



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

| Display | |
|---|-------------------------------------|
| with display | No |
| Supply voltage | |
| Rated value (DC) | Yes |
| <ul style="list-style-type: none"> • 24 V DC | |
| permissible range, lower limit (DC) | 20.4 V |
| permissible range, upper limit (DC) | 28.8 V |
| Load voltage L+ | |
| <ul style="list-style-type: none"> • Rated value (DC) | 24 V |
| <ul style="list-style-type: none"> • permissible range, lower limit (DC) | 20.4 V |
| <ul style="list-style-type: none"> • 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 | |
| <ul style="list-style-type: none"> • 24 V | Permissible range: 20.4V to 28.8V |
| Output current | |
| Current output to backplane bus (DC 5 V), max. | 1 000 mA; Max. 5 V DC for SM and CM |
| Power losses | |
| Power loss, typ. | 9 W |
| Memory | |
| Type of memory | EEPROM |

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| Usable memory for user data | 75 kbyte |
| Work memory | |
| • Integrated | 50 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 | |
| • Inputs | 1 024 byte |
| • Outputs | 1 024 byte |
| Process image | |
| • Inputs, adjustable | 1 kbyte |
| • Outputs, adjustable | 1 kbyte |
| Hardware configuration | |
| Number of modules per system, max. | 3 comm. modules, 1 signal board, 2 signal modules |
| 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 | |

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|---|---|
| Number of digital inputs | 8; Integrated |
| <ul style="list-style-type: none"> • of which, inputs usable for technological functions | 6; HSC (High Speed Counting) |
| integrated channels (DI) | 8 |
| m/p-reading | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 40 °C, max. | 8 |
| Input voltage | |
| <ul style="list-style-type: none"> • Rated value (DC) | 24 V |
| <ul style="list-style-type: none"> • for signal "0" | 5 V DC at 1 mA |
| <ul style="list-style-type: none"> • for signal "1" | 15 VDC at 2.5 mA |
| Input current | |
| <ul style="list-style-type: none"> • for signal "1", typ. | 1 mA |
| 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 | Single phase: 3 @ 100 kHz & 1 @ 30 kHz, differential: 3 @ 80 kHz & 1 @ 30 kHz |
| Cable length | |
| <ul style="list-style-type: none"> • shielded, max. | 500 m; 50 m for technological functions |
| <ul style="list-style-type: none"> • Unshielded, max. | 300 m; For technological functions: No |
| Digital outputs | |
| Number of digital outputs | 6 |
| <ul style="list-style-type: none"> • 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) |
| Switching capacity of the outputs | |
| <ul style="list-style-type: none"> • with resistive load, max. | 0.5 A |
| <ul style="list-style-type: none"> • on lamp load, max. | 5 W |
| Output voltage | |
| <ul style="list-style-type: none"> • for signal "0", max. | 0.1 V; with 10 kOhm load |
| <ul style="list-style-type: none"> • for signal "1", min. | 20 V |
| Output current | |
| <ul style="list-style-type: none"> • for signal "1" rated value | 0.5 A |

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| • for signal "0" residual current, max. | 0.1 mA |
| Output delay with resistive load | |
| • "0" to "1", max. | 1 µs |
| • "1" to "0", max. | 3 µs |
| Switching frequency | |
| • of the pulse outputs, with resistive load, max. | 100 kHz |
| Relay outputs | |
| • Number of relay outputs, integrated | 0 |
| 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 | 0 |
| Cable length | |
| • shielded, max. | 100 m; Shielded, twisted wire 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 |
| Isolated | Yes |
| Automatic detection of transmission speed | Yes |
| Autonegotiation | Yes |

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| 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 |
| Limit frequency (pulse) | 100 kHz |
| Galvanic isolation | |
| Galvanic isolation digital inputs | |

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| <ul style="list-style-type: none"> Galvanic isolation digital inputs between the channels, in groups of | 500V AC for 1 minute 1 |
| Galvanic isolation digital outputs | |
| <ul style="list-style-type: none"> Galvanic isolation digital outputs between the channels, in groups of | 500V AC for 1 minute 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 | |
| <ul style="list-style-type: none"> Interference immunity against discharge of static electricity acc. to IEC 61000-4-2 <ul style="list-style-type: none"> — Test voltage at air discharge — Test voltage at contact discharge | Yes 8 kV 6 kV |
| Interference immunity to cable-borne interference | |
| <ul style="list-style-type: none"> Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity on signal lines acc. to IEC 61000-4-4 | Yes Yes |
| Surge immunity | |
| <ul style="list-style-type: none"> on the supply lines acc. to IEC 61000-4-5 | Yes |
| Immunity against conducted interference induced by high-frequency fields | |
| <ul style="list-style-type: none"> Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 | Yes |
| Emission of radio interference acc. to EN 55 011 | |
| <ul style="list-style-type: none"> Limit class A, for use in industrial areas Limit class B, for use in residential areas | Yes; Group 1 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 | |
| <ul style="list-style-type: none"> IP20 | Yes |
| Standards, approvals, certificates | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| RCM (formerly C-TICK) | Yes |
| FM approval | Yes |
| Marine approval | |
| <ul style="list-style-type: none"> Marine approval | Yes |
| Ambient conditions | |
| Free fall | |
| <ul style="list-style-type: none"> Drop height, max. (in packaging) | 0.3 m; five times, in dispatch package |

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| Ambient temperature in operation | |
| • 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 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 |
| • Permissible operating height | -1000 to 2000 m |
| Relative humidity | |
| • Operation, max. | 95 %; no condensation |
| • Permissible range (without condensation) at 25 °C | 95 % |
| 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 |
| 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 |
| — FBD | Yes |
| — SCL | Yes |
| Cycle time monitoring | |
| • can be set | Yes |
| Dimensions | |
| Width | 90 mm |
| Height | 100 mm |
| Depth | 75 mm |
| Weights | |
| Weight, approx. | 370 g |

last modified:

10.02.2015