

SIEMENS

Product data sheet

6AG1212-1BD30-2XB0



SIPLUS S7-1200 CPU 1212C AC/DC/RLY -25 ... +70 DEGREES C WITH CONFORMAL COATING BASED ON 6ES7212-1BD30-0XB0 . COMPACT CPU, AC/DC/RELAY, ONBOARD I/O: 8 DI 24V DC 6 DO RELAY 0.5A 2 AI 0 - 10V DC, POWER SUPPLY: AC 85 - 264 V AC @ 47 - 63 HZ, PROGRAM/DATA MEMORY: 25 KB

General information	
Engineering with	
Programming package	STEP 7 Basic V10.5
Display	
integrated	No
Supply voltage	
120 V AC	Yes
230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
Frequency of the supply voltage	47 Hz
Frequency of the supply voltage	63 Hz
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)	80 mA @ 120 VAC 40 mA @ 240 VAC
Current consumption, max.	240 mA @ 120 VAC 120 mA @ 240 VAC
Inrush current, max.	20 A ; at 264 V
Encoder supply	
24 V encoder supply	
24 V	Permissible range: 20.4 to 28.8 V
Output current	
Current output to backplane bus (DC 5 V), max.	1000 mA ; 5 VDC max. for SM and CM
Power losses	
Power loss, typ.	11 W
Memory	
Usable memory for user data	25 kbyte
Work memory	
integrated	25 kbyte
expandable	No
Load memory	
integrated	1 Mbyte
expandable, max.	24 Mbyte ; with SIEMENS Memory Card
Backup	
present	Yes ; Entire project maintenance-free in the integral EEPROM
without battery	Yes
CPU processing times	
for bit operations, min.	0.1 μ s ; / Operation
for word operations, min.	12 μ s ; / Operation
for floating point arithmetic, min.	18 μ s ; / Operation
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 in total (incl. times, counters, flags), max.	2048 byte
Flag	
Number, max.	4 kbyte ; Size of bit memory address area
Address area	
I/O address area	
I/O address area, overall	1024 bytes for inputs / 1024 bytes for outputs
Inputs	1024 byte
Outputs	1024 byte
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 com. modules, no signal board can be used, 2 signal modules
Time of day	
Clock	
Hardware clock (real-time clock)	Yes
Deviation per day, max.	+/- 60 s/month at 25 °C
Backup time	240 h ; Typical
Digital inputs	
Number/binary inputs	8 ; integrated
of which, inputs usable for technological functions	4 ; HSC (High Speed Counting)
integrated channels (DI)	8
m/p-reading	Yes
Input voltage	
Rated value, DC	24 V
for signal "0"	5 V DC at 1 mA.
for signal "1"	15 VDC 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, 0.4, 0.8, 1.6, 3.2, 6.4, 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 counter/technological functions	
Parameterizable	Single phase: 3 @ 100 kHz & 1 @ 30 kHz differential: 3 @ 80 kHz 1 @ 30 kHz
Cable length	
Cable length, shielded, max.	500 m ; 50 m for technological functions
Cable length unshielded, max.	300 m ; For technological functions: No
Digital outputs	
Number/binary outputs	6 ; Relay; > + 60 °C Number of simultaneously controllable inputs and outputs max. 50%
integrated channels (DO)	6
Functionality/short-circuit strength	No ; to be provided externally
Switching capacity of the outputs	
with resistive load, max.	2 A
on lamp load, max.	30 W DC; 200 W 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	6
Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100,000
Cable length	
Cable length, shielded, max.	500 m
Cable length unshielded, max.	150 m
Analog inputs	

Integrated channels (AI)	2
Number of analog inputs	2 ; ; > +60 °C Number of simultaneously controllable inputs and outputs max. 50%
Input ranges	
Voltage	Yes
Input ranges (rated values), voltages	
0 to +10 V	Yes
Input resistance (0 to 10 V)	≥100k ohms
Cable length	
Cable length, shielded, max.	100 m ; twisted and shielded
Analog outputs	
Integrated channels (AO)	0
Cable length	
Cable length, shielded, max.	100 m ; Shielded, twisted wire pair
Analog value creation	
Integrations 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
Encoder	
Connectable encoders	
2-wire sensor	Yes
1st interface	
Type of interface	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
Functionality	
PROFINET IO Controller	Yes
Communication functions	
S7 communication	

supported	Yes
as server	Yes
Open IE communication	
TCP/IP	Yes
ISO-on-TCP (RFC1006)	Yes
Web server	
supported	Yes
User-defined websites	Yes
Number of connections	
overall	15 ; dynamically
Test commissioning functions	
Status/control	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
Forcing	Yes
Integrated Functions	
Number of counters	4
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Galvanic isolation	
Galvanic isolation digital inputs	
Galvanic isolation digital inputs	No ; 500 V AC for 1 minute
between the channels, in groups of	1
Galvanic isolation digital outputs	
Galvanic isolation digital outputs	Yes ; Relay
between the channels	No
between the channels, in groups of	2
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	
on the supply lines acc. to IEC 61000-4-4	Yes
Interference immunity on signal lines acc. to IEC 61000-4-4	Yes
Surge immunity	
on the supply lines acc. to IEC 61000-4-5	Yes
Immunity against conducted interference 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	
Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes ; Group 1
Emission of radio interference acc. to EN 55 011 (limit class B)	Yes ; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
Degree and class of protection	
IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
UL approval	Yes
cULus	Yes
Ambient conditions	
Operating temperature	
vertical installation, min.	-25 °C ; = Tmin
vertical installation, max.	45 °C ; = Tmax
horizontal installation, min.	-25 °C ; = Tmin
horizontal installation, max.	70 °C ; = Tmax; > +60 °C Number of simultaneously controllable inputs and outputs max. 50%; no signal board can be used

Vibrations	
Vibrations	2G panel mount, 1G DIN rail mount
Operation, checked according to IEC 60068-2-6	Yes
Shock test	
checked according to IEC 60068-2-27	Yes ; 15 G, 11 ms pulse, 6 shocks in each of 3 axes
Extended ambient conditions	
Relative to ambient temperature-atmospheric pressure-installation altitude	Tmin ... Tmax at 1080 hPa ... 795 hPa (-1000 m ... +2000 m) // Tmin ... (Tmax - 10K) at 795 hPa ... 658 hPa (+2000 m ... +3500 m) // Tmin ... (Tmax - 20K) at 658 hPa ... 540 hPa (+3500 m ... +5000 m)
Relative humidity	
with condensation / maximum	100 % ; Relative humidity, incl. condensation / frost permitted (no commissioning under condensation conditions)
Resistance	
to biologically active substances / conformity with EN 60721-3-3	Yes ; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna). The supplied connector covers must remain on the unused interfaces during operation!
to chemically active substances / conformity with EN 60721-3-3	Yes ; Class 3C4 incl. salt spray according to EN 60068-2-52 (degree of severity 3). The supplied connector covers must remain on the unused interfaces during operation!
to mechanically active substances / conformity with EN 60721-3-3	Yes ; Class 3S4 incl. sand, dust. The supplied connector covers must remain on the unused interfaces during operation!
Climatic and mechanical conditions for storage and transport	
Climatic conditions for storage and transport	
Free fall	
Drop height, max. (in packaging)	0.3 m ; five times, in dispatch package
Temperature	
Permissible temperature range	-40 °C to +70 °C
Configuration	
programming	
Programming language	
LAD	Yes
FBD	Yes

SCL	Yes
Cycle time monitoring adjustable	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weight	
Weight, approx.	425 g
Status	Jul 17, 2012