

Siemens  
EcoTech



SIPLUS S7-1200 CPU 1215C AC/DC/relay based on 6ES7215-1BG40-0XB0 with conformal coating, -40...+60 °C, start up -25 °C, compact CPU, AC/DC/relay, 2 PROFINET ports onboard I/O: 14 DI 24 V DC; 10 DQ relay 2 A; 2 AI 0-10 V DC, 2 AQ 0-20 mA DC power supply: AC 85-264 V AC @ 47-63 Hz, program/data memory 125 KB



Figure similar

General information	
Product type designation	CPU 1215C AC/DC/relay
based on	<a href="#">6ES7215-1BG40-0XB0</a>
Engineering with	
<ul style="list-style-type: none"> <li>STEP 7 TIA Portal configurable/integrated from version</li> </ul>	see entry ID: 109746275
Supply voltage	
Rated value (AC)	
<ul style="list-style-type: none"> <li>120 V AC</li> <li>230 V AC</li> </ul>	Yes 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> <li>permissible range, upper limit</li> </ul>	47 Hz 63 Hz
Input current	
Current consumption (rated value)	100 mA at 120 V AC; 50 mA at 240 V AC
Current consumption, max.	300 mA at 120 V AC; 150 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
I <sup>2</sup> t	0.8 A <sup>2</sup> ·s
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> <li>24 V</li> </ul>	20.4 to 28.8V
Power loss	
Power loss, typ.	14 W
Memory	
Work memory	
<ul style="list-style-type: none"> <li>integrated</li> </ul>	100 kbyte
Load memory	
<ul style="list-style-type: none"> <li>integrated</li> <li>Plug-in (SIMATIC Memory Card), max.</li> </ul>	4 Mbyte with SIMATIC memory card
Backup	
<ul style="list-style-type: none"> <li>present</li> <li>maintenance-free</li> <li>without battery</li> </ul>	Yes Yes Yes

CPU processing times	
for bit operations, typ.	0.08 µs; / instruction
for word operations, typ.	1.7 µs; / instruction
for floating point arithmetic, typ.	2.3 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.	14 kbyte
Flag	
• Size, max.	8 kbyte; Size of bit memory address area
Local data	
• per priority class, max.	16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB
Address area	
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
• 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 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	
• 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
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.
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
<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	2
<b>Output ranges, current</b>	
• 0 to 20 mA	Yes
<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
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
<b>Interface types</b>	
• RJ 45 (Ethernet)	Yes
• Number of ports	2
• integrated switch	Yes
<b>Protocols</b>	
• PROFINET IO Controller	Yes
• PROFINET IO Device	Yes
• SIMATIC communication	Yes
• Open IE communication	Yes; Optionally also encrypted
• Web server	Yes
• Media redundancy	Yes
<b>PROFINET IO Controller</b>	
• Transmission rate, max.	100 Mbit/s
<b>Services</b>	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IRT	No
— PROFIenergy	No
— Prioritized startup	Yes
— Number of IO devices with prioritized startup, max.	16
— Number of connectable IO Devices, max.	16
— Number of connectable IO Devices for RT, max.	16
— of which in line, max.	16
— Activation/deactivation of IO Devices	Yes
— Number of IO Devices that can be simultaneously activated/deactivated, max.	8
— Updating time	The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data.

