

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: 50 KB

<b>General information</b>	
<b>Engineering with</b>	
Programming package	As of STEP 7 V11.0 SP2
<b>Supply voltage</b>	
24 V DC	Yes
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
<b>Load voltage L+</b>	
Rated value (DC)	24 V
permissible range, lower limit (DC)	20.4 V
permissible range, upper limit (DC)	28.8 V
<b>Input current</b>	
Current consumption, max.	1.2 A ; 24 V DC
Inrush current, max.	12 A ; 28.8 VDC
<b>Encoder supply</b>	
24 V encoder supply	
24 V	Permissible range: 20.4 to 28.8 V
<b>Output current</b>	
Current output to backplane bus (DC 5 V), max.	1000 mA ; 5 VDC max. for SM and CM
<b>Power losses</b>	
Power loss, typ.	9 W
<b>Memory</b>	
Usable memory for user data	50 kbyte
<b>Work memory</b>	
integrated	50 kbyte
expandable	No
<b>Load memory</b>	
integrated	1 Mbyte

<b>Backup</b>	
<b>present</b>	Yes ; (maintenance-free)
<b>without battery</b>	Yes
<b>CPU processing times</b>	
<b>for bit operations, typ.</b>	0.085 µs ; / instruction
<b>for word operations, typ.</b>	1.7 µs ; / instruction
<b>for floating point arithmetic, typ.</b>	2.5 µs ; / instruction
<b>CPU-blocks</b>	
<b>Number of blocks (total)</b>	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>	
<b>Number, max.</b>	Limited only by RAM for code
<b>Data areas and their retentivity</b>	
<b>retentive data area in total (incl. times, counters, flags), max.</b>	10 kbyte
<b>Flag</b>	
<b>Number, max.</b>	4 kbyte ; Size of bit memory address area
<b>Address area</b>	
<b>I/O address area</b>	
<b>I/O address area, overall</b>	1024 bytes for inputs / 1024 bytes for outputs
<b>Process image</b>	
<b>Inputs, adjustable</b>	1 kbyte
<b>Outputs, adjustable</b>	1 kbyte
<b>Hardware configuration</b>	
<b>Number of modules per system, max.</b>	3 communication modules, 1 signal board, 2 signal modules
<b>Time of day</b>	
<b>Clock</b>	
<b>Hardware clock (real-time clock)</b>	Yes
<b>Deviation per day, max.</b>	60 s/month at 25 °C
<b>Backup time</b>	480 h ; Typical
<b>Digital inputs</b>	
<b>Number/binary inputs</b>	8 ; integrated
<b>of which, inputs usable for technological functions</b>	4 ; HSC (High Speed Counting)
<b>integrated channels (DI)</b>	8
<b>m/p-reading</b>	Yes
<b>Number of simultaneously controllable inputs</b>	
<b>all mounting positions</b>	
<b>up to 40 °C, max.</b>	8

<b>Input voltage</b>	
Rated value, DC	24 V
for signal "0"	5 V DC at 1 mA.
for signal "1"	15 VDC at 2.5 mA.
<b>Input current</b>	
for signal "1", typ.	1 mA
<b>Input delay (for rated value of input voltage)</b>	
for standard inputs	
Parameterizable	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, 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 @ 100 kHz & 1 @ 30 kHz differential: 3 @ 80 kHz 1 @ 30 kHz
<b>Cable length</b>	
Cable length, shielded, max.	500 m ; 50 m for technological functions
Cable length unshielded, max.	300 m ; For technological functions: No
<b>Digital outputs</b>	
Number/binary outputs	6
of which high-speed outputs	4 ; 100 kHz Pulse Train Output
integrated channels (DO)	6
Functionality/short-circuit strength	No ; to be provided externally
Limitation of inductive shutdown voltage to	L+ (-48 V)
<b>Switching capacity of the outputs</b>	
with resistive load, max.	0.5 A
on lamp load, max.	5 W
<b>Output voltage</b>	
for signal "0", max.	0.1 V ; with 10 kOhm load
for signal "1", min.	20 V
<b>Output current</b>	
for signal "1" rated value	0.5 A
for signal "0" residual current, max.	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>Cable length</b>	
Cable length, shielded, max.	500 m
Cable length unshielded, max.	150 m
<b>Analog inputs</b>	
Integrated channels (AI)	2 ; 0 to 10 V
Number of analog inputs	2
<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>	
Cable length, shielded, max.	100 m ; twisted and shielded
<b>Analog outputs</b>	
<b>Cable length</b>	
Cable length, shielded, max.	100 m ; Shielded, twisted wire pair
<b>Analog value creation</b>	
<b>Integrations 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>	
Type of interface	PROFINET
Physics	Ethernet
Isolated	Yes
Automatic detection of transmission speed	Yes
Autonegotiation	Yes
Autocrossing	Yes
<b>Functionality</b>	
PROFINET IO Controller	Yes
<b>Communication functions</b>	
<b>S7 communication</b>	
supported	Yes
as server	Yes

