



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

General information	
Engineering with	
Programming package	STEP 7 V13 or higher
Supply voltage	
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 (rated value)	400 mA ; Typical
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	

<b>Current output to backplane bus (DC 5 V), max.</b>	1000 mA ; Max. 5 V DC for SM and CM
<b>Power losses</b>	
<b>Power loss, typ.</b>	9 W
<b>Memory</b>	
<b>Type of memory</b>	EEPROM
<b>Usable memory for user data</b>	50 kbyte
<b>Work memory</b>	
<b>integrated</b>	50 kbyte
<b>expandable</b>	No
<b>Load memory</b>	
<b>integrated</b>	1 Mbyte
<b>Plug-in (SIMATIC Memory Card), max.</b>	2 Gbyte ; with SIMATIC memory card
<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 ; / Operation
<b>for word operations, typ.</b>	1.7 µs ; / Operation
<b>for floating point arithmetic, typ.</b>	2.3 µs ; / Operation
<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 comm. modules, 1 signal board, 2 signal modules
<b>Time of day</b>	

<b>Clock</b>	
Hardware clock (real-time clock)	Yes
Deviation per day, max.	+/- 60 s/month at 25 °C
Backup time	480 h ; Typical
<b>Digital inputs</b>	
Number of digital inputs	8 ; Integrated
of which, inputs usable for technological functions	6 ; HSC (High Speed Counting)
integrated channels (DI)	8
m/p-reading	Yes
<b>Number of simultaneously controllable inputs</b>	
all mounting positions	
up to 40 °C, max.	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	0.1 / 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	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 of digital outputs	6
of which high-speed outputs	4 ; 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)
<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.	3 µs
<b>Switching frequency</b>	
of the pulse outputs, with resistive load, max.	100 kHz
<b>Relay outputs</b>	
Max. number of relay outputs, integrated	0
<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>	
Number of analog outputs	0
<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>	
<b>2-wire sensor</b>	Yes
<b>1st interface</b>	
<b>Interface type</b>	PROFINET
<b>Physics</b>	Ethernet
<b>Isolated</b>	Yes
<b>Automatic detection of transmission speed</b>	Yes
<b>Autonegotiation</b>	Yes
<b>Autocrossing</b>	Yes
<b>Functionality</b>	
<b>PROFINET IO Device</b>	Yes
<b>PROFINET IO Controller</b>	Yes
<b>PROFINET IO Controller</b>	
<b>Prioritized startup supported</b>	
<b>Number of IO Devices, max.</b>	16
<b>Communication functions</b>	
<b>S7 communication</b>	
<b>supported</b>	Yes
<b>as server</b>	Yes
<b>As client</b>	Yes
<b>Open IE communication</b>	
<b>TCP/IP</b>	Yes
<b>ISO-on-TCP (RFC1006)</b>	Yes
<b>UDP</b>	Yes
<b>Web server</b>	
<b>supported</b>	Yes
<b>User-defined websites</b>	Yes
<b>Test commissioning functions</b>	
<b>Status/control</b>	
<b>Status/control variable</b>	Yes
<b>Variables</b>	Inputs/outputs, memory bits, DBs, distributed I/Os, timers, counters
<b>Forcing</b>	
<b>Forcing</b>	Yes
<b>Diagnostic buffer</b>	
<b>present</b>	Yes
<b>Integrated Functions</b>	
<b>Number of counters</b>	6
<b>Counter frequency (counter) max.</b>	100 kHz

Frequency meter	Yes
controlled positioning	Yes
PID controller	Yes
Number of alarm inputs	4
Number of pulse outputs	4
Limit frequency (pulse)	100 kHz
<b>Galvanic isolation</b>	
<b>Galvanic isolation digital inputs</b>	
Galvanic isolation digital inputs	500V AC for 1 minute
between the channels, in groups of	1
<b>Galvanic isolation digital outputs</b>	
Galvanic isolation digital outputs	500V AC for 1 minute
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
UL approval	Yes
cULus	Yes

<b>RCM (former C-TICK)</b>	Yes
<b>FM approval</b>	Yes
<b>Marine approval</b>	
<b>Marine approval</b>	Yes
<b>Ambient conditions</b>	
<b>Operating temperature</b>	
<b>Min.</b>	-20 °C
<b>max.</b>	60 °C
<b>horizontal installation, min.</b>	-20 °C
<b>horizontal installation, max.</b>	60 °C
<b>vertical installation, min.</b>	-20 °C
<b>vertical installation, max.</b>	50 °C
<b>Storage/transport temperature</b>	
<b>Min.</b>	-40 °C
<b>max.</b>	70 °C
<b>Air pressure</b>	
<b>Operation, min.</b>	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>Relative humidity</b>	
<b>Permissible range (without condensation) at 25 °C</b>	95 %
<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>	-1000 to 2000 m
<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>Weights</b>	
<b>Weight, approx.</b>	370 g
Status	Jun 28, 2014