PROFINET IO Device	
<b>Services</b>	
— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode	No
— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
— Number of IO Controllers with shared device, max.	2
<b>Protocols</b>	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes; OPC UA Server
AS-Interface	Yes; CM 1243-2 required
<b>Protocols (Ethernet)</b>	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
<b>Redundancy mode</b>	
<b>Media redundancy</b>	
— MRP	Yes; as MRP redundancy manager and/or MRP client
— MRPD	No
<b>SIMATIC communication</b>	
• S7 routing	Yes
<b>Open IE communication</b>	
• TCP/IP	Yes
— Data length, max.	8 kbyte
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
• UDP	Yes
— Data length, max.	1 472 byte
<b>Web server</b>	
• supported	Yes
• User-defined websites	Yes
<b>OPC UA</b>	
• Runtime license required	Yes; "Basic" license required
• OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license required
— Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15, Basic256Sha256
— User authentication	"anonymous" or by user name & password
— Number of sessions, max.	10
— Number of subscriptions per session, max.	5
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
— Number of server methods, max.	20
— Number of monitored items, recommended max.	1 000
— Number of server interfaces, max.	2
— Number of nodes for user-defined server interfaces, max.	2 000
<b>Further protocols</b>	
• MODBUS	Yes
<b>communication functions / header</b>	
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
• as client	Yes
• User data per job, max.	See online help (S7 communication, user data size)
<b>Number of connections</b>	
• overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max;

S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 68 max

### Test commissioning functions

Status/control	
<ul style="list-style-type: none"> <li>• Status/control variable</li> <li>• Variables</li> </ul>	<p>Yes</p> <p>Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters</p>
Forcing	
<ul style="list-style-type: none"> <li>• Forcing</li> </ul>	Yes
Diagnostic buffer	
<ul style="list-style-type: none"> <li>• present</li> </ul>	Yes
Traces	
<ul style="list-style-type: none"> <li>• Number of configurable Traces</li> <li>• Memory size per trace, max.</li> </ul>	<p>2</p> <p>512 kbyte</p>

### Interrupts/diagnostics/status information

Diagnostics indication LED	
<ul style="list-style-type: none"> <li>• RUN/STOP LED</li> <li>• ERROR LED</li> <li>• MAINT LED</li> </ul>	<p>Yes</p> <p>Yes</p> <p>Yes</p>

### Integrated Functions

Counter	
<ul style="list-style-type: none"> <li>• Number of counters</li> <li>• Counting frequency, max.</li> </ul>	<p>6</p> <p>100 kHz</p>
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction interface	Up to 4 with SB 1222
PID controller	Yes
Number of alarm inputs	4

### Potential separation

Potential separation digital inputs	
<ul style="list-style-type: none"> <li>• Potential separation digital inputs</li> <li>• between the channels, in groups of</li> </ul>	<p>500 V AC for 1 minute</p> <p>1</p>
Potential separation digital outputs	
<ul style="list-style-type: none"> <li>• Potential separation digital outputs</li> <li>• between the channels</li> <li>• between the channels, in groups of</li> </ul>	<p>Relays</p> <p>No</p> <p>2</p>

### EMC

Interference immunity against discharge of static electricity	
<ul style="list-style-type: none"> <li>• Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 <ul style="list-style-type: none"> <li>— Test voltage at air discharge</li> <li>— Test voltage at contact discharge</li> </ul> </li> </ul>	<p>Yes</p> <p>8 kV</p> <p>6 kV</p>
Interference immunity to cable-borne interference	
<ul style="list-style-type: none"> <li>• Interference immunity on supply lines acc. to IEC 61000-4-4</li> <li>• Interference immunity on signal cables acc. to IEC 61000-4-4</li> </ul>	<p>Yes</p> <p>Yes</p>
Interference immunity against voltage surge	
<ul style="list-style-type: none"> <li>• Interference immunity on supply lines acc. to IEC 61000-4-5</li> </ul>	Yes
Interference immunity against conducted variable disturbance induced by high-frequency fields	
<ul style="list-style-type: none"> <li>• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</li> </ul>	Yes
Emission of radio interference acc. to EN 55 011	
<ul style="list-style-type: none"> <li>• Limit class A, for use in industrial areas</li> <li>• Limit class B, for use in residential areas</li> </ul>	<p>Yes; Group 1</p> <p>Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011</p>

### Degree and class of protection

IP degree of protection	IP20
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### Standards, approvals, certificates

