



6ES7211-1HD30-0XB0 CPU 1211C, 6DI/4DO/2AI

Technical / CAx data

☒ Technical Data ☐ CAx data

**SIMATIC S7-1200, CPU 1211C, COMPACT CPU, DC/DC/RELAY, ONBOARD I/O: 6 DI 24V DC; 4 DO RELAY 2A; 2 AI 0 - 10V DC, POWER SUPPLY: AC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 25 KB**

**Product version**

associated programming package	STEP 7 Basic V10.5
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**Supply voltages****Rated value**

24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V

**Load voltage L+**

Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V

**Current consumption**

Current consumption (rated value)	300 mA; Typical
Current consumption, max.	0.9 A; 24 VDC
Inrush current, max.	12 A; 28.8 VDC
Current output to backplane bus (DC 5 V), max.	750 mA; 5 VDC max. for SM and CM

**Power losses**

Power loss, typ.	8 W
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**Memory**

Usable memory for user data	25 kbyte
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**Work memory**

integrated	25 kbyte
expandable	No

**Load memory**

integrated	1 Mbyte; Load memory expandable using SIEMENS Memory Card
expandable, max.	24 Mbyte; with SIEMENS Memory Card

**Backup**

present	Yes; entire project maintenance-free in the integral EEPROM
without battery	Yes

**CPU/ blocks****OB**

Number, max.	Limited only by RAM for code
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**CPU processing times**

for bit operations, min.	0.1 µs; / instruction
for word operations, min.	12 µs; / instruction
for floating point arithmetic, min.	18 µs; / instruction

**Data areas and their retentivity**

retentive data area in total (incl. times, counters,	2048 byte
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flags), max.

#### 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

##### Digital channels

**integrated channels (DI)** 6

**integrated channels (DO)** 4

##### Analog channels

**Integrated channels (AI)** 2

**Number of integrated channels (AO)** 0

#### Hardware configuration

**Number of modules per system, max.** 3 communication modules, 1 signal board

#### Time of day

##### Clock

**Hardware clock (real-time clock)** Yes

**Backup time** 240 h; Typical

**Deviation per day, max.** 60 s/month @ 25°C

#### Test commissioning functions

##### Status/control

**Status/control variable** Yes

**Variables** Inputs/outputs, memory bits, DB, distributed I/Os, timers, counters

##### Forcing

**Forcing** Yes

#### Communication functions

##### S7 communication

**supported** Yes

**as server** Yes

##### Open IE communication

**TCP/IP** Yes

**ISO-on-TCP (RFC1006)** Yes

##### Number of connections

**overall** 15; dynamically

#### 1st interface

**Type of interface** PROFINET

**Physics** Ethernet

**Isolated** Yes

**automatic detection of transmission speed** Yes

**Autonegotiation** Yes

**Autocrossing** Yes

#### CPU/ programming

##### Configuration software

<b>STEP 7</b>	STEP 7 Basic V10.5
<b>Programming language</b>	
<b>LAD</b>	Yes
<b>FBD</b>	Yes
<b>Cycle time monitoring can be set</b>	Yes
<b>Digital inputs</b>	
<b>Number of digital inputs</b>	6; Integrated
<b>of which, inputs usable for technological functions</b>	3; HSC (High Speed Counting)
<b>m/p-reading</b>	Yes
<b>Input voltage</b>	
<b>Rated value, DC</b>	24 V
<b>for signal "0"</b>	5 VDC at 1 mA
<b>for signal "1"</b>	15 VDC at 2.5 mA
<b>Input current</b>	
<b>for signal "1", typ.</b>	1 mA
<b>Input delay (for rated value of input voltage)</b>	
<b>for standard inputs parameterizable</b>	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in 4 groups
<b>at "0" to "1", min.</b>	0.2 ms
<b>at "0" to "1", max.</b>	12.8 ms
<b>for interrupt inputs parameterizable</b>	Yes
<b>for counter/technological functions parameterizable</b>	Single phase : 3 @ 100 kHz, differential: 3 @ 80 kHz
<b>Cable length</b>	
<b>Cable length, shielded, max.</b>	500 m; 50 m for technological functions
<b>Cable length unshielded, max.</b>	300 m; For technological functions: No
<b>Digital outputs</b>	
<b>Number of digital outputs</b>	4; Relay
<b>Short-circuit protection of the output</b>	No; to be provided externally
<b>Switching capacity of the outputs</b>	
<b>with resistive load, max.</b>	2 A
<b>on lamp load, max.</b>	30 W DC; 200 W AC
<b>Output delay with resistive load</b>	
<b>0 to "1", max.</b>	10 ms; max.
<b>1 to "0", max.</b>	10 ms; max.
<b>Parallel switching of 2 outputs for increased power</b>	No
<b>Switching frequency of the pulse outputs, with resistive load, max.</b>	1 Hz
<b>Cable length</b>	
<b>Cable length, shielded, max.</b>	500 m
<b>Cable length unshielded, max.</b>	150 m
<b>Relay outputs</b>	
<b>Number of relay outputs</b>	4
<b>Number of operating cycles</b>	mechanically 10 million, at rated load voltage 100,000
<b>Analog inputs</b>	

