



Figure similar

SIPLUS S7-1200 CPU 1215C DC/DC/relay based on 6ES7215-1HG40-0XB0 with conformal coating, -40...+60 °C, start up -25 °C, compact CPU, DC/DC/relay, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DQ relay 2 A; 2 AI 0-10 V DC, power supply: DC 20.4-28.8 V DC, program/data memory 125 KB

General information	
Product type designation	CPU 1215C DC/DC/relay
Firmware version	V4.1
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 (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> <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)	500 mA; CPU only
Current consumption, max.	1 500 mA; CPU with all expansion modules
Inrush current, max.	12 A; at 28.8 V DC
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> <li>24 V</li> </ul>	L+ minus 4 V DC min.
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
<ul style="list-style-type: none"> <li>integrated</li> <li>expandable</li> </ul>	100 kbyte No
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>without battery</li> </ul>	Yes; maintenance-free 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	
• Size, max.	8 kbyte; Size of bit memory address area
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 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 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.
Switching frequency	
• of the pulse outputs, with resistive load, max.	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
<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 — Input resistance (0 to 10 V)	Yes ≥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>Analog value generation for the outputs</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	10 bit
<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
<b>Protocols</b>	
• PROFINET IO Controller	Yes
• PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
<b>PROFINET IO Controller</b>	
• Transmission rate, max.	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
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 required
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 / header</b>	
<b>S7 communication</b>	
• supported	Yes
• as server	Yes
• as client	Yes
<b>Number of connections</b>	
• overall	16; 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>Diagnostic buffer</b>	
• present	Yes
<b>Traces</b>	
• Number of configurable Traces	2; Up to 512 KB of data per trace are possible
<b>Integrated Functions</b>	
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
<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>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>	
• Interference immunity on 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>	
IP degree of protection	IP20

Ambient conditions	
Free fall	
<ul style="list-style-type: none"> <li>Fall height, max.</li> </ul>	0.3 m; five times, in product package
Ambient temperature during operation	
<ul style="list-style-type: none"> <li>min.</li> <li>max.</li> </ul>	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C 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
Ambient temperature during storage/transportation	
<ul style="list-style-type: none"> <li>min.</li> <li>max.</li> </ul>	-40 °C 70 °C
Altitude during operation relating to sea level	
<ul style="list-style-type: none"> <li>Installation altitude above sea level, max.</li> <li>Ambient air temperature-barometric pressure-altitude</li> </ul>	2 000 m 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
Relative humidity	
<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)
Vibrations	
<ul style="list-style-type: none"> <li>Vibration resistance during operation acc. to IEC 60068-2-6</li> <li>Operation, tested according 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 Yes
Shock testing	
<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
Resistance	
Coolants and lubricants	
<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
Use in stationary industrial systems	
<ul style="list-style-type: none"> <li>to biologically active substances according to EN 60721-3-3</li> <li>to chemically active substances according to EN 60721-3-3</li> <li>to mechanically 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 Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 3S4 incl. sand, dust, *
Use on ships/at sea	
<ul style="list-style-type: none"> <li>to biologically active substances according to EN 60721-3-6</li> <li>to chemically active substances according to EN 60721-3-6</li> <li>to mechanically active substances according to EN 60721-3-6</li> </ul>	Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * Yes; Class 6S3 incl. sand, dust; *
Usage in industrial process technology	
<ul style="list-style-type: none"> <li>Against chemically active substances acc. to EN 60654-4</li> <li>Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04</li> </ul>	Yes; Class 3 (excluding trichlorethylene) 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)
Remark	
<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!
Conformal coating	
<ul style="list-style-type: none"> <li>Coatings for printed circuit board assemblies acc. to EN 61086</li> <li>Protection against fouling acc. to EN 60664-3</li> <li>Military testing according to MIL-I-46058C, Amendment 7</li> <li>Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A</li> </ul>	Yes; Class 2 for high reliability Yes; Type 1 protection Yes; Discoloration of coating possible during service life Yes; Conformal coating, Class A

configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
programming / cycle time monitoring / header	
• adjustable	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	585 g
<b>last modified:</b>	4/1/2022 