



\*\*\* SPARE PART\*\*\* SIMATIC S7-1200, CPU 1214C, COMPACT CPU, DC/DC/DC, ONBOARD I/O: 14 DI 24V DC; 10 DO 24 V DC; 2 AI 0 - 10V DC, POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 50 KB

### General information

#### Engineering with

- Programming package STEP 7 V10.5 or higher

### 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, max. 1.5 A; 24 V DC
- 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

- for backplane bus (5 V DC), max. 1 600 mA; Max. 5 V DC for SM and CM

Power losses	
Power loss, typ.	12 W
Memory	
Type of memory	other
Work memory	
• Integrated	50 kbyte
• expandable	No
Load memory	
• Integrated	2 Mbyte
• Plug-in (SIMATIC Memory Card), max.	24 Mbyte; with SIMATIC memory card
Backup	
• present	Yes; Entire project maintenance-free in the integral EEPROM
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.1 µs; / Operation
for word operations, typ.	12 µs; / Operation
for floating point arithmetic, typ.	18 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.	2 048 byte
Flag	
• Number, max.	8 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, 8 signal modules
Time of day	
Clock	
• Hardware clock (real-time clock)	Yes

- Deviation per day, max. +/- 60 s/month at 25 °C
- Backup time 240 h; Typical

### Digital inputs

Number of digital inputs	14; 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)	14
m/p-reading	Yes
<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	0.2 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
— at "0" to "1", min.	0.2 ms
— at "0" to "1", max.	12.8 ms
for interrupt inputs	
— Parameterizable	Yes
for counter/technological functions	
— Parameterizable	Single phase: 3 at 100 kHz & 1 at 30 kHz, differential: 3 at 80 kHz & 1 at 30 kHz
<b>Cable length</b>	
<ul style="list-style-type: none"> <li>• shielded, max.</li> </ul>	500 m; 50 m for technological functions
<ul style="list-style-type: none"> <li>• Unshielded, max.</li> </ul>	300 m; For technological functions: No

### Digital outputs

Number of digital outputs	10
<ul style="list-style-type: none"> <li>• of which high-speed outputs</li> </ul>	2; 100 kHz Pulse Train Output
integrated channels (DO)	10
short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
<b>Switching capacity of the outputs</b>	
<ul style="list-style-type: none"> <li>• with resistive load, max.</li> </ul>	0.5 A
<ul style="list-style-type: none"> <li>• on lamp load, max.</li> </ul>	5 W
<b>Output voltage</b>	
<ul style="list-style-type: none"> <li>• for signal "1", min.</li> </ul>	20 V
<b>Output current</b>	
<ul style="list-style-type: none"> <li>• for signal "1" rated value</li> </ul>	0.5 A
<ul style="list-style-type: none"> <li>• for signal "0" residual current, max.</li> </ul>	0.1 mA

<b>Output delay with resistive load</b>	
• "0" to "1", max.	1 µs
• "1" to "0", max.	5 µs
<b>Switching frequency</b>	
• of the pulse outputs, with resistive load, max.	100 kHz
<b>Relay outputs</b>	
• Number of relay outputs, integrated	10
<b>Cable length</b>	
• shielded, max.	500 m
• Unshielded, max.	150 m
<b>Analog inputs</b>	
Number of analog inputs	2
Integrated channels (AI)	2; 0 to 10V
<b>Input ranges</b>	
• Voltage	Yes
<b>Input ranges (rated values), voltages</b>	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	≥100k ohms
<b>Cable length</b>	
• shielded, max.	100 m; twisted and shielded
<b>Cable length</b>	
• shielded, max.	100 m; shielded, twisted pair
<b>Analog value creation</b>	
<b>Integration and conversion time/resolution per channel</b>	
• Resolution with overrange (bit including sign), max.	10 bit
• Integration time, parameterizable	Yes
• Conversion time (per channel)	625 µs
<b>Encoder</b>	
<b>Connectable encoders</b>	
• 2-wire sensor	Yes
<b>1st interface</b>	
Interface type	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
<b>Functionality</b>	
• PROFINET IO Controller	Yes

Communication functions	
S7 communication	
• supported	Yes
• as server	Yes
Open IE communication	
• TCP/IP	Yes
• ISO-on-TCP (RFC1006)	Yes
Web server	
• supported	Yes
• User-defined websites	Yes
Number of connections	
• overall	15; dynamically
Test commissioning functions	
Status/control	
• Status/control variable	Yes
• Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
Forcing	
• Forcing	Yes
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	2
Limit frequency (pulse)	100 kHz
Potential separation	
Galvanic isolation digital inputs	
• Potential separation digital inputs	No
• between the channels, in groups of	1
Potential separation digital outputs	
• Potential separation digital outputs	Yes
• between the channels	No
• between the channels, in groups of	2
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
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	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>	
• Permissible temperature range	0 °C to 55 °C horizontal installation, 0 °C to 45 °C vertical installation
• Min.	0 °C
• max.	55 °C
• horizontal installation, min.	0 °C
• horizontal installation, max.	55 °C
• vertical installation, min.	0 °C
• vertical installation, max.	45 °C
• Permissible temperature change	5°C to 55°C, 3°C / minute
<b>Ambient temperature during storage/transportation</b>	
• Min.	-40 °C
• max.	70 °C

<b>Air pressure acc. to IEC 60068-2-13</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	110 mm
Height	100 mm
Depth	75 mm
<b>Weights</b>	
Weight, approx.	415 g
<b>last modified:</b>	16.04.2015