



SIPLUS S7-1200 CPU 1215FC DC/DC/DC based on 6ES7215-1AF40-0XB0 with conformal coating, -25...+55 °C, compact CPU, DC/DC/DC, 2 PROFINET ports, onboard I/O: 14 DI 24 V DC; 10 DQ 24 V DC 0.5 A; 2 AI 0-10 V DC, 2 AQ 0-20 mA DC, power supply: DC 20.4 - 28.8 V DC, program/data memory 150 KB

| General information | |
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| Product type designation | CPU 1215FC DC/DC/DC |
| Engineering with | |
| <ul style="list-style-type: none"> STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275 |
| Supply voltage | |
| Rated value (DC) | |
| <ul style="list-style-type: none"> 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) | 5 V |
| permissible range, upper limit (DC) | 250 V |
| Input current | |
| Current consumption (rated value) | 500 mA; CPU only |
| Current consumption, max. | 1 500 mA; CPU with all expansion modules |
| Inrush current, max. | 12 A; at 28.8 V DC |
| I^2t | 0.5 A ² ·s |
| Output current | |
| for backplane bus (5 V DC), max. | 1 600 mA; Max. 5 V DC for SM and CM |
| Encoder supply | |
| 24 V encoder supply | |
| <ul style="list-style-type: none"> 24 V | L+ minus 4 V DC min. |
| Power loss | |
| Power loss, typ. | 12 W |
| Memory | |
| Work memory | |
| <ul style="list-style-type: none"> integrated expandable | 150 kbyte No |
| Load memory | |
| <ul style="list-style-type: none"> integrated Plug-in (SIMATIC Memory Card), max. | 4 Mbyte with SIMATIC memory card |
| Backup | |
| <ul style="list-style-type: none"> present maintenance-free without battery | Yes Yes Yes |
| CPU processing times | |
| for bit operations, typ. | 0.085 µs; / instruction |


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| for word operations, typ. | 1.7 µs; / instruction |
| for floating point arithmetic, typ. | 2.3 µs; / instruction |
| 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 (incl. timers, counters, flags), max. | 10 kbyte |
| Flag | |
| • Size, max. | 8 kbyte; Size of bit memory address area |
| Local data | |
| • per priority class, max. | 16 kbyte; Priority class 1 (program cycle): 16 KB, priority class 2 to 26: 6 KB |
| Address area | |
| Process image | |
| • Inputs, adjustable | 1 kbyte |
| • Outputs, adjustable | 1 kbyte |
| Hardware configuration | |
| Number of modules per system, max. | 3 comm. modules, 1 signal board, 8 signal modules |
| Time of day | |
| Clock | |
| • Hardware clock (real-time) | Yes |
| • Backup time | 480 h; Typical |
| • Deviation per day, max. | 60 s/month at 25 °C |
| Digital inputs | |
| Number of digital inputs | 14; Integrated |
| • of which inputs usable for technological functions | 6; HSC (High Speed Counting) |
| Source/sink input | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 40 °C, max. | 14 |
| Input voltage | |
| • Rated value (DC) | 24 V |
| • for signal "0" | 5 V DC at 1 mA |
| • for signal "1" | 15 V DC at 2.5 mA |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | Yes; 0.2 ms, 0.4 ms, 0.8 ms, 1.6 ms, 3.2 ms, 6.4 ms 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 technological functions | |
| — parameterizable | Single phase: 3 @ 100 kHz & 3 @ 30 kHz, differential: 3 @ 80 kHz & 3 @ 30 kHz |
| Cable length | |
| • shielded, max. | 500 m; 50 m for technological functions |
| • unshielded, max. | 300 m; for technological functions: No |
| Digital outputs | |
| Number of digital outputs | 10; Relays |
| 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. |
| Relay outputs | |

