



SIMATIC S7-1200, CPU 1211C, COMPACT CPU, DC/DC/DC,  
ONBOARD I/O: 6 DI 24V DC; 4 DO 24 V DC; 2 AI 0 - 10V DC,  
POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA  
MEMORY: 30 KB

Display	
with display	No
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
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)	300 mA; Typical
Inrush current, max.	12 A; at 28.8 V DC
Encoder supply	
24 V encoder supply	
• 24 V	Permissible range: 20.4V to 28.8V
Output current	
Current output to backplane bus (DC 5 V), max.	750 mA; Max. 5 V DC for SM and CM
Power losses	
Power loss, typ.	8 W
Memory	
Type of memory	EEPROM

Usable memory for user data	30 kbyte
Work memory	
• Integrated	50 kbyte
• expandable	No
Load memory	
• Integrated	1 Mbyte
• Plug-in (SIMATIC Memory Card), max.	2 Gbyte; with SIMATIC memory card
Backup	
• present	Yes; maintenance-free
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.085 µs; / Operation
for word operations, typ.	1.7 µs; / Operation
for floating point arithmetic, typ.	2.3 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	
• Number, max.	Limited only by RAM for code
Data areas and their retentivity	
retentive data area in total (incl. times, counters, flags), max.	10 kbyte
Flag	
• 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 clock)	Yes
• Deviation per day, max.	+/- 60 s/month at 25 °C
• Backup time	480 h; Typical
Digital inputs	

Number of digital inputs	6; Integrated
• of which, inputs usable for technological functions	6; HSC (High Speed Counting)
integrated channels (DI)	6
m/p-reading	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	6
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	0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 µs; 0.05 / 0.1 / 0.2 / 0.4 / 0.8 / 1.6 / 3.2 / 6.4 / 10.0 / 12.8 / 20.0 ms
— at "0" to "1", min.	0.1 µs
— at "0" to "1", max.	20 ms
for interrupt inputs	
— Parameterizable	Yes
for counter/technological functions	
— Parameterizable	Single phase : 3 @ 100 kHz, differential: 3 @ 80 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 of digital outputs	4
• of which high-speed outputs	4; 100 kHz Pulse Train Output
integrated channels (DO)	4
short-circuit protection	No; to be provided externally
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 $\mu$ s
• "1" to "0", max.	3 $\mu$ s
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Relay outputs	
• Max. number of relay outputs, integrated	0
Cable length	
• Cable length, shielded, max.	500 m
• Cable length unshielded, max.	150 m
Analog inputs	
Number of analog inputs	2
Integrated channels (AI)	2; 0 to 10 V
Input ranges	
• Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	$\geq 100$ k ohms
Cable length	
• Cable length, shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	0
Analog value creation	
Integration and conversion time/resolution per channel	
• Resolution with overrange (bit including sign), max.	10 bit
• Integration time, parameterizable	Yes
• Conversion time (per channel)	625 $\mu$ s
Encoder	
Connectable encoders	
• 2-wire sensor	Yes
1. Interface	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
Functionality	
• PROFINET IO Device	Yes

• PROFINET IO Controller	Yes
PROFINET IO Controller	
• Prioritized startup supported	
— Number of IO Devices, max.	16
Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
• As client	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
• UDP	Yes
Web server	
• supported	Yes
• User-defined websites	Yes
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; Up to 512 KB of data per trace are possible
Integrated Functions	
Number of counters	6
Counter frequency (counter) max.	100 kHz
Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
Galvanic isolation	
Galvanic isolation digital inputs	
• Galvanic isolation digital inputs	500V AC for 1 minute
• between the channels, in groups of	1
Galvanic isolation digital outputs	

- Galvanic isolation digital outputs
- between the channels, in groups of

500V AC for 1 minute

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## 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
  - 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 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

- 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 to EN 60529

- IP20 Yes

## Standards, approvals, certificates

CE mark Yes

UL approval Yes

cULus Yes

RCM (formerly C-TICK) Yes

FM approval Yes

### Marine approval

- Marine approval Yes

## Ambient conditions

### Free fall

- Drop height, max. (in packaging) 0.3 m; five times, in dispatch package

### Ambient temperature in operation

- during operating phase, minimum -20 °C
- max. 60 °C

• horizontal installation, min.	-20 °C
• horizontal installation, max.	60 °C
• vertical installation, min.	-20 °C
• vertical installation, max.	50 °C
<b>Storage/transport temperature</b>	
• Min.	-40 °C
• max.	70 °C
<b>Air pressure</b>	
• Operation, min.	795 hPa
• Operation, max.	1 080 hPa
• Storage/transport, min.	660 hPa
• Storage/transport, max.	1 080 hPa
• Permissible operating height	-1000 to 2000 m
<b>Relative humidity</b>	
• Operation, max.	95 %; no condensation
• Permissible range (without condensation) at 25 °C	95 %
<b>Vibrations</b>	
• Vibrations	2G wall mounting, 1G DIN rail
• Operation, checked according to IEC 60068-2-6	Yes
<b>Shock test</b>	
• checked 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
<b>Pollutant concentrations</b>	
— SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
<b>programming</b>	
<b>Programming language</b>	
— LAD	Yes
— FBD	Yes
— SCL	Yes
<b>Cycle time monitoring</b>	
• can be set	Yes
<b>Dimensions</b>	
Width	90 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	370 g
<b>last modified:</b>	05.02.2015