Data sheet



SIPLUS S7-1200 CPU 1215C DC/DC/relay for medial exposure with conformal coating based on 6ES7215-1HG40-0XB0 . compact CPU, DC/DC/relay, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC 10 DO relay 2 A, 2 Al 0-10 V DC 2 AO 0-20 mA DC, Power supply: DC 20.4-28.8V DC, Program/data memory 100 KB

General information	
Product type designation	CPU 1215C DC/DC/relay
Firmware version	V4.1
Engineering with	
Programming package	STEP 7 V13 SP1 or higher
Supply voltage	
Rated value (DC)	
• 24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
Rated value (DC)	24 V
permissible range, lower limit (DC)	5 V
• permissible range, upper limit (DC)	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	
• 24 V	L+ minus 4 V DC min.
Davier land	
Power loss Power loss, typ.	12 W
Fower loss, typ.	IZ VV
Memory	
Work memory	
• integrated	125 kbyte
• expandable	No
Load memory	
• integrated	4 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; / 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),	10 kbyte
max.	
Flag	
Number, 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	

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

Yes

80 kHz & 3 at 30 kHz

Yes; Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at

parameterizablefor technological functions

- parameterizable

Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100 000
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Input ranges	Voe
Voltage	Yes
Input ranges (rated values), voltages	V
• 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
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	40.1%
Resolution with overrange (bit including sign),	10 bit
max.	Yes
Integration time, parameterizable	
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),	10 bit
max.	
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
2 4416 55.155.	**
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Protocols	
PROFINET IO Controller	V
	Yes; Also simultaneously with IO-Device functionality

