SIEMENS

Data sheet

6ES7211-1BE40-0XB0



SIMATIC S7-1200, CPU 1211C, compact CPU, AC/DC/relay, onboard I/O: 6 DI 24 V DC; 4 DO relay 2 A; 2 AI 0-10 V DC, power supply: AC 85-264 V AC at 47-63 Hz, program/data memory 75 KB

Figure similar

General information	
Product type designation	CPU 1211C AC/DC/relay
Firmware version	V4.6
Engineering with	
 Programming package 	STEP 7 V18 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
l²t	0.8 A ² ·s
Output current	
for backplane bus (5 V DC), max.	750 mA; Max. 5 V DC for CM
Encoder supply	
24 V encoder supply	
• 24 V	20.4 to 28.8V
Power loss	
Power loss, typ.	10 W
Memory	
Work memory	
integrated	75 kbyte
Load memory	
• integrated	1 Mbyte
 Plug-in (SIMATIC Memory Card), max. 	with SIMATIC memory card
Backup	
• present	Yes
 maintenance-free 	Yes
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.08 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
OB	
Number, max.	Limited only by RAM for code
Data areas and their retentivity	
Retentive data area (incl. timers, counters, flags), max.	14 kbyte
Flag	
Size, 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 communication modules, 1 signal board
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	100 3/1101tti at 23 G
	G: Integrated
Number of digital inputs	6; Integrated
of which inputs usable for technological functions Source/sink input	6; HSC (High Speed Counting)
Source/sink input	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	6
Input voltage	04.1/
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.	4 mA; nominal
Input delay (for rated value of input voltage)	
for standard inputs	
— parameterizable — at "0" to "1", min.	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 0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	12.0 1110
— parameterizable	Yes
for technological functions	100
— parameterizable	Single phase: 3 @ 100 kHz, differential: 3 @ 80 kHz
— parameterizable Cable length	omgic pridace. O & 100 ki iz, dilicicitida. O & 00 kiiz
• shielded, max.	500 m; 50 m for technological functions
unshielded, max. unshielded, max.	300 m; for technological functions: No
Digital outputs	555 III, for tearmoregious fullotions. No
Number of digital outputs	A: Relaye
Switching capacity of the outputs	4; Relays
with resistive load, max.	2 A
on lamp load, max. Output delay with resistive load.	30 W with DC, 200 W with AC
Output delay with resistive load	10 mg; mgy
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Relay outputs	,
Number of relay outputs	4
 Number of operating cycles, max. 	mechanically 10 million, at rated load voltage 100 000

Inhibited, max. Inhibited, max. Inhibited (max. I	Cabla la pada	
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	PROFINET IO Device	
— PG/OP communication Yes; encryption with TLS V1.3 pre-selected	Services	
	— PG/OP communication	Yes; encryption with TLS V1.3 pre-selected
— Isochronous mode No	— Isochronous mode	No

