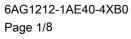
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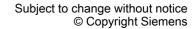
Data sheet

6AG1212-1AE40-4XB0

SIPLUS S7-1200 CPU 1212C DC/DC/DC for medial exposure with conformal coating based on 6ES7212-1AE40-0XB0 . compact CPU, DC/DC/DC, onboard I/O: 8 DI 24 V DC 6 DO 24 V DC 2 AI 0-10 V DC, Power supply: 20.4-28.8V DC Program/data memory 50 KB

General information		
Product type designation	CPU 1212C DC/DC/DC	
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)	400 mA; Typical	
Current consumption, max.	1 200 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.	1 000 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.	9 W	
Memory		
Work memory		
• integrated	75 kbyte	
• expandable	No	
Load memory		
• integrated	1 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),	10 kbyte
max.	
Flag	
Number, max.	4 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, 2 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	8; Integrated
 of which inputs usable for technological functions 	4; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	8
Input voltage	
• Rated value (DC)	24 V

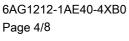


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• for signal "O"	5 V DC at 1 mA
• for signal "0"	15 V DC at 2.5 mA
• for signal "1"	15 V DC at 2.5 IIIA
Input delay (for rated value of input voltage)	
for standard inputs	0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms and 12.8 ms,
— parameterizable	selectable in groups of four
— at "0" to "1", min.	0.1 ms
— at "0" to "1", max.	20 ms
for interrupt inputs	
— parameterizable	Yes
for technological functions	
— parameterizable	Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 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	6
of which high-speed outputs	4; 100 kHz Pulse Train Output
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
• with resistive load, max.	0.5 A
● on lamp load, max.	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.	3 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	



Yes ≥100k ohms
≥100k ohms
100 m; twisted and shielded
0
10 bit
Yes
625 µs
Yes
PROFINET
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
Yes
100 Mbit/s
16
Yes
2





Ö PNAP

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
- MODBOO	. 65
Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
Number of connections	
• overall	16; dynamically
est 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
ntegrated Functions	
Number of counters	4
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 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 electric	city
Interference immunity against discharge of	Yes
static 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 61000-4-4 	Yes
Interference immunity against voltage surge	
 Interference immunity on supply lines acc. to IEC 61000-4-5 	Yes
Interference immunity against conducted variable distur	bance 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 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.horizontal installation, min.	60 °C; Number of simultaneously activated inputs or outputs 4 or 3 (no adjacent points) at 60 °C horizontal or 50 °C vertical, 8 or 6 at 55 °C horizontal or 45 °C vertical -20 °C
nonzona motaliation, min.	



 horizontal installation, max. 	60 °C
 vertical installation, min. 	-20 °C
vertical installation, max.	50 °C
 At cold restart, min. 	0 °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; *
Usage in industrial process technology	
 Against chemically active substances acc. to EN 60654-4 	Yes; Class 3 (excluding trichlorethylene)



- Environmental conditions for process, Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 measuring and control systems acc. to permissible); level LC3 (salt spray) and level LB3 (oil) ANSI/ISA-71.04 Remark * The supplied plug covers must remain in place over the unused - Note regarding classification of interfaces during operation! environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 Conformal coating Yes; Class 2 for high reliability Coatings for printed circuit board assemblies acc. to EN 61086 Yes; Type 1 protection • Protection against fouling acc. to EN 60664-3 Yes; Discoloration of coating possible during service life • Military testing according to MIL-I-46058C, Amendment 7 Yes; Conformal coating, Class A • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A Configuration Programming Programming language Yes — LAD Yes — FBD Yes - SCL Cycle time monitoring

Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm

Yes

Weights	
Weight, approx.	370 g

last modified: 10/13/2020



Subject to change without notice

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