Data sheet



SIPLUS S7-1200 CPU 1214C DC/DC/relay based on 6ES7214-1HG40-0XB0 with conformal coating, -20...+60 °C, compact CPU, DC/DC/relay, 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 100 KB

Figure similar

Product type designation CPU 1214C DC/DC/relay Firmware version V4.1 Engineering with • STEP 7 TIA Portal configurable/integrated from version see entry ID: 109746275 Supply voltage Rated value (DC) • 24 V DC Yes permissible range, upper limit (DC) 28.8 V Load voltage L+ • Rated value (DC) • permissible range, upper limit (DC) 28.8 V Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) 20.4 V • perm	General information	
Engineering with • STEP 7 TIA Portal configurable/integrated from version Supply voltage Rated value (DC) • 24 V DC permissible range, lower limit (DC) permissible range, upper limit (DC) 28.8 V Load voltage L+ • Rated value (DC) • permissible range, lower limit (DC) permissible range, lower limit (DC) permissible range, upper limit (DC) permissible range, lower limit (DC) permissible range, upper lim	Product type designation	CPU 1214C DC/DC/relay
• STEP 7 TIA Portal configurable/integrated from version Supply voltage Rated value (DC) • 24 V DC permissible range, lower limit (DC) • 28.8 V Load voltage L+ • Rated value (DC) • permissible range, upper limit (DC) • permissible range, upper	Firmware version	V4.1
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permissible range, upper limit (DC) Input current Current consumption (rated value) Current consumption, max. 1 500 mA; CPU only Current consumption, max. 1 500 mA; CPU with all expansion modules Inrush current, max. 1 2 A; at 28.8 V Output current for backplane bus (5 V DC), max. I 600 mA; Max. 5 V DC for SM and CM Encoder supply 24 V encoder supply 24 V encoder supply 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory integrated 100 kbyte Load memory integrated 4 Mbyte Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup present present present yes; maintenance-free without battery CPU processing times for bit operations, typ. 1.7 µs; / instruction for word operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction	 Rated value (DC) 	24 V
Input current Current consumption (rated value) Current consumption, max. 1 500 mA; CPU only Current consumption, max. 1 500 mA; CPU with all expansion modules Inrush 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 • 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated Load memory • integrated Plug-in (SIMATIC Memory Card), max. Backup • present • without battery CPU processing times for bit operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction	 permissible range, lower limit (DC) 	20.4 V
Current consumption (rated value) Current consumption, max. 1 500 mA; CPU with all expansion modules Inrush current, max. 1 2 A; at 28.8 V 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 • 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated Load memory • integrated 4 Mbyte • Plug-in (SIMATIC Memory Card), max. Backup • present • present • without battery CPU processing times for bit operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction	 permissible range, upper limit (DC) 	28.8 V
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Inrush current, max. Output current for backplane bus (5 V DC), max. Encoder supply 24 V encoder supply • 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • without battery For bit operations, typ. 0.085 µs; / instruction for word operations, typ. 12 A; at 28.8 V 1600 mA; Max. 5 V DC for SM and CM Hax. 5 V DC for SM and	Current consumption (rated value)	500 mA; CPU only
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 • 24 V L+ minus 4 V DC min. Power loss, typ. Power loss, typ. 12 W Memory • integrated 100 kbyte Load memory • integrated • Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup • present • present Yes; maintenance-free • without battery Yes CPU processing times for bit operations, typ. 0.085 μs; / instruction for floating point arithmetic, typ. 1.7 μs; / instruction for floating point arithmetic, typ. 2.3 μs; / instruction	Current consumption, max.	1 500 mA; CPU with all expansion modules
for backplane bus (5 V DC), max. 1 600 mA; Max. 5 V DC for SM and CM Encoder supply 24 V encoder supply 24 V	Inrush current, max.	12 A; at 28.8 V
Encoder supply 24 V encoder supply 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory integrated 100 kbyte 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. 2.3 µs; / instruction	Output current	
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• 24 V L+ minus 4 V DC min. Power loss Power loss, typ. 12 W Memory Work memory • integrated 100 kbyte 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. 2.3 µs; / instruction	Encoder supply	
Power loss Power loss, typ. Memory Work memory • integrated Load memory • integrated Plug-in (SIMATIC Memory Card), max. Backup • present • without battery CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ. 12 W Memory 10 W Memory 4 Mbyte 4 Mbyte 9 With SIMATIC memory card 4 With SIMATIC memory card 9 Wes; maintenance-free Yes CPU processing times 1.7 µs; / instruction 1.7 µs; / instruction 1.7 µs; / instruction	24 V encoder supply	
Power loss, typ. Memory Work memory integrated loo kbyte Load memory integrated Plug-in (SIMATIC Memory Card), max. Backup present present with SIMATIC memory card Yes; maintenance-free without battery CPU processing times for bit operations, typ. loo.085 \mus; / instruction for word operations, typ. 1.7 \mus; / instruction for floating point arithmetic, typ. 2.3 \mus; / instruction	• 24 V	L+ minus 4 V DC min.
Memory Work memory • integrated	Power loss	
Work memory ■ integrated 100 kbyte 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. 2.3 μs; / instruction	Power loss, typ.	12 W
integrated 100 kbyte 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. 2.3 μs; / instruction	Memory	
Load memory • integrated • Plug-in (SIMATIC Memory Card), max. Backup • present • without battery CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ. 4 Mbyte 9 With SIMATIC memory card Yes; maintenance-free Yes CPU processing times 1.7 µs; / instruction 1.7 µs; / instruction 2.3 µs; / instruction	Work memory	
 integrated Plug-in (SIMATIC Memory Card), max. with SIMATIC memory card Backup present without battery CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ. 2.3 µs; / instruction for sintegrated with SIMATIC memory card Yes CPU processing times for bit operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction 	• integrated	100 kbyte
 Plug-in (SIMATIC Memory Card), max. Backup present with out battery Yes; maintenance-free without battery Yes CPU processing times for bit operations, typ. 0.085 \mus; / instruction for word operations, typ. 1.7 \mus; / instruction for floating point arithmetic, typ. 2.3 \mus; / instruction 	Load memory	
Backup • present • without battery CPU processing times for bit operations, typ. for word operations, typ. for floating point arithmetic, typ. 2.3 μs; / instruction 1.7 μs; / instruction	• integrated	4 Mbyte
Present Present Without battery Yes CPU processing times for bit operations, typ. for word operations, typ. 1.7 μs; / instruction for floating point arithmetic, typ. 2.3 μs; / instruction	 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
without battery CPU processing times for bit operations, typ. for word operations, typ. 1.7 μs; / instruction for floating point arithmetic, typ. 2.3 μs; / instruction	Backup	
CPU processing times for bit operations, typ. 0.085 μs; / instruction for word operations, typ. 1.7 μs; / instruction for floating point arithmetic, typ. 2.3 μs; / instruction	• present	Yes; maintenance-free
for bit operations, typ. 0.085 µs; / instruction for word operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction	without battery	Yes
for word operations, typ. 1.7 µs; / instruction for floating point arithmetic, typ. 2.3 µs; / instruction	CPU processing times	
for floating point arithmetic, typ. 2.3 µs; / instruction	for bit operations, typ.	0.085 μs; / instruction
	for word operations, typ.	1.7 µs; / instruction
CPU-blocks CPU-blocks	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.	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 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
F	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	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
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
Cable length	
Cable length ● shielded, max.	500 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	2 TOOK OTHIS
• shielded, max.	100 m; twisted and shielded
Analog outputs	100 III, Wisted and Sincided
Number of analog outputs	0
Analog value generation for the inputs	
Integration and conversion time/resolution per channel	10 bit
Resolution with overrange (bit including sign), max.	Yes
Integration time, parameterizable Conversion time (per channel)	
Conversion time (per channel)	625 µs
Encoder Connectable encoders	
Connectable encoders	Von
2-wire sensor 4 Interfece	Yes
1. Interface	PROFINET
Interface type	PROFINET
Isolated	Yes
automatic detection of transmission rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Interface types	· ·
RJ 45 (Ethernet)	Yes
Protocols	
PROFINET IO Controller	Yes
PROFINET IO Device	Yes; Also simultaneously with IO-Device functionality
PROFINET IO Controller	
Transmission rate, max.	100 Mbit/s
Services	
— Number of connectable IO Devices, max.	16
PROFINET IO Device	
Services	· ·
— Shared device	Yes
Number of IO Controllers with shared device, max.	2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFISATE	No
PROFIBUS	Yes; CM 1243-5 required
AS-Interface	Yes
Protocols (Ethernet)	
	V
• TCP/IP	Yes
TCP/IP Open IE communication	
TCP/IP Open IE communication TCP/IP	Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006)	Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP	Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server	Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported	Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites	Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols	Yes Yes Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols MODBUS	Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols MODBUS communication functions / header	Yes Yes Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols MODBUS communication functions / header S7 communication	Yes Yes Yes Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols MODBUS communication functions / header	Yes Yes Yes Yes Yes Yes Yes
TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols MODBUS communication functions / header S7 communication supported as server	Yes Yes Yes Yes Yes Yes Yes Yes
 TCP/IP Open IE communication TCP/IP ISO-on-TCP (RFC1006) UDP Web server supported User-defined websites Further protocols MODBUS communication functions / header S7 communication supported 	Yes Yes Yes Yes Yes Yes Yes

