SIEMENS

Data sheet

6ES7211-1BD30-0XB0



*** SPARE PART*** SIMATIC S7-1200, CPU 1211C, COMPACT CPU, AC/DC/RELAY, ONBOARD I/O: 6 DI 24V DC; 4 DO RELAY 2A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ, PROGRAM/DATA MEMORY: 25 KB

General information	
Product type designation	CPU 1211C AC/DC/Relay
Engineering with	
Programming package	STEP 7 V10.5 or higher
Supply voltage	
Rated value (AC)	
• 120 V AC	Yes
• 230 V AC	Yes
permissible range, lower limit (AC)	85 V
permissible range, upper limit (AC)	264 V
Line frequency	
• permissible range, lower limit	47 Hz
 permissible range, upper limit 	63 Hz
Input current	
Current consumption (rated value)	60 mA at 120 V AC; 30 mA at 240 V AC
Current consumption, max.	180 mA at 120 V AC; 90 mA at 240 V AC
Inrush current, max.	20 A; at 264 V

Output current	
for backplane bus (5 V DC), max.	750 mA; Max. 5 V DC for SM and CM
Francisco estable	
Encoder supply 24 V encoder supply	
• 24 V	Permissible range: 20.4V to 28.8V
- 27 V	Tomicolor range. 20.17 to 20.07
Power loss	
Power loss, typ.	10 W
Memory	
Work memory	
• integrated	25 kbyte
• expandable	No
Load memory	
• integrated	1 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	24 Mbyte; with SIMATIC memory card
Backup	
• present	Yes; Entire project maintenance-free in the integral EEPROM
without battery	Yes
CPU processing times	O.A. was I Occasión
for bit operations, typ.	0.1 μs; / Operation
for word operations, typ. for floating point arithmetic, typ.	12 µs; / Operation
for floating point antifficite, typ.	18 μs; / 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	restriction, the entire working memory can be used
	Limited only by RAM for code
Number, max.	Entitled Grilly By 10 tivi for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags),	2 048 byte
max.	
Flag	A khyto: Size of hit moment address area
Number, max.	4 kbyte; Size of bit memory address area
Address area	
I/O address area	
• Inputs	1 024 byte
Outputs	1 024 byte
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte

Hardware configuration	
Number of modules per system, max.	3 communication modules, 1 signal board
Time of day	
Clock	
Hardware clock (real-time)	Yes
Backup time	240 h; Typical
Deviation per day, max.	+/- 60 s/month at 25 °C
Digital inputs	
Number of digital inputs	6; Integrated
of which inputs usable for technological	3; HSC (High Speed Counting)
functions	o, o (g., opens outming)
Source/sink input	Yes
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	
— parameterizable	Yes
for counter/technological functions	
— parameterizable	Single phase : 3 at 100 kHz, differential: 3 at 80 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	4; Relays
Short-circuit protection	No; to be provided externally
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.
Parallel switching of two outputs	

