



*** SPARE PART*** SIMATIC S7-1200, CPU 1212C, COMPACT CPU, DC/DC/DC, ONBOARD I/O: 8 DI 24V DC; 6 DO 24 V DC; 2 AI 0 - 10V DC, POWER SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY: 25 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. 1.2 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. 1 000 mA; Max. 5 V DC for SM and CM

Power loss	
Power loss, typ.	9 W
Memory	
Type of memory	other
Work memory	
• Integrated	25 kbyte
• expandable	No
Load memory	
• Integrated	1 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.	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 240 h; Typical

Digital inputs

Number of digital inputs	8; Integrated
<ul style="list-style-type: none"> • of which inputs usable for technological functions 	4; HSC (High Speed Counting)
integrated channels (DI)	8
m/p-reading	Yes
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	0.2 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
Cable length	
<ul style="list-style-type: none"> • shielded, max. 	500 m; 50 m for technological functions
<ul style="list-style-type: none"> • unshielded, max. 	300 m; For technological functions: No

Digital outputs

Number of digital outputs	6
<ul style="list-style-type: none"> • of which high-speed outputs 	2; 100 kHz Pulse Train Output
integrated channels (DO)	6
short-circuit protection	No; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
Switching capacity of the outputs	
<ul style="list-style-type: none"> • with resistive load, max. 	0.5 A
<ul style="list-style-type: none"> • on lamp load, max. 	5 W
Output voltage	
<ul style="list-style-type: none"> • for signal "0", max. 	0.1 V; with 10 kOhm load
<ul style="list-style-type: none"> • for signal "1", min. 	20 V
Output current	
<ul style="list-style-type: none"> • 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 µs
• "1" to "0", max.	5 µs
Switching frequency	
• of the pulse outputs, with resistive load, max.	100 kHz
Relay outputs	
• Number of relay outputs, integrated	0
Cable length	
• shielded, max.	500 m
• unshielded, max.	150 m

Analog inputs	
Number of analog inputs	2
integrated channels (AI)	2; 0 to 10V
Input ranges	
• Voltage	Yes
Input ranges (rated values), voltages	
• 0 to +10 V	Yes
• Input resistance (0 to 10 V)	≥100k ohms
Cable length	
• shielded, max.	100 m; twisted and shielded
Cable length	
• shielded, max.	100 m; shielded, twisted pair

Analog value generation	
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 rate	Yes
Autonegotiation	Yes
Autocrossing	Yes
Functionality	
• 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	4
Counting 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	
Potential separation 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
Interference immunity to cable-borne interference	
• Interference immunity on supply lines acc. to IEC 61000-4-4	Yes
• Interference immunity on signal cables acc. to IEC 61000-4-4	Yes
Interference immunity against voltage surge	
• on the supply lines acc. to IEC 61000-4-5	Yes
Interference immunity against conducted variable disturbance 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 acc. to EN 60529	
• IP20	Yes
Standards, approvals, certificates	
CE mark	Yes
cULus	Yes
FM approval	Yes
RCM (formerly C-TICK)	Yes
Ambient conditions	
Free fall	
• Drop height, max. (in packaging)	0.3 m; five times, in dispatch package
Ambient temperature during operation	
• 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
Ambient temperature during storage/transportation	
• min.	-40 °C
• max.	70 °C
Air pressure acc. to IEC 60068-2-13	

• 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, tested according to IEC 60068-2-6	Yes
Shock test	
• tested 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.	370 g
last modified:	29.05.2015