<b>Number of analog inputs</b>	2
<b>Number of analog inputs for voltage/current measurement</b>	2
<b>Cable length, shielded, max.</b>	100 m; twisted and shielded
<b>Input ranges</b>	
<b>Voltage</b>	Yes
<b>Input ranges (rated values), voltages</b>	
<b>0 to +10 V</b>	Yes
<b>Input resistance (0 to 10 V)</b>	≥100k ohms
<b>Analog outputs</b>	
<b>Cable length</b>	10 m; twisted
<b>Analog value creation</b>	
<b>Integrations and conversion time/ resolution per channel</b>	
<b>Resolution with overrange (bit including sign), max.</b>	10 bit
<b>Integration time, parameterizable</b>	Yes
<b>Conversion time (per channel)</b>	625 µs
<b>Encoder supply</b>	
<b>24 V encoder supply</b>	
<b>24 V</b>	permissible range: 20.4 to 28.8 V
<b>Encoder</b>	
<b>Connectable encoders</b>	
<b>2-wire BEROS</b>	Yes
<b>Integrated Functions</b>	
<b>Number of counters</b>	3
<b>Counter frequency (counter) max.</b>	100 kHz
<b>Frequency meter</b>	Yes
<b>controlled positioning</b>	Yes
<b>PID controller</b>	Yes
<b>Number of alarm inputs</b>	4
<b>Operator control and monitoring</b>	
<b>Display</b>	No
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
<b>Galvanic isolation digital inputs</b>	500 VAC for 1 minute
<b>between the channels, in groups of</b>	1
<b>Galvanic isolation digital outputs</b>	
<b>Galvanic isolation digital outputs</b>	Relays
<b>between the channels</b>	No
<b>between the channels, in groups of</b>	1
<b>Permissible potential difference</b>	
<b>between different circuits</b>	500 VDC between 24 VDC and 5 VDC
<b>EMC</b>	
<b>Interference immunity against discharge of static electricity</b>	
<b>Interference immunity against discharge of static electricity acc. to IEC 61000-4-2</b>	Yes
	8 kV

<b>Test voltage at contact discharge</b>	6 kV
<b>Interference immunity to cable-borne interference</b>	
<b>on the supply lines acc. to IEC 61000-4-4</b>	Yes
<b>Interference immunity on signal lines acc. to IEC 61000-4-4</b>	Yes
<b>Surge immunity</b>	
<b>on the supply lines acc. to IEC 61000-4-5</b>	Yes
<b>Immunity against conducted interference induced by high-frequency fields</b>	
<b>Interference immunity against high-frequency radiation acc. to IEC 61000-4-6</b>	Yes
<b>Emission of radio interference acc. to EN 55 011</b>	
<b>Emission of radio interferences acc. to EN 55 011 (limit class A)</b>	Yes; Group 1
<b>Emission of radio interference acc. to EN 55 011 (limit class B)</b>	Yes
<b>Climatic and mechanical conditions for storage and transport</b>	
<b>Climatic conditions for storage and transport</b>	
<b>Free fall</b>	0.3 m; five times, in dispatch package
<b>Temperature</b>	
<b>Permissible temperature range</b>	-40 °C to +70 °C
<b>Relative humidity</b>	
<b>Permissible range (without condensation) at 25 °C</b>	95%
<b>Mechanical and climatic conditions during operation</b>	
<b>Climatic conditions in operation</b>	
<b>Temperature</b>	
<b>Permissible temperature range</b>	0 °C to 55 °C horizontal mounting 0 °C to 45 °C vertical mounting 95% non-condensing humidity 5 °C to 55 °C, 3 °C/minute
<b>Air pressure acc. to IEC 60068-2-13</b>	
<b>Permissible air pressure</b>	1080 to 795 hPa
<b>Permissible operating height</b>	-1000m to 2000m
<b>Pollutant concentrations</b>	
	SO <sub>2</sub> : < 0.5 ppm; H <sub>2</sub> S: < 0.1 ppm; RH < 60% condensation-free
<b>Environmental requirements</b>	
<b>Operating temperature</b>	
<b>Min.</b>	0 °C
<b>max.</b>	55 °C
<b>vertical installation, min.</b>	0 °C
<b>vertical installation, max.</b>	45 °C
<b>horizontal installation, min.</b>	0 °C
<b>horizontal installation, max.</b>	55 °C
<b>Storage/transport temperature</b>	
<b>Min.</b>	-40 °C
<b>max.</b>	70 °C

<b>Air pressure</b>	
<b>Operation, min.</b>	795 hPa
<b>Operation, max.</b>	1080 hPa
<b>Storage/transport, min.</b>	660 hPa
<b>Storage/transport, max.</b>	1080 hPa
<b>Relative humidity</b>	
<b>Operation, max.</b>	95 %; no condensation
<b>Vibrations</b>	
<b>Vibrations</b>	2G wall mounting, 1G DIN rail
<b>Operation, checked according to IEC 60068-2-6</b>	Yes
<b>Shock test</b>	
<b>checked according to IEC 60068-2-27</b>	Yes; IEC 68, Part 2-27 half-sine: Strength of the shock 15 g (peak value), duration 11 ms
<b>Degree of protection</b>	
<b>IP20</b>	Yes
<b>Standards, approvals, certificates</b>	
<b>CE mark</b>	Yes
<b>C-TICK</b>	Yes
<b>cULus</b>	Yes
<b>FM approval</b>	Yes
<b>Dimensions and weight</b>	
<b>Dimensions</b>	
<b>Width</b>	90 mm
<b>Height</b>	100 mm
<b>Depth</b>	75 mm
<b>Weight</b>	
<b>Weight, approx.</b>	380 g
<b>Status</b>	Jun 14, 2010