



SIMATIC S7-1200, CPU 1214C,  
 COMPACT CPU, AC/DC/RLY,  
 ONBOARD I/O: 14 DI 24V DC;  
 10 DO RELAY 2A;  
 2 AI 0 - 10V DC,  
 POWER SUPPLY: AC 85 - 264 V AC AT 47 - 63 HZ,  
 PROGRAM/DATA MEMORY: 75 KB

| General information                      |                                       |
|--|---------------------------------------|
| Engineering with                         |                                       |
| Programming package                      | STEP 7 V13 or higher                  |
| 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)        | 100 mA at 120 V AC; 50 mA at 240 V AC |
| Inrush current, max.                     | 20 A ; at 264 V                       |
| Encoder supply                           |                                       |
| 24 V encoder supply                      |                                       |
| 24 V                                     | Permissible range: 20.4V to 28.8V     |
| Output current                           |                                       |

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| <b>Current output to backplane bus (5 V DC), max.</b>                    | 1600 mA ; Max. 5 V DC for SM and CM   |
| <b>Power loss</b>  |   |
| <b>Power loss, typ.</b>  | 14 W  |
| <b>Memory</b>  |   |
| <b>Type of memory</b>  | EEPROM  |
| <b>usable memory for user data</b>                                       | 75 kbyte  |
| <b>Work memory</b>   |   |
| <b>integrated</b>  | 75 kbyte  |
| <b>expandable</b>  | No  |
| <b>Load memory</b>   |   |
| <b>integrated</b>  | 4 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>  | 8 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, 8 signal modules   |
| <b>Time of day</b>   |   |

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| <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                              | 14 ; Integrated   |
| of which inputs usable for technological functions    | 6 ; HSC (High Speed Counting)   |
| integrated channels (DI)                              | 14  |
| m/p-reading   | Yes   |
| <b>Number of simultaneously controllable inputs</b>   |   |
| all mounting positions                                |   |
| up to 40 °C, max.                                     | 14  |
| <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                                       | Yes ; Single phase : 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 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                             | 10 ; Relays   |
| integrated channels (DO)                              | 10  |
| Short-circuit protection                              | No ; to be provided externally  |
| <b>Switching capacity of the outputs</b>              |   |
| with resistive load, max.                             | 2 A   |
| on lamp load, max.                                    | 30 W with DC, 200 W with AC   |

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| <b>Output delay with resistive load</b>                       |  |
| "0" to "1", max.  | 10 ms ; max.   |
| "1" to "0", max.  | 10 ms ; max.   |
| <b>Switching frequency</b>                                    |  |
| of the pulse outputs, with resistive load, max.               | 1 Hz   |
| <b>Relay outputs</b>  |  |
| Max. 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 |
| <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>Analog value generation</b>                                |  |
| <b>Integration 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>1. Interface</b>   |  |
| Interface type  | PROFINET   |
| Physics   | Ethernet   |
| isolated  | Yes  |
| automatic detection of transmission rate                      | Yes  |
| Autonegotiation   | Yes  |

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| Autocrossing                             | Yes  |
| <b>Functionality</b>                     |  |
| PROFINET IO Device                       | Yes  |
| PROFINET IO Controller                   | Yes  |
| <b>PROFINET IO Controller</b>            |  |
| Prioritized startup supported            |  |
| Number of IO Devices, max.               | 16   |
| <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                       | 6  |
| Counting frequency (counter) max.        | 100 kHz  |
| Frequency meter                          | Yes  |
| controlled positioning                   | Yes  |
| PID controller                           | Yes  |
| Number of alarm inputs                   | 4  |
| Number of pulse outputs                  | 4  |
| <b>Galvanic isolation</b>                |  |
| <b>Galvanic isolation digital inputs</b> |  |
| Galvanic isolation digital inputs        | 500V AC for 1 minute   |

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| between the channels, in groups of   | 1   |
| <b>Galvanic isolation digital outputs</b>  |   |
| Galvanic isolation digital outputs   | Relays  |
| 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 cables acc. to IEC 61000-4-4   | Yes   |
| <b>Interference immunity against voltage surge</b>   |   |
| on the supply lines acc. to IEC 61000-4-5  | Yes   |
| <b>Interference immunity against conducted variable disturbance 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 interference 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   |
| RCM (former C-TICK)  | Yes   |
| FM approval  | Yes   |
| <b>Marine approval</b>   |   |
| Marine approval  | Yes   |
| <b>Ambient conditions</b>  |   |
| <b>Operating temperature</b>   |   |
| min.   | -20 °C  |
| max.   | 60 °C   |

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| 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  |
| Operation, max.   | 1080 hPa   |
| Storage/transport, min.   | 660 hPa  |
| Storage/transport, max.   | 1080 hPa   |
| <b>Relative humidity</b>  |  |
| Operation, max.   | 95 % ; no condensation   |
| <b>Vibrations</b>   |  |
| Vibrations  | 2G wall mounting, 1G DIN rail  |
| Operation, tested according to IEC 60068-2-6                        | Yes  |
| <b>Shock test</b>   |  |
| 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 |
| <b>Climatic and mechanical conditions for storage and transport</b> |  |
| <b>Climatic conditions for storage and transport</b>                |  |
| <b>Free fall</b>  |  |
| Drop height, max. (in packaging)                                    | 0.3 m ; five times, in dispatch package  |
| <b>Temperature</b>  |  |
| permissible temperature range                                       | -40 °C to +70 °C   |
| <b>Relative humidity</b>  |  |
| permissible range (without condensation) at 25 °C                   | 95 %   |
| <b>Mechanical and climatic conditions during operation</b>          |  |
| <b>Climatic conditions in operation</b>                             |  |
| <b>Temperature</b>  |  |
| min.  | -20 °C   |
| max.  | 60 °C  |
| <b>Air pressure acc. to IEC 60068-2-13</b>                          |  |
| permissible air pressure  | 1080 to 795 hPa  |
| permissible operating height  | -1000 to 2000 m  |
| <b>Pollutant concentrations</b>                                     |  |
| SO2 at RH < 60% without condensation                                | 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>                 | 110 mm      |
| <b>Height</b>                | 100 mm      |
| <b>Depth</b>                 | 75 mm       |
| <b>Weights</b>               |             |
| <b>Weight, approx.</b>       | 475 g       |
| Status                       | Aug 6, 2014 |