• overall	16: dynamically
Overall Test commissioning functions	16; dynamically
Test commissioning functions	
Status/control	
Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Diagnostic buffer	
• present	Yes
Traces	
Number of configurable Traces	2; Up to 512 KB of data per trace are possible
Integrated Functions	
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	
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 electricity	
Interference immunity against discharge of static	Yes
electricity acc. to IEC 61000-4-2	
 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- 	Yes
4-4	
 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-	Yes
4-5	163
Interference immunity against conducted variable disturbance indu	ced by high-frequency fields
Interference immunity against high-frequency radiation	Yes
acc. to IEC 61000-4-6	
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 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.	-20 °C; = Tmin (incl. condensation/frost); start-up @ 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
At cold restart, min.	0 °C
At cold restart, min. Ambient temperature during storage/transportation	
	-40 °C
• min.	70 °C
Max. Altitude during operation relating to see level.	10 0
Altitude during operation relating to sea level	2,000 m
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; 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; *
Usage in industrial process technology	
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)
 Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 	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	
 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	
Coatings for printed circuit board assemblies acc. to EN 61086	Yes; Class 2 for high reliability
 Protection against fouling acc. to EN 60664-3 	Yes; Type 1 protection
 Military testing according to MIL-I-46058C, Amendment 7 	Yes; Discoloration of coating possible during service life
 Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC- CC-830A 	Yes; Conformal coating, Class A
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	110 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	435 g
last modified:	4/1/2022 🗗