

Spare part SIPLUS S7-1200 CPU 1215C DC/DC/DC -40...+70 °C With conformal coating Based on 6ES7215-1AG31-0XB0 .
 Compact CPU, DC/DC/DC, 2 PROFINET ports, onboard I/O: "14 DI 24 V DC; 10 DQ 24 V DC;" 2 AI 0-10 V DC, 2 AQ 0-20 mA DC;
 Power supply: DC 20.4-28.8 V DC; Program/data memory 100 KB



Figure similar

General information	
Product type designation	CPU 1215C DC/DC/DC
Engineering with	
<ul style="list-style-type: none"> Programming package 	STEP 7 V11 SP2 or higher
Supply voltage	
Rated value (DC)	Yes
<ul style="list-style-type: none"> 24 V DC 	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"> Rated value (DC) 	24 V
<ul style="list-style-type: none"> permissible range, lower limit (DC) 	5 V
<ul style="list-style-type: none"> permissible range, upper limit (DC) 	250 V
Input current	
Current consumption (rated value)	500 mA; Typical
Current consumption, max.	1 500 A; 24 V DC

Inrush current, max.	12 A; at 28.8 V DC
Output current	
for backplane bus (5 V DC), max.	1 600 mA; Max. 5 V DC for SM and CM
Power loss	
Power loss, typ.	12 W
Memory	
Work memory	
<ul style="list-style-type: none"> integrated 	100 kbyte
<ul style="list-style-type: none"> expandable 	No
Load memory	
<ul style="list-style-type: none"> integrated 	4 Mbyte
Backup	
<ul style="list-style-type: none"> present 	Yes; maintenance-free
<ul style="list-style-type: none"> without battery 	Yes
CPU processing times	
for bit operations, typ.	0.085 μ s; / instruction
for word operations, typ.	1.7 μ s; / instruction
for floating point arithmetic, typ.	2.5 μ s; / 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	
<ul style="list-style-type: none"> Number, max. 	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	10 kbyte
Flag	
<ul style="list-style-type: none"> Number, max. 	8 kbyte; Size of bit memory address area
Address area	
I/O address area	
<ul style="list-style-type: none"> Inputs 	1 024 byte
<ul style="list-style-type: none"> Outputs 	1 024 byte
Process image	
<ul style="list-style-type: none"> Inputs, adjustable 	1 kbyte
<ul style="list-style-type: none"> 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	
<ul style="list-style-type: none"> • Hardware clock (real-time) • Backup time • Deviation per day, max. 	Yes 480 h; Typical ±60 s/month at 25 °C
Digital inputs	
Number of digital inputs	14; Integrated
<ul style="list-style-type: none"> • 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	
<ul style="list-style-type: none"> • Rated value (DC) • for signal "0" • for signal "1" 	24 V 5 V DC at 1 mA 15 V DC at 2.5 mA
Input current	
<ul style="list-style-type: none"> • for signal "1", typ. 	1 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	
<ul style="list-style-type: none"> • shielded, max. • unshielded, max. 	500 m; 50 m for technological functions 300 m; for technological functions: No
Digital outputs	
Number of digital outputs	10
<ul style="list-style-type: none"> • of which high-speed outputs 	4; 100 kHz Pulse Train Output
Short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
<ul style="list-style-type: none"> • with resistive load, max. • on lamp load, max. 	0.5 A 5 W
Output voltage	

• for signal "0", max.	0.1 V; with 10 kOhm load
• for signal "1", min.	20 V
Output current	
• for signal "1" rated value	0.5 A
• for signal "0" residual current, max.	0.1 mA
Output delay with resistive load	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 µs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Relay outputs	
• Number of relay outputs	0
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	
• Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
— Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Output ranges, current	
• 0 to 20 mA	Yes
Cable length	
• shielded, max.	100 m; shielded, twisted pair
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	10 bit
• Integration time, parameterizable	Yes
• Conversion time (per channel)	625 µs
Analog value generation for the outputs	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	10 bit

Encoder	
Connectable encoders	
<ul style="list-style-type: none"> • 2-wire sensor 	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Protocols	
<ul style="list-style-type: none"> • PROFINET IO Controller 	Yes
2. Interface	
Interface type	PROFINET
Physics	Ethernet
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIBUS	Yes
AS-Interface	Yes
Protocols (Ethernet)	
<ul style="list-style-type: none"> • TCP/IP 	Yes
Open IE communication	
<ul style="list-style-type: none"> • TCP/IP • ISO-on-TCP (RFC1006) • UDP 	Yes Yes Yes
Web server	
<ul style="list-style-type: none"> • supported • User-defined websites 	Yes Yes
Further protocols	
<ul style="list-style-type: none"> • MODBUS 	Yes
Communication functions	
S7 communication	
<ul style="list-style-type: none"> • supported • as server • as client 	Yes Yes Yes
Number of connections	
<ul style="list-style-type: none"> • overall 	16; dynamically
Test commissioning functions	
Status/control	
<ul style="list-style-type: none"> • Status/control variable 	Yes

• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
• Forcing	Yes
Diagnostic buffer	
• present	Yes
Integrated Functions	
Number of counters	6
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	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	Yes
• between the channels	No
• between the channels, in groups of	1
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	
• 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
- Limit class B, for use in residential areas

Yes; Group 1

Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection

IP degree of protection

IP20

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; > +60 °C Number of simultaneously controllable inputs and outputs max. 50 %; no signal board can be used
- horizontal installation, min. -40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C
- horizontal installation, max. 70 °C; = Tmax; > +60 °C Number of simultaneously controllable inputs and outputs max. 50 %; no signal board can be used
- vertical installation, min. -40 °C; = Tmin; Startup @ -25 °C
- vertical installation, max. 50 °C; = Tmax
- At cold restart, min. -25 °C

Ambient temperature during storage/transportation

- min. -40 °C
- max. 70 °C

Altitude during operation relating to sea level

- Installation altitude above sea level, max. 5 000 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)

Relative humidity

- With condensation, tested in accordance with IEC 60068-2-38, max. 100 %; RH incl. condensation/frost (no commissioning under condensation conditions)

Vibrations

- Vibration resistance during operation acc. to IEC 60068-2-6 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
- Operation, tested according to IEC 60068-2-6 Yes

Shock testing

- tested according to IEC 60068-2-27 Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms

Resistance

Coolants and lubricants

— Resistant to commercially available coolants and lubricants

Yes; Incl. diesel and oil droplets in the air

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 (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, *

Use on ships/at sea	
— 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; *

Remark	
— 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!

Conformal coating	
<ul style="list-style-type: none"> • Coatings for printed circuit board assemblies acc. to EN 61086 • Protection against fouling acc. to EN 60664-3 • 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 	<p>Yes; Class 2 for high reliability</p> <p>Yes; Type 1 protection</p> <p>Yes; Discoloration of coating possible during service life</p> <p>Yes; Conformal coating, Class A</p>

Configuration

Programming

Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes

Cycle time monitoring	
• adjustable	Yes

Dimensions

Width	130 mm
Height	100 mm
Depth	75 mm

Weights

Weight, approx.	520 g
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