



SIMATIC S7-1200, CPU 1212C, COMPACT CPU, DC/DC/RLY,  
ONBOARD I/O: 8 DI 24V DC; 6 DO RELAY 2A; 2 AI 0 - 10V DC,  
POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA  
MEMORY: 50 KB

Display	
with display	No
Supply voltage	
Rated value (DC)	Yes
<ul style="list-style-type: none"> <li>• 24 V DC</li> </ul>	
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
Load voltage L+	
<ul style="list-style-type: none"> <li>• Rated value (DC)</li> </ul>	24 V
<ul style="list-style-type: none"> <li>• permissible range, lower limit (DC)</li> </ul>	20.4 V
<ul style="list-style-type: none"> <li>• permissible range, upper limit (DC)</li> </ul>	28.8 V
Input current	
Current consumption (rated value)	400 mA; Typical
Inrush current, max.	12 A; at 28.8 V
Encoder supply	
24 V encoder supply	
<ul style="list-style-type: none"> <li>• 24 V</li> </ul>	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.	9 W
Memory	
Type of memory	EEPROM

Usable memory for user data	75 kbyte
<b>Work memory</b>	
• Integrated	50 kbyte
• expandable	No
<b>Load memory</b>	
• Integrated	1 Mbyte
• Plug-in (SIMATIC Memory Card), max.	2 Gbyte; with SIMATIC memory card
<b>Backup</b>	
• present	Yes; maintenance-free
• without battery	Yes
<b>CPU processing times</b>	
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
<b>CPU-blocks</b>	
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
<b>OB</b>	
• Number, max.	Limited only by RAM for code
<b>Data areas and their retentivity</b>	
retentive data area in total (incl. times, counters, flags), max.	10 kbyte
<b>Flag</b>	
• Number, max.	4 kbyte; Size of bit memory address area
<b>Address area</b>	
<b>I/O address area</b>	
• Inputs	1 024 byte
• Outputs	1 024 byte
<b>Process image</b>	
• Inputs, adjustable	1 kbyte
• Outputs, adjustable	1 kbyte
<b>Hardware configuration</b>	
Number of modules per system, max.	3 comm. modules, 1 signal board, 2 signal modules
<b>Time of day</b>	
<b>Clock</b>	
• Hardware clock (real-time clock)	Yes
• Deviation per day, max.	+/- 60 s/month at 25 °C
• Backup time	480 h; Typical
<b>Digital inputs</b>	

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

• Number of relay outputs	6
• Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100,000
<b>Cable length</b>	
• 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)	≥100k 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 μs

### 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
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
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
<b>Interference immunity to cable-borne interference</b>	
• Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
• Interference immunity on signal lines acc. to IEC 61000-4-4	Yes
<b>Surge immunity</b>	
• on the supply lines acc. to IEC 61000-4-5	Yes
<b>Immunity against conducted interference induced by high-frequency fields</b>	
• Interference immunity against high-frequency radiation acc. to IEC 61000-4-6	Yes
<b>Emission of radio interference acc. to EN 55 011</b>	
• 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
<b>Degree and class of protection</b>	
Degree of protection to EN 60529	
• IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
UL approval	Yes
cULus	Yes
RCM (formerly C-TICK)	Yes
FM approval	Yes
<b>Marine approval</b>	
• Marine approval	Yes
<b>Ambient conditions</b>	
Free fall	
• Drop height, max. (in packaging)	0.3 m; five times, in dispatch package
<b>Ambient temperature in operation</b>	
• 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

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	
— SO2 at RH < 60% without condensation	SO2: < 0.5 ppm; H2S: < 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.	385 g
<b>last modified:</b>	05.02.2015