as client	Yes
<b>Open IE communication</b>	
TCP/IP	Yes
ISO-on-TCP (RFC1006)	Yes
UDP	Yes
<b>Web server</b>	
supported	Yes
User-defined websites	Yes
<b>Test commissioning functions</b>	
<b>Status/control</b>	
Status/control variable	Yes
Variables	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
<b>Forcing</b>	
Forcing	Yes
<b>Diagnostic buffer</b>	
present	Yes
<b>Integrated Functions</b>	
Number of counters	4
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
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
Galvanic isolation digital inputs	500 V AC for 1 minute
between the channels, in groups of	1
<b>Galvanic isolation digital outputs</b>	
Galvanic isolation digital outputs	Yes
between the channels	No
between the channels, in groups of	1
<b>Permissible potential difference</b>	
between different circuits	500 V DC between 24 V DC and 5 V DC
<b>EMC</b>	
<b>Interference immunity against discharge of static electricity</b>	

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>	
on the 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>	
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
<b>Degree and class of protection</b>	
IP20	Yes
<b>Standards, approvals, certificates</b>	
CE mark	Yes
CSA approval	Yes
UL approval	Yes
cULus	Yes
C-TICK	Yes
FM approval	Yes
Marine approval	Yes
<b>Ambient conditions</b>	
<b>Operating temperature</b>	
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
<b>Storage/transport temperature</b>	
Min.	-40 °C
max.	70 °C
<b>Air pressure</b>	
Operation, min.	795 hPa

<b>Operation, max.</b>	1080 hPa
<b>Storage/transport, min.</b>	660 hPa
<b>Storage/transport, max.</b>	1080 hPa
<b>Relative humidity</b>	
<b>Operation, max.</b>	95 % ; no condensation
<b>Vibrations</b>	
<b>Vibrations</b>	2G wall mounting, 1G DIN rail
<b>Operation, checked according to IEC 60068-2-6</b>	Yes
<b>Shock test</b>	
<b>checked according to IEC 60068-2-27</b>	Yes ; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms
<b>Climatic and mechanical conditions for storage and transport</b>	
<b>Climatic conditions for storage and transport</b>	
<b>Free fall</b>	
<b>Drop height, max. (in packaging)</b>	0.3 m ; five times, in dispatch package
<b>Temperature</b>	
<b>Permissible temperature range</b>	-40 °C to +70 °C
<b>Mechanical and climatic conditions during operation</b>	
<b>Climatic conditions in operation</b>	
<b>Temperature</b>	
<b>Min.</b>	-20 °C
<b>max.</b>	60 °C
<b>Air pressure acc. to IEC 60068-2-13</b>	
<b>Permissible air pressure</b>	1080 to 795 hPa
<b>Permissible operating height</b>	-1000m to 2000m
<b>Pollutant concentrations</b>	
<b>SO2 at RH &lt; 60% without condensation</b>	SO2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free
<b>Configuration</b>	
<b>programming</b>	
<b>Programming language</b>	
<b>LAD</b>	Yes
<b>FBD</b>	Yes
<b>SCL</b>	Yes
<b>Cycle time monitoring</b>	
<b>adjustable</b>	Yes
<b>Dimensions</b>	
<b>Width</b>	90 mm
<b>Height</b>	100 mm

<b>Depth</b>	75 mm
<b>Weight</b>	
<b>Weight, approx.</b>	370 g
Status	Mar 11, 2013