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| <ul style="list-style-type: none"> • Number of relay outputs • Number of operating cycles, max. | 10 mechanically 10 million, at rated load voltage 100 000 |
| Cable length | |
| <ul style="list-style-type: none"> • shielded, max. • unshielded, max. | 500 m 150 m |
| Analog inputs | |
| Number of analog inputs | 2 |
| Input ranges | |
| <ul style="list-style-type: none"> • Voltage | Yes |
| Input ranges (rated values), voltages | |
| <ul style="list-style-type: none"> • 0 to +10 V — Input resistance (0 to 10 V) | Yes ≥100k ohms |
| Cable length | |
| <ul style="list-style-type: none"> • shielded, max. | 100 m; twisted and shielded |
| Analog outputs | |
| Number of analog outputs | 2 |
| Output ranges, current | |
| <ul style="list-style-type: none"> • 0 to 20 mA | Yes |
| Analog value generation for the inputs | |
| Integration and conversion time/resolution per channel | |
| <ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. • Integration time, parameterizable • Conversion time (per channel) | 10 bit Yes 625 μs |
| Analog value generation for the outputs | |
| Integration and conversion time/resolution per channel | |
| <ul style="list-style-type: none"> • Resolution with overrange (bit including sign), max. | 10 bit |
| Encoder | |
| Connectable encoders | |
| <ul style="list-style-type: none"> • 2-wire sensor | Yes |
| 1. Interface | |
| Interface type | PROFINET |
| Isolated | Yes |
| automatic detection of transmission rate | Yes |
| Autonegotiation | Yes |
| Autocrossing | Yes |
| Interface types | |
| <ul style="list-style-type: none"> • RJ 45 (Ethernet) • Number of ports • integrated switch | Yes 2 Yes |
| Protocols | |
| <ul style="list-style-type: none"> • PROFINET IO Controller • PROFINET IO Device • SIMATIC communication • Open IE communication • Web server • Media redundancy | Yes Yes Yes Yes Yes Yes; as MRP client |
| PROFINET IO Controller | |
| <ul style="list-style-type: none"> • Transmission rate, max. | 100 Mbit/s |
| Services | |
| <ul style="list-style-type: none"> — PG/OP communication — Isochronous mode — IRT — PROFIenergy — Prioritized startup — Number of IO devices with prioritized startup, max. — Number of connectable IO Devices, max. — Number of connectable IO Devices for RT, max. — of which in line, max. | Yes No No No Yes 16 16 16 16 |

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| — Activation/deactivation of IO Devices | Yes |
| — Number of IO Devices that can be simultaneously activated/deactivated, max. | 8 |
| — Updating time | The minimum value of the update time also depends on the communication component set for PROFINET IO, on the number of IO devices and the quantity of configured user data. |
| PROFINET IO Device | |
| Services | |
| — PG/OP communication | Yes |
| — Isochronous mode | No |
| — IRT | No |
| — PROFIenergy | Yes |
| — Shared device | Yes |
| — Number of IO Controllers with shared device, max. | 2 |
| Protocols | |
| Supports protocol for PROFINET IO | Yes |
| PROFIsafe | Yes |
| PROFIBUS | Yes; CM 1243-5 required |
| AS-Interface | Yes; CM 1243-2 required |
| Protocols (Ethernet) | |
| • TCP/IP | Yes |
| • DHCP | No |
| • SNMP | Yes |
| • DCP | Yes |
| • LLDP | Yes |
| Redundancy mode | |
| Media redundancy | |
| — MRP | Yes; as MRP client |
| — MRPD | No |
| SIMATIC communication | |
| • S7 routing | Yes |
| Open IE communication | |
| • TCP/IP | Yes |
| — Data length, max. | 8 kbyte |
| • ISO-on-TCP (RFC1006) | Yes |
| — Data length, max. | 8 kbyte |
| • UDP | Yes |
| — Data length, max. | 1 472 byte |
| Web server | |
| • supported | Yes |
| • User-defined websites | Yes |
| Further protocols | |
| • MODBUS | Yes |
| communication functions / header | |
| S7 communication | |
| • supported | Yes |
| • as server | Yes |
| • as client | Yes |
| • User data per job, max. | See online help (S7 communication, user data size) |
| Number of connections | |
| • overall | 16; dynamically |
| 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 | |

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| <ul style="list-style-type: none"> Number of configurable Traces Memory size per trace, max. | <p>2</p> <p>512 kbyte</p> |
| Integrated Functions | |
| Frequency measurement | Yes |
| controlled positioning | Yes |
| Number of position-controlled positioning axes, max. | 8 |
| Number of positioning axes via pulse-direction interface | Up to 4 with SB 1222 |
| PID controller | Yes |
| Number of alarm inputs | 4 |
| Potential separation | |
| Potential separation digital inputs | |
| <ul style="list-style-type: none"> Potential separation digital inputs between the channels, in groups of | <p>500V AC for 1 minute</p> <p>1</p> |
| Potential separation digital outputs | |
| <ul style="list-style-type: none"> Potential separation digital outputs between the channels between the channels, in groups of | <p>Relays</p> <p>No</p> <p>2</p> |
| 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 | <p>Yes</p> <p>8 kV</p> <p>6 kV</p> |
| 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 cables acc. to IEC 61000-4-4 | <p>Yes</p> <p>Yes</p> |
| Interference immunity against voltage surge | |
| <ul style="list-style-type: none"> Interference immunity on supply lines acc. to IEC 61000-4-5 | Yes |
| Interference immunity against conducted variable disturbance 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 | <p>Yes; Group 1</p> <p>Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011</p> |
| Degree and class of protection | |
| IP degree of protection | IP20 |
| Standards, approvals, certificates | |
| KC approval | Yes |
| Marine approval | Yes |
| Highest safety class achievable in safety mode | |
| <ul style="list-style-type: none"> Performance level according to ISO 13849-1 SIL acc. to IEC 61508 | <p>PLe</p> <p>SIL 3</p> |
| Ambient conditions | |
| Free fall | |
| <ul style="list-style-type: none"> Fall height, max. | 0.3 m; five times, in product package |
| Ambient temperature during operation | |
| <ul style="list-style-type: none"> min. max. horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. | <p>-25 °C; = Tmin</p> <p>55 °C; = Tmax</p> <p>-25 °C; = Tmin</p> <p>55 °C; = Tmax</p> <p>-25 °C; = Tmin</p> <p>45 °C; = Tmax</p> |
| Ambient temperature during storage/transportation | |
| <ul style="list-style-type: none"> min. max. | <p>-40 °C</p> <p>70 °C</p> |
| Air pressure acc. to IEC 60068-2-13 | |
| <ul style="list-style-type: none"> Storage/transport, min. | 660 hPa |