Transmission rate, max. Services Number of connectable IO Devices, max. PROFINET IO Device Services Supports protocol for PROFINET IO Yes PROFIBUS Ves; CM 1243-5 required As-Interface Yes Protocols (Ethernet) TCP/IP Yes Protocols (Ethernet) TCP/IP Yes SCO-m-TCP (RFC1006) UDP Yes Ves Ves Ves Further protocols Yes Further protocols Yes Communication functions S7 communication S7 communication S7 communication S7 communication S7 communication S7 communication S8 server S9 supported Yes S8 server S9 supported Yes Yes Number of connections S7 communication S1 communication S1 communication S1 communication S2 communication S3 communication S4 communication S6 communication S7 communication S8 communication S9 communication S9 communication S9 communication Yes Number of connections S1 communication Yes Number of connections S1 connections Forcing Forcing Forcing Yes Diagnostic buffer Present Yes Yes Yes Yes Yes Yes Yes Ye	PROFINET IO Controller	
Number of connectable IO Devices, max. PROFINET IO Device Services Shared device Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS States device Yes Protocols (Ethernet) TCP/IP Yes TCP/IP Yes Open IE communication TCP/IP Yes Supported Supported Supported User-defined websites Further protocols MODBUS Communication functions ST communication supported sa server sa scient Supported sa server sa scient Status/control Status/control Status/control Status/control Status/control Status/control variable Variables Forcing	Transmission rate, max.	100 Mbit/s
PROFINET IO Device Services — Shared device Yes — Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO Yes Supports protocol for PROFINET IO Yes Protocols (Ethernet) • TCP/IP Yes Open IE communication • TCP/IP Yes Open IE communication • TCP/IP Yes UDP Yes • SOO-n-TCP (RFC1006) • UDP Yes • USO-on-TCP (RFC1006) • USP Web server • supported • User-defined websites Further protocols • MODBUS Yes Communication functions \$7 communication • supported • as server • as client • as client Number of connections • overall Test commissioning functions Status/control variable • Variables • Forcing Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters	Services	
Services - Shared device - Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO Yes PROFIBUS AS-Interface Yes Protocols (Ethernet) • TCP/IP • TCP/IP Open IE communication • TCP/IP ISO-on-TCP (RFC1006) • UDP Yes Web server • supported • Supported • User-defined websites Yes Protocols • MODBUS Yes Communication • Yes Number of connections • overall Test commissioning functions Status/Control • Status/Control variable • Yes Forcing • Forcing Yes	 Number of connectable IO Devices, max. 	16
- Shared device - Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP • TCP/IP • ISO-on-TCP (RFC1006) • UDP Yes Web server • supported • User-defined websites Puther protocols • MODBUS Yes Communication • Status/control • Forcing • Forcing Protocols Yes Yes 2 Yes Yes Yes Yes Yes	PROFINET IO Device	
Number of IO Controllers with shared device, max. Protocols Supports protocol for PROFINET IO Yes PROFIBUS Yes, CM 1243-5 required AS-Interface Yes Protocols (Ethernet) • TCP/IP Yes Open IE communication • TCP/IP Yes UDP Yes Ves Ves Ves Ves Ves Ves Ves	Services	
device, max. Protocols Supports protocol for PROFINET IO Yes PROFIBUS Yes, CM 1243-5 required AS-Interface Yes Protocols (Ethernet) • TCP/IP Yes Open IE communication • TCP/IP Yes • ISO-on-TCP (RFC1006) Yes • UDP Yes Web server • supported Yes • User-defined websites Yes Further protocols • MODBUS Yes Communication functions \$7 communication • supported Yes • as server Yes • as client Yes Number of connections • overall 16; dynamically Test commissioning functions Status/control • Status/control variable • Variables Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing Yes Diagnostic buffer • present Yes	— Shared device	Yes
Protocols Supports protocol for PROFINET IO PROFIBUS Yes; CM 1243-5 required AS-Interface Yes Protocols (Ethernet) • TCP/IP Yes Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Yes Web server • supported User-defined websites Further protocols • MODBUS Yes Communication • supported • as server • as client Yes Number of connections Status/control • Forcing • Forcing • Forcing • Forcing Present Yes Diagnostic buffer • present Yes	 Number of IO Controllers with shared 	2
Supports protocol for PROFINET IO PROFIBUS Yes; CM 1243-5 required AS-Interface Protocols (Ethernet) • TCP/IP Ves Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS Communication functions S7 communication • supported • as server • as elient Number of connections • overall Test commissioning functions Status/control • Status/control • Status/control • Status/control • Status/control • Status/control • Forcing • Forcing • Forcing • Forcing Diagnostic buffer • present Yes Yes Yes Yes Yes Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing • Forcing • Forcing Yes Diagnostic buffer • present Yes	device, max.	
PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites • MODBUS Communication • supported • as server • as client • as server • as client Number of connections Status/control • Forcing • Forcing • Forcing • Forcing Pess Ves Ves Ves Ves Ves Ves Ve	Protocols	
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Protocols (Ethernet) • TCP/IP • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Ves Web server • supported • User-defined websites Further protocols • MODBUS Communication functions S7 communication • supported • as server • as client Number of connections • overall Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Present Yes Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Present Yes Diagnostic buffer • present Yes	PROFIBUS	Yes; CM 1243-5 required
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Web server	• ISO-on-TCP (RFC1006)	Yes
Supported User-defined websites Yes Further protocols MODBUS Yes Communication functions S7 communication Syported Sy	• UDP	Yes
User-defined websites Further protocols MODBUS Yes Communication functions S7 communication S1 communication S2 communication S3 communication S4 communication S5 communication Yes As server As server As client Yes Number of connections Overall Test commissioning functions Status/control Status/control Yes Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters Forcing Forcing Forcing Yes Diagnostic buffer Opresent Yes	Web server	
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Number of connections	• as server	Yes
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Forcing • Forcing Oliagnostic buffer • present Yes Yes	 Status/control variable 	
 Forcing Diagnostic buffer ◆ present Yes 	Variables	
Diagnostic buffer • present Yes	Forcing	
• present Yes	• Forcing	Yes
·	Diagnostic buffer	
Traces	• present	Yes
	Traces	

• Number of configurable Traces

2; Up to 512 KB of data per trace are possible

Integrated Functions	
Number of counters	6
Counting frequency (counter) max.	100 kHz
Frequency measurement	Yes
controlled positioning	Yes
Number of position-controlled positioning axes, max.	8
Number of positioning axes via pulse-direction	Up to 4 with SB 1222
interface	
PID controller	Yes
Number of alarm inputs	4
D / C / C	

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 electric	city	
 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		
• on the 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	

Degree and class of protection	
Degree of protection acc. to EN 60529	
• IP20	Yes

with the limits for Class B according to EN 55011

Standards, approvals, certificates	
CE mark	Yes
Ambient conditions	
Free fall	
Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	
● min.	-20 °C; = Tmin; Startup @ 0 °C
• max.	60 °C; Number of simultaneously activated inputs or outputs 7 or 5 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 14 or 10 at 55 °C horizontal or 45 °C vertical
Ambient temperature during storage/transportation	
● min.	-40 °C
• max.	70 °C
Altitude during operation relating to sea level	
 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
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
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

— to mechanically 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); *

Yes; Class 6S3 incl. sand, dust; *

Remark

 Note regarding classification of environmental conditions acc. to EN 60721 * The supplied plug covers must remain in place over the unused interfaces during operation!

CHAIRCHITICHTAL COLLABOR 200. TO FLA 2017 1	mionacco daming operations
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.	585 g
last modified:	07/29/2018