SIEMENS

SIMATIC S7-1200, CPU 1211C,
COMPACT CPU, AC/DC/RELAY,
ONBOARD I/O: 6 DI 24V DC;
4 DO RELAY 2A;
2 AI 0 - 10V DC,
POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ,
PROGRAM/DATA MEMORY: 30 KB

Supply voltage	
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)	60 mA at 120 V AC; 30 mA at 240 V AC
Inrush current, max.	20 A ; at 264 V
Encoder supply	
24 V encoder supply	
24 V	Permissible range: 20.4 to 28.8 V
Output current	
Current output to backplane bus (DC 5 V), max.	750 mA ; Max. 5 V DC for SM and CM
Power losses	
Power loss, typ.	10 W
Memory	
Usable memory for user data	30 kbyte
Work memory	
integrated	30 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	
I/O address area, overall	1024 bytes for inputs / 1024 bytes for outputs
Process image	
Inputs, adjustable	1 kbyte
Outputs, adjustable	1 kbyte
Hardware configuration	
Number of modules per system, max.	3 communication modules, 1 signal board
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	6 ; integrated
of which, inputs usable for technological functions	6 ; HSC (High Speed Counting)
integrated channels (DI)	6
m/p-reading	Yes
Number of simultaneously controllable inputs	
all mounting positions	
up to 40 °C, max.	6
Input voltage	
Rated value, DC	24 V
for signal "0"	5 V DC at 1 mA

for signal "1"	15 VDC at 2.5 mA
Input current	
for signal "1", typ.	1 mA
Input delay (for rated value of input voltage)	
for standard inputs	
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
Cable length	
Cable length, shielded, max.	500 m ; 50 m for technological functions
Cable length unshielded, max.	300 m ; For technological functions: No
Digital outputs	
Number of digital outputs	4 ; Relays
integrated channels (DO)	4
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 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.
Switching frequency	
of the pulse outputs, with resistive load, max.	1 Hz
Relay outputs	
Number of relay outputs	4
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	
Integrated channels (AI)	2 ; 0 to 10 V
Number of analog inputs	2
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 value creation	
Integrations 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
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

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	500 V 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	
on the 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	

Emission of radio interferences acc. to EN 55 011 (limit class A)	Yes ; Group 1
Emission of radio interference acc. to EN 55 011 (limit class B)	Yes ; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011

Degree and class of protection

IP20	Yes

Standards, approvals, certificates

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

Marine approval

Marine approval	Yes

Ambient conditions

Operating temperature

Min.	-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.	1080 hPa
Storage/transport, min.	660 hPa
Storage/transport, max.	1080 hPa

Relative humidity

Operation, max.	95 % ; no condensation

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

Climatic and mechanical conditions for storage and transport

Climatic conditions for storage and transport		
Free fall		
Drop height, max. (in packaging)	0.3 m ; five times, in dispatch package	
Temperature		
Permissible temperature range	-40 °C to +70 °C	
Relative humidity		
Permissible range (without condensation) at 25 °C	95 %	
Mechanical and climatic conditions during operation		
Climatic conditions in operation		
Temperature		
Min.	-20 °C	
max.	60 °C	
Air pressure acc. to IEC 60068-2-13		
Permissible air pressure	1080 to 795 hPa	
Permissible operating height	-1000 to 2000 m	
Pollutant concentrations		
SO2 at RH < 60% without condensation	S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free	
Configuration		
programming		
Programming language		
LAD	Yes	
FBD	Yes	
SCL	Yes	
Cycle time monitoring		
adjustable	Yes	
Dimensions		
Width	90 mm	
Height	100 mm	
Depth	75 mm	
Weights		
Weight, approx.	420 g	
Status	Apr 10, 2014	