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| • Storage/transport, max. | 1 139 hPa |
| Altitude during operation relating to sea level | |
| • Installation altitude above sea level, max. | 2 000 m |
| • Ambient air temperature-barometric pressure-altitude | Tmin ... Tmax at 1 140 hPa ... 795 hPa (-1 000 m ... +2 000 m) |
| Relative humidity | |
| • With condensation, tested in accordance with IEC 60068-2-38, max. | 100 %; incl. condensation / frost permitted (no commissioning under condensation conditions) |
| Vibrations | |
| • Vibration resistance during operation acc. to IEC 60068-2-6 | 2 g (m/s ²) wall mounting, 1 g (m/s ²) DIN rail |
| • Operation, tested according to IEC 60068-2-6 | Yes |
| Shock testing | |
| • 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 |
| Resistance | |
| Coolants and lubricants | |
| — Resistant to commercially available coolants and lubricants | Yes |
| Use in stationary industrial systems | |
| — to biologically active substances according to EN 60721-3-3 | Yes; Class 3B2 mold, fungus and dry rot spores (with the exception of fauna); Class 3B3 on request |
| — to chemically active substances according to EN 60721-3-3 | Yes; Class 3C4 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-3 | Yes; Class 3S4 incl. sand, dust, * |
| Use on ships/at sea | |
| — to biologically active substances according to EN 60721-3-6 | Yes; Class 6B2 mold and fungal spores (excluding fauna); Class 6B3 on request |
| — to chemically active substances according to EN 60721-3-6 | Yes; Class 6C3 (RH < 75 %) incl. salt spray acc. to EN 60068-2-52 (severity degree 3); * |
| — to mechanically active substances according to EN 60721-3-6 | Yes; Class 6S3 incl. sand, dust; * |
| Usage in industrial process technology | |
| — Against chemically active substances acc. to EN 60654-4 | Yes; Class 3 (excluding trichlorethylene) |
| — Environmental conditions for process, measuring and control systems acc. to ANSI/ISA-71.04 | Yes; Level GX group A/B (excluding trichlorethylene; harmful gas concentrations up to the limits of EN 60721-3-3 class 3C4 permissible); level LC3 (salt spray) and level LB3 (oil) |
| Remark | |
| — Note regarding classification of environmental conditions acc. to EN 60721, EN 60654-4 and ANSI/ISA-71.04 | * The supplied plug covers must remain in place over the unused interfaces during operation! |
| Conformal coating | |
| • Coatings for printed circuit board assemblies acc. to EN 61086 | Yes; Class 2 for high reliability |
| • Protection against fouling acc. to EN 60664-3 | Yes; Type 1 protection |
| • Military testing according to MIL-I-46058C, Amendment 7 | Yes; Discoloration of coating possible during service life |
| • Qualification and Performance of Electrical Insulating Compound for Printed Board Assemblies according to IPC-CC-830A | Yes; Conformal coating, Class A |
| configuration / header | |
| configuration / programming / header | |
| Programming language | |
| — LAD | Yes; incl. failsafe |
| — FBD | Yes; incl. failsafe |
| — SCL | Yes |
| Know-how protection | |
| • User program protection/password protection | Yes |
| • Copy protection | Yes |
| • Block protection | Yes |
| Access protection | |
| • Protection level: Write protection | Yes |
| • Protection level: Read/write protection | Yes |

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| • Protection level: Complete protection | Yes |
| programming / cycle time monitoring / header | |
| • adjustable | Yes |
| Dimensions | |
| Width | 130 mm |
| Height | 100 mm |
| Depth | 75 mm |
| Weights | |
| Weight, approx. | 585 g |
| last modified: | 4/1/2022  |