Switching frequency • of the pulse outputs, with resistive load, max. Relay outputs • Number of relay outputs • Number of perating cycles, max. Cable length • shielded, max, • Or voltage of perating experiment • Voltage Input ranges (rated values), voltages • 10 to +10 V cable length • shielded, max. 100 m; twisted and shielded Analog outputs Cable length • shielded, max. 100 m; twisted and shielded Analog outputs Analog outputs Cable length • shielded, max. 100 m; twisted pair Analog outputs Analog outputs Cable length • shielded, max. 100 m; shielded, twisted pair Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) Encore Connectable encoders • 2-wire sensor Yes Interface Interface Interface type PROFINET Physics Ethermet Elhermet Sloated Autocrossing Functionality	for uprating	No
of the pulse outputs, with resistive load, max. Relay outputs Number of relay outputs Number of operating cycles, max. Number of operating cycles, max. So0 m shielded, max. So0 m shielded, max. Iso m Analog inputs For voltage/current measurement Input ranges voltage Input ranges Oto +10 V Input resistance (0 to 10 V) Cable length Shielded, max. Analog outputs Number of analog outputs Cable length Shielded, max. Ino m; twisted and shielded Analog outputs Number of analog outputs Cable length Shielded, max. Analog value generation for the inputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) Frocoder Connectable encoders Cancetable encoders Position Nersolution with overrange (bit including sign), max. Integration time, parameterizable Conversion time (per channel) Frocoder Connectable encoders Position Pes Autonegotiation Yes		
Relay outputs • Number of relay outputs • Number of operating cycles, max. • Number of operating cycles, max. • Soo m • shielded, max. • unshielded, max. • unshielded, max. • For voltage of provided of pro	of the pulse outputs, with resistive load, max.	1 Hz
Number of relay outputs Number of operating cycles, max. Number of operating cycles, max. a shelded, max. b shielded, twisted pair b shielded, max. b shielded, twisted pair b shielded, max.		
Number of operating cycles, max. So0 m shielded, max. unshielded, max. 150 m Analog inputs Number of analog inputs For voltage/current measurement voltage		4
Cable length • shielded, max. • unshielded, max. 150 m Analog inputs For voltage inputs • For voltage inputs • Voltage Yes Input ranges • Voltage Yes Input ranges (rated values), voltages • 10 to +10 V Yes Input resistance (0 to 10 V) Cable length • shielded, max. 100 m; twisted and shielded Analog outputs Number of analog outputs Cable length • shielded, max. 100 m; twisted and shielded Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) Encoder Connectable encoders • 2-wire sensor Yes 1. Interface Interface type PROFINET Physics Ethernet Isolated Yes Autorogoliation Yes Autorogoliation Yes Autorogoliation Yes Autorogoliation Yes Autorogoliation Yes Autorogoliation Yes		mechanically 10 million, at rated load voltage 100 000
• shielded, max. • unshielded, max. 150 m Analog inputs Number of analog inputs • For voltage/current measurement 10 tranges • Voltage 10 to +10 V Input ranges (rated values), voltages • 10 to +10 V Input resistance (0 to 10 V) Cable length • shielded, max. 100 m; twisted and shielded Analog outputs Number of analog outputs Cable length • shielded, max. 100 m; twisted pair Analog value generation for the inputs Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) • Cable encoder Connectable encoders • 2-wire sensor Yes 1. Interface Interface type PROFINET Physics Ethernet Isolated Autorogosting Yes Autorogosting Yes Autorogosting Yes		
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Number of analog inputs For voltage/current measurement Voltage Voltage Voltage Input ranges (rated values), voltages Voltage Yes Input ranges (rated values), voltages Voltage Yes Input resistance (0 to 10 V) 2100k ohms Cable length Shielded, max. 100 m; twisted and shielded Analog outputs Number of analog outputs 0 Cable length Shielded, max. 100 m; shielded, twisted pair Analog value generation for the inputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration time, parameterizable Yes Conversion time (per channel) 625 µs Encoder Connectable encoders 2-wire sensor Yes Integrace PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes		150 m
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Connectable encoders • 2-wire sensor Yes 1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Autonegotiation Yes Autocrossing Yes	 Conversion time (per channel) 	625 µs
Connectable encoders • 2-wire sensor Yes 1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Autonegotiation Yes Autocrossing Yes	Encoder	
1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes		
Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes	• 2-wire sensor	Yes
Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes	1. Interface	
Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes	Interface type	PROFINET
automatic detection of transmission rate Autonegotiation Autocrossing Yes Yes	Physics	Ethernet
Autonegotiation Yes Autocrossing Yes	Isolated	Yes
Autocrossing Yes	automatic detection of transmission rate	Yes
	Autonegotiation	Yes
Functionality	Autocrossing	Yes
	Functionality	

PROFINET IO Controller	Yes
Protocols	
Supports protocol for PROFINET IO	No
PROFIBUS	No
AS-Interface	No
Protocols (Ethernet)	
• TCP/IP	Yes
Further protocols	
• MODBUS	No
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	3
Counting frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Potential separation	
Potential separation digital inputs	No
Potential separation digital inputs	No
between the channels, in groups of	1
Potential separation digital outputs	V 2
 Potential separation digital outputs 	Yes; Relays

between the channels
between the channels, in groups of
1

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

• 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 with the limits for Class B according to EN 55011

Degree and class of protection

Degree of protection acc. to EN 60529

• IP20

Yes

Standards, approvals, certificates

CE mark	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes

Ambient conditions

Free fall

• Fall height, max. 0.3 m; five times, in product package

Ambient temperature during operation

min.
 max.
 55 °C

• horizontal installation, min. 0 °C

horizontal installation, max.
 vertical installation min
 0 °C

• vertical installation, min.

• vertical installation, may	45 °C
vertical installation, max. promissible temporature change.	5°C to 55°C, 3°C / minute
permissible temperature change Ambient temperature during storage/transportation	3 0 to 33 0, 3 07 minute
• min.	-40 °C
	70 °C
• max. Air pressure acc. to IEC 60068-2-13	70 0
• Operation, min.	795 hPa
Operation, max.	1 080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max. Storage/transport, max.	1 080 hPa
	-1000 to 2000 m
 permissible operating height Relative humidity 	-1000 to 2000 fil
• permissible range (without condensation) at 25	95 %
°C	55 //
Operation, max.	95 %; no condensation
Vibrations	
Vibrations	2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail
 Operation, tested according to IEC 60068-2-6 	Yes
Shock test	
• 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
Extended ambient conditions	
Pollutant concentrations	
— SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
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
Weights	
Weight, approx.	420 g