SIEMENS

Data sheet



SIPLUS S7-1200 CPU 1214FC DC/DC/relay based on 6ES7214-1HF40-0XB0 with conformal coating, -25...+55 °C, compact CPU, DC/DC/relay, onboard I/O: 14 DI 24 V DC; 10 DQ relay 2 A; 2 AI 0-10 V DC, power supply: DC 20.4-28.8 V DC, program/data memory 125 KB

| General information | |
|---|---|
| Product type designation | CPU 1214FC DC/DC/Relay |
| Engineering with | |
| STEP 7 TIA Portal configurable/integrated from version | see entry ID: 109746275 |
| Supply voltage | |
| Rated value (DC) | |
| • 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, max. | 1 500 mA; max. with all expansion accessories |
| Inrush current, max. | 12 A; at 28.8 V |
| Encoder supply | |
| 24 V encoder supply | |
| • 24 V | L+ minus 4 V DC min. |
| Power loss | |
| Power loss, typ. | 12 W |
| Memory | |
| Work memory | |
| • integrated | 125 kbyte |
| Load memory | |
| • integrated | 4 Mbyte |
| Plug-in (SIMATIC Memory Card), max. | with SIMATIC memory card |
| Backup | |
| • present | Yes; maintenance-free |
| without battery | Yes |
| CPU processing times | |
| for bit operations, typ. | 0.08 μs; / Operation |
| for word operations, typ. | 1.7 µs; / Operation |
| for floating point arithmetic, typ. | 2.3 µs; / instruction |
| CPU-blocks | |
| Number of blocks (total) | 1 024; OBs, FBs, FCs, DBs |
| ОВ | |
| Number, max. | Limited only by RAM for code |
| Data areas and their retentivity | |
| | |

| Address area | |
|--|---|
| I/O address area | |
| | 1 024 byte |
| InputsOutputs | 1 024 byte |
| Process image | 1 027 0916 |
| Inputs, adjustable | 1 024 byte |
| | |
| