



SIMATIC S7-1200, CPU 1212C, COMPACT CPU, AC/DC/RLY,
ONBOARD I/O: 8 DI 24V DC; 6 DO RELAY 2A; 2 AI 0 - 10V DC,
POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ,
PROGRAM/DATA MEMORY: 50 KB

Display	
with display	No
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 frequency range, lower limit	47 Hz
• permissible frequency range, upper limit	63 Hz
Input current	
Current consumption (rated value)	80 mA at 120 V AC; 40 mA at 240 V AC
Inrush current, max.	20 A; at 264 V
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.	1 000 mA; Max. 5 V DC for SM and CM
Power losses	
Power loss, typ.	11 W
Memory	
Type of memory	EEPROM

Usable memory for user data	75 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 comm. modules, 1 signal board, 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	480 h; Typical
Digital inputs	

Number of digital inputs	8; Integrated
<ul style="list-style-type: none"> • of which, inputs usable for technological functions 	6; HSC (High Speed Counting)
integrated channels (DI)	8
m/p-reading	Yes
Number of simultaneously controllable inputs	
all mounting positions	
— up to 40 °C, max.	8
Input voltage	
<ul style="list-style-type: none"> • Rated value (DC) 	24 V
<ul style="list-style-type: none"> • for signal "0" 	5 V DC at 1 mA
<ul style="list-style-type: none"> • for signal "1" 	15 VDC at 2.5 mA
Input current	
<ul style="list-style-type: none"> • 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	Yes; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 30 kHz
Cable length	
<ul style="list-style-type: none"> • Cable length, shielded, max. 	500 m; 50 m for technological functions
<ul style="list-style-type: none"> • Cable length unshielded, max. 	300 m; For technological functions: No
Digital outputs	
Number of digital outputs	6; Relays
integrated channels (DO)	6
short-circuit protection	No; to be provided externally
Switching capacity of the outputs	
<ul style="list-style-type: none"> • with resistive load, max. 	2 A
<ul style="list-style-type: none"> • on lamp load, max. 	30 W with DC, 200 W with AC
Output delay with resistive load	
<ul style="list-style-type: none"> • "0" to "1", max. 	10 ms; max.
<ul style="list-style-type: none"> • "1" to "0", max. 	10 ms; max.
Switching frequency	
<ul style="list-style-type: none"> • of the pulse outputs, with resistive load, max. 	1 Hz
Relay outputs	
<ul style="list-style-type: none"> • Max. number of relay outputs, integrated 	6

• 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

Number of analog inputs	2
Integrated channels (AI)	2; 0 to 10 V

Input ranges

• Voltage	Yes
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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
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Analog outputs

Number of analog outputs	0
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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 μs

Encoder

Connectable encoders

• 2-wire sensor	Yes
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1. Interface

Interface type	PROFINET
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Physics	Ethernet
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Isolated	Yes
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Automatic detection of transmission speed	Yes
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Autonegotiation	Yes
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Autocrossing	Yes
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Functionality

• PROFINET IO Device	Yes
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• PROFINET IO Controller	Yes
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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	4
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
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	Relays
• between the channels	No
• 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 lines acc. to IEC 61000-4-4 | Yes |

Surge immunity

- | | |
|---|-----|
| • on the supply lines acc. to IEC 61000-4-5 | Yes |
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Immunity against conducted interference induced by high-frequency fields

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| • Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 | Yes |
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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

- | | |
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| • IP20 | Yes |
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Standards, approvals, certificates

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

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|-------------------|-----|
| • Marine approval | Yes |
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Ambient conditions

Free fall

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| • Drop height, max. (in packaging) | 0.3 m; five times, in dispatch package |
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Ambient temperature in operation

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|-----------------------------------|--------|
| • 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 |

Storage/transport temperature

• Min.	-40 °C
• max.	70 °C
Air pressure	
• 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
Relative humidity	
• Operation, max.	95 %; no condensation
• Permissible range (without condensation) at 25 °C	95 %
Vibrations	
• Vibrations	2G wall mounting, 1G DIN rail
• Operation, checked according to IEC 60068-2-6	Yes
Shock test	
• 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
Pollutant concentrations	
— SO ₂ at RH < 60% without condensation	SO ₂ : < 0.5 ppm; H ₂ S: < 0.1 ppm; RH < 60% condensation-free
programming	
Programming language	
— LAD	Yes
— FBD	Yes
— SCL	Yes
Cycle time monitoring	
• can be set	Yes
Dimensions	
Width	90 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	425 g
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