— IRT	No
— PROFlenergy	Yes
— Shared device	Yes
Number of IO Controllers with shared device, max.	2
Protocols	
Supports protocol for PROFINET IO	Yes
PROFIsafe	No
PROFIBUS	Yes; CM 1243-5 (master) or CM 1242-5 (slave) required
OPC UA	Yes; OPC UA Server
AS-Interface	Yes; CM 1243-2 required
Protocols (Ethernet)	
• TCP/IP	Yes
• DHCP	No
• SNMP	Yes
• DCP	Yes
• LLDP	Yes
Redundancy mode	
Media redundancy	
— MRP	No
— MRPD	No
SIMATIC communication	
• S7 routing	Yes
Open IE communication	
TCP/IP	Yes
— Data length, max.	8 kbyte
several passive connections per port, supported	Yes
• ISO-on-TCP (RFC1006)	Yes
— Data length, max.	8 kbyte
■ Data length, max. • UDP	Yes
— Data length, max.	1 472 byte
Web server	1 4/2 byte
• supported	Yes
User-defined websites	Yes
OPC UA	165
Runtime license required	Yes; "Basic" license required
OPC UA Server	Yes; data access (read, write, subscribe), method call, runtime license required
Application authentication	Available security policies: None, Basic128Rsa15, Basic256Rsa15,
— Application authentication	Basic256Sha256
— User authentication	"anonymous" or by user name & password
— Number of sessions, max.	10
 Number of subscriptions per session, max. 	5
— Sampling interval, min.	100 ms
— Publishing interval, min.	200 ms
Number of server methods, max.	20
Number of monitored items, recommended max.	1 000
Number of server interfaces, max.	2
Number of nodes for user-defined server interfaces.	2 000
max.	
Further protocols	
• MODBUS	Yes
communication functions / header	
S7 communication	
• supported	Yes
• as server	Yes
• as client	Yes
User data per job, max.	See online help (S7 communication, user data size)
Number of connections	
• overall	PG Connections: 4 reserved / 4 max; HMI Connections: 12 reserved / 18 max; S7 Connections: 8 reserved / 14 max; Open User Connections: 8 reserved / 14 max; Web Connections: 2 reserved / 30 max; OPC UA Connections: 0 reserved / 10 max; Total Connections: 34 reserved / 64 max
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
Memory size per trace, max.	512 kbyte
Interrupts/diagnostics/status information	
Diagnostics indication LED	
RUN/STOP LED	Yes
• ERROR LED	Yes
MAINT LED	Yes
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 	1
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
	Yes
4-4	Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000-	Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5	Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011	Yes liced by high-frequency fields Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas	Yes Iced by high-frequency fields Yes Yes; Group 1
Interference immunity against voltage surge Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbance indu Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas Limit class B, for use in residential areas	Yes liced by high-frequency fields Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection	Yes Iced by high-frequency fields Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection IP degree of protection	Yes Iced by high-frequency fields Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection	Yes Iced by high-frequency fields Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection IP degree of protection	Yes Iced by high-frequency fields Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection IP degree of protection Standards, approvals, certificates	Yes Iced by high-frequency fields Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 IP20
Interference immunity against voltage surge Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbance indu Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas Limit class B, for use in residential areas Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark	Yes Iced by high-frequency fields Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 IP20 Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark UL approval	Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 IP20 Yes Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark UL approval cULus	Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 IP20 Yes Yes Yes Yes
4-4 Interference immunity against voltage surge Interference immunity on supply lines acc. to IEC 61000-4-5 Interference immunity against conducted variable disturbance indu Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 Limit class A, for use in industrial areas Limit class B, for use in residential areas Limit class G protection IP degree of protection Standards, approvals, certificates CE mark UL approval cULus FM approval	Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 IP20 Yes Yes Yes Yes Yes Yes
4-4 Interference immunity against voltage surge • Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against conducted variable disturbance indu • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas Degree and class of protection IP degree of protection Standards, approvals, certificates CE mark UL approval cULus FM approval RCM (formerly C-TICK)	Yes Yes; Group 1 Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 IP20 Yes Yes Yes Yes Yes Yes Yes

Free fall	
Fall height, max.	0.3 m; five times, in product package
Ambient temperature during operation	or m, mo amos, m product pastage
• min.	-20 °C
• max.	60 °C
horizontal installation, min.	-20 °C
horizontal installation, max.	60 °C
vertical installation, min.	-20 °C
vertical installation, min. vertical installation, max.	50 °C
Ambient temperature during storage/transportation	30 C
min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	70 C
·	795 hPa
Operation, min.	1 080 hPa
Operation, max. Change transport min	
Storage/transport, min.	660 hPa
Storage/transport, max.	1 080 hPa
Altitude during operation relating to sea level	4 000
Installation altitude, min.	-1 000 m
Installation altitude, max.	5 000 m; Restrictions for installation altitudes > 2 000 m, see manual
Relative humidity	
Operation, max.	95 %; no condensation
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
Pollutant concentrations	
 SO2 at RH < 60% without condensation 	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
configuration / header	
configuration / programming / header	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Know-how protection	
User program protection/password protection	Yes
Copy protection	Yes
Block protection	Yes
Access protection	
protection of confidential configuration data	Yes
Protection level: Write protection	Yes
Protection level: Read/write protection	Yes
Protection level: Complete protection	Yes
programming / cycle time monitoring / header	
adjustable	Yes
Dimensions	
Width	90 mm
Height	100 mm
•	
Depth Weights	75 mm
	400 ~
Weight, approx.	420 g

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