



SIMATIC S7-1200F, CPU 1215 FC, COMPACT CPU,
DC/DC/RELAY, 2 PROFINET PORT, ONBOARD I/O: 14 DI 24V DC;
10 DO RELAY 2A, 2 AI 0-10V DC, 2 AO 0-20MA DC, POWER
SUPPLY: DC 20.4 - 28.8 V DC, PROGRAM/DATA MEMORY 150 KB

General information

Engineering with

- Programming package STEP 7 V13 SP1 or higher

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. 1 500 mA; max. with all expansion accessories

Inrush current, max. 12 A; at 28.8 V DC

Encoder supply

24 V encoder supply

- 24 V L+ minus 4 V DC min.

Power losses

Power loss, typ. 12 W

Memory

Work memory

- Integrated 150 kbyte

Load memory	
• Integrated	4 Mbyte
• Plug-in (SIMATIC Memory Card), max.	with SIMATIC memory card
Backup	
• present	Yes; maintenance-free
• without battery	Yes
CPU processing times	
for bit operations, typ.	0.08 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)	1 024; 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
Address area	
I/O address area	
• Inputs	1 024 byte
• Outputs	1 024 byte
Process image	
• Inputs, adjustable	1 024 kbyte
• Outputs, adjustable	1 024 kbyte
Hardware configuration	
Number of modules per system, max.	8; 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 per month
• Backup time	480 h; typical; 12 days min. at 40 °C
Digital inputs	
Number of digital inputs	14
• of which, inputs usable for technological functions	6; HSC (High Speed Counting)
integrated channels (DI)	14
m/p-reading	Yes
Number of simultaneously controllable inputs	

all mounting positions	
— up to 40 °C, max.	14; 14 inputs at 55 °C horizontal or 45 °C vertical
Input voltage	
• Rated value (DC)	24 V; DC at 4 mA nominal
• for signal "0"	5 V DC at 1 mA
• for signal "1"	15 VDC at 2.5 mA
Input current	
• for signal "1", typ.	4 mA; nominal
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	
• shielded, max.	500 m; 50 m for technological functions
• Unshielded, max.	300 m; 50 m for technological functions
Digital outputs	
Number of digital outputs	10; Relays
integrated channels (DO)	10
short-circuit protection	No; to be provided externally
Switching capacity of the outputs	
• with resistive load, max.	2 A
• on lamp load, max.	30 W; 30 W with DC, 200 W with AC
Output delay with resistive load	
• "0" to "1", max.	10 ms; max.
• "1" to "0", max.	10 ms; max.
Relay outputs	
• Number of relay outputs, integrated	10
• Number of relay outputs	10
• Number of operating cycles, max.	mechanically 10 million, at rated load voltage 100,000
Cable length	
• shielded, max.	500 m
• 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	
• shielded, max.	100 m; twisted and shielded
Analog outputs	
Number of analog outputs	2
Integrated channels (AO)	2; 0 to 20 mA
Cable length	
• shielded, max.	100 m; shielded, twisted pair
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
1st interface	
Interface type	PROFINET
Physics	Ethernet, 2-port switch, 2*RJ45
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	
— 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
Galvanic isolation	
Galvanic isolation digital inputs	
• Galvanic isolation digital inputs	Functional isolation (Optocoupler)
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
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	
• Min.	0 °C
• max.	55 °C
• horizontal installation, min.	0 °C
• horizontal installation, max.	55 °C
• vertical installation, min.	0 °C
• vertical installation, max.	55 °C
Storage/transport temperature	
• 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
Relative humidity	
• Operation, max.	95 %; no condensation

<ul style="list-style-type: none"> • Permissible range (without condensation) at 25 °C 	95 %
Vibrations	
<ul style="list-style-type: none"> • Vibrations 	2G wall mounting, 1G DIN rail
<ul style="list-style-type: none"> • Operation, checked according to IEC 60068-2-6 	Yes
Shock test	
<ul style="list-style-type: none"> • 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; incl. failsafe
— FBD	Yes; incl. failsafe
— SCL	Yes
Cycle time monitoring	
<ul style="list-style-type: none"> • can be set 	Yes
Dimensions	
Width	130 mm
Height	100 mm
Depth	75 mm
Weights	
Weight, approx.	530 g
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