Siemens Eco Profile (SEP)	Siemens EcoTech
Ecological footprint	

<ul style="list-style-type: none"> <li>environmental product declaration</li> </ul>	Yes; type II acc. to ISO 14021
<b>Global warming potential</b>	
— global warming potential, (total) [CO2 eq]	106 kg
— global warming potential, (during production) [CO2 eq]	18.5 kg
— global warming potential, (during operation) [CO2 eq]	88.2 kg
— global warming potential, (after end of life cycle) [CO2 eq]	-1.1 kg
<b>Ambient conditions</b>	
<b>Free fall</b>	
<ul style="list-style-type: none"> <li>Fall height, max.</li> </ul>	0.3 m; five times, in product package
<b>Ambient temperature during operation</b>	
<ul style="list-style-type: none"> <li>min.</li> </ul>	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C
<ul style="list-style-type: none"> <li>max.</li> </ul>	60 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2, analog outputs 2 (no adjacent points) with horizontal mounting position
<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>Coolants and lubricants</b>	
<ul style="list-style-type: none"> <li>Resistant to commercially available coolants and lubricants</li> </ul>	Yes; Incl. diesel and oil droplets in the air
<b>Use in stationary industrial systems</b>	
<ul style="list-style-type: none"> <li>to biologically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request
<ul style="list-style-type: none"> <li>to chemically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul style="list-style-type: none"> <li>to mechanically active substances according to EN 60721-3-3</li> </ul>	Yes; Class 3S4 incl. sand, dust, *
<b>Use on ships/at sea</b>	
<ul style="list-style-type: none"> <li>to biologically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request
<ul style="list-style-type: none"> <li>to chemically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); *
<ul style="list-style-type: none"> <li>to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6S3 incl. sand, dust; *
<b>Usage in industrial process technology</b>	
<ul style="list-style-type: none"> <li>Against chemically active substances acc. to EN 60654-4</li> </ul>	Yes; Class 3 (excluding trichlorethylene)
<ul style="list-style-type: none"> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	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>	
<ul style="list-style-type: none"> <li>Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04</li> </ul>	* The supplied plug covers must remain in place over the unused interfaces during operation!
<b>Conformal coating</b>	
<ul style="list-style-type: none"> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> </ul>	Yes; Class 2 for high reliability
<ul style="list-style-type: none"> <li>Protection against fouling acc. to EN 60664-3</li> </ul>	Yes; Type 1 protection

- Military testing according to MIL-I-46058C, Amendment 7
- Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A

Yes; Discoloration of coating possible during service life  
 Yes; Conformal coating, Class A

### configuration / header

#### configuration / programming / header

Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes

#### Know-how protection

• User program protection/password protection	Yes
• Copy protection	Yes
• Block protection	Yes

#### Access protection

• protection of confidential configuration data	Yes
• Protection level: Write protection	Yes
• Protection level: Read/write protection	Yes
• Protection level: Complete protection	Yes
• User administration	Yes; device-wide
• Number of users	42
• Number of groups	14
• Number of roles	20

#### programming / cycle time monitoring / header

• adjustable	Yes
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### Dimensions

Width	130 mm
Height	100 mm
Depth	75 mm

### Weights

Weight, approx.	550 g
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### Classifications

	Version	Classification
eClass	14	27-24-22-07
eClass	12	27-24-22-07
eClass	9.1	27-24-22-07
eClass	9	27-24-22-07
eClass	8	27-24-22-07
eClass	7.1	27-24-22-07
eClass	6	27-24-22-07
ETIM	10	EC000236
ETIM	9	EC000236
ETIM	8	EC000236
ETIM	7	EC000236
IDEA	4	3565
UNSPSC	15	32-15-17-05

### Approvals / Certificates

#### General Product Approval

[Manufacturer Declaration](#)



[China RoHS](#)



[Metrological Approval](#)

EMV	Maritime application	Environment
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[KC](#)



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