>	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>	
<ul style="list-style-type: none"> <li>• With condensation, tested in accordance with IEC 60068-2-38, max.</li> </ul>	100 %; RH incl. condensation/frost (no commissioning under condensation conditions)
<b>Vibrations</b>	
<ul style="list-style-type: none"> <li>• Vibration resistance during operation acc. to IEC 60068-2-6</li> </ul>	2 g (m/s <sup>2</sup> ) wall mounting, 1 g (m/s <sup>2</sup> ) DIN rail
<ul style="list-style-type: none"> <li>• Operation, tested according to IEC 60068-2-6</li> </ul>	Yes
<b>Shock testing</b>	
<ul style="list-style-type: none"> <li>• tested according to IEC 60068-2-27</li> </ul>	Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
<b>Resistance</b>	
<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; *
from supply voltage 1L+	

— Note regarding classification of environmental conditions acc. to EN 60721

\* The supplied plug covers must remain in place over the unused interfaces during operation!

## Configuration

Programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
• adjustable	Yes

## Dimensions

Width	110 mm
Height	100 mm
Depth	75 mm

## Weights

Weight, approx.	435 g
<b>last modified:</b>	05/18/2018