SIEMENS

Data sheet



SIPLUS S7-1200 CPU 1214C DC/DC/DC based on 6ES7214-1AG40-0XB0 with conformal coating, -40...+60 °C, start up -25 °C, compact CPU, DC/DC/DC, onboard I/O: 14 DI 24 V DC; 10 DQ 24 V DC; 2 AI 0-10 V DC, power supply: DC 20.4-28.8 V DC, program/data memory 100 KB

General information	
Product type designation	CPU 1214C DC/DC/DC
based on	6ES7214-1AG40-0XB0
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, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Reverse polarity protection	Yes
Load voltage L+	
Rated value (DC)	24 V
 permissible range, lower limit (DC) 	20.4 V
 permissible range, upper limit (DC) 	28.8 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
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	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
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
ОВ	
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
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	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	Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz
Cable length	M IZ
shielded, max.	500 m; 50 m for technological functions
snielded, max. unshielded, max.	300 m; for technological functions: No
unsmeided, max. Digital outputs	500 III, IOI technological luffollofis. NO
	10
Number of digital outputs	10
of which high-speed outputs Limitation of industries shutdown voltage to	4; 100 kHz Pulse Train Output
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	0.5.4
with resistive load, max.	0.5 A
• on lamp load, max.	5 W
Output voltage	0.4 Vi with 40 kOhra land
• 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

***The first first of the pulse outputs, with resistive load, max. ***Other pulse outputs, with resistive load, max. ***Other of rolley outputs ***Unarber of rolley outputs ***Other outputs ***	- 11411 40 11011 12001	5 up
		ο μs
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		100 KHZ
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• Inhibition of Nax 150 m		0
Number of analog inputs		500 m
Anabog injusts Very Very Very Very Very Very Very Very		
Number of analog inputs • Votage • Votage • Votage Not ranges (rated values), votages • 10 to +10 V — Input resistance (0 to 10 V) Cable length • Input resistance (0 to 10 V) Cable length • Input resistance (0 to 10 V) Cable length • Input resistance (0 to 10 V) Cable length • Input resistance (0 to 10 V) Cable length • Individud, max Number of analog outputs • Resolution with overrange (oit including sign), max. • Integration and oncervation time-resolution per channel • Resolution with overrange (oit including sign), max. • Integration and oncervation time-resolution per channel • Resolution with overrange (oit including sign), max. • Integration and overrange (oit including sign), max. • Integration and time, parameterscable • Conversion time (per channel) • Resolution with overrange (oit including sign), max. • Integration and time, parameterscable (0 Conversion time (per channel) • Ves • Ves • Ves • Ves • Ves • PROFINET • PROFINET • PROFINET • PROFINET (0 Controller • Transmission rate, max. • PROFINET (0 Controller		150 M
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input ranges (rated values), voltages • to t+10 V Yes — Input resistance (0 to 10 V) 2 ±00k ohms Cable length • shielded, max. 100 m; twisted and shielded Analog outputs Number of analog outputs Number of analog outputs • Resolution with overange (bit including sign), max. • Integration and conversion timerresolution per channel • Resolution with overange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) • Conversion time (per channel) • Profession of transmission rate • 2-wire sensor Yes • 1.Interface Interface type Interface type • 2-wire sensor Yes 4.Latorogotistion 1.Interface Interface type • Resolution • Yes 4.Latorogotistion • Resolution • Yes • Ruf 45 (Ethernet) Profession • PROFINET IO Controller • PROFINET IO Controller • PROFINET IO Device • PROFINET IO Device • PROFINET IO Device • Services — Number of connectable IO Devices, max. • PROFINET IO Device • Number of Connectable IO Devices, max. • PROFINET IO Device • Number of Connectable IO Devices, max. • PROFINET IO Device • PROFINET IO Device • PROFINET IO Device • PROFINET IO Device • Services — Number of IO Controllers with shared device, max. • PROFINET IO Device • PROFINET IO Pevice • PROFINE		V
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shielded, max. Analog outputs Number of analog outputs **nesolution with overrange (bit including sign), max.** • Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max.** • Integration time, parameterizable Yes • Conversion time (per channel) • Costantial of the conversion time (per channel) • Costantial of the conversion time (per channel) • PROFINET (Solated Yes • 2 wire sensor Yes • 1.Interface type Interface type Interface type Autocrossing Yes Autocrossing Yes • R.1 45 (Ethernet) • PROFINET IO Controller • Transmission rate, max. • PROFINET IO Controller • Transmission rate, max. • To Number of connectable IO Devices, max. PROFINET IO Controller • Transmission rate, max. • Services — Shared device — Number of Connectable with shared device, max. PROFINET IO Period Services — Number of IO Controller Yes — Number of IO Controller Yes — Shared revice — Number of Connectable With shared device, max. PROFINET IO Device Services — Shared revice — Number of IO Controller Yes PROFINET IO Period Services — Shared revice — Number of Connectable With shared device, max. PROFINED PROFISED • Yes PROFINET IO Period • Yes PROFINET IO Period • Yes PROFINET IO Period • Transmission rate, max. 10 Mibit's • PROFINET IO Period • Transmission rate, max. 10 PROFISED • Yes • Shared device — Number of Connectable IO Period • Yes • Supports protocol for PROFINET IO • Yes PROFINET IO • Yes • Solon-TCP (RFC1006) • Yes • Supports protocol for PROFINET IO • Yes		≥100k onms
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		Yes
● ISO-on-TCP (RFC1006) ● UDP Yes Web server ● supported Yes		Var
◆ UDP Yes Web server ◆ supported Yes		
Web server ◆ supported Yes		
• supported Yes		Yes
		V
User-aerinea websites Yes		
	• User-defined websites	1 85

Further protocols	
MODBUS	Yes
communication functions / header	
S7 communication	
supported	Yes
as server	Yes
• as client	Yes
Number of connections	165
overall	16; dynamically
Test commissioning functions	10; dynamicany
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	inputorouputo, memory bito, bbb, distributed 1/00, timero, counters
• 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	4; With integrated DO
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
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
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- 4-4 	Yes
 Interference immunity on signal cables acc. to IEC 61000- 	Yes
4-4	165
Interference immunity against voltage surge	
• Interference immunity on supply lines acc. to IEC 61000-	Yes
4-5	
Interference immunity against conducted variable disturbance indu	
 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 A, for use in industrial areas Limit class B, for use in residential areas	Yes; When appropriate measures are used to ensure compliance with the limits
□ Littlit Class D, TOT USE IT TESTUETITIAL ATEAS	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
<u> </u>	

Ambient temperature during operation			
min.	-40 °C; = Tmin (incl. condensation/frost); start-up @ -25 °C		
max. At cold restart, min.	60 °C; = Tmax; Tmax > +55 °C number of simultaneously switched-on digital inputs 7, digital outputs 5, analog inputs 2 (no adjacent points) with horizontal mounting position -25 °C		
Ambient temperature during storage/transportation	25 0		
• 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 (Tma - 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 Observations	Yes		
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	dudion 11 mo		
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	V 01 000 11 15 1 1 1 1 1 1 1 1 1 1 1 1 1		
— 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); * Yes; Class 6S3 incl. sand, dust; *		
 to mechanically active substances according to EN 60721-3-6 	res, Class 033 iiidi. Saiiu, uusi,		
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		
onfiguration / header			
configuration / programming / header			
Programming language			
— LAD	Yes		
EDD	Yes		
— FBD	103		

 adjustable 	Yes	
Dimensions		
Width	110 mm	
Height Depth	100 mm	
Depth	75 mm	
Weights		
Weight, approx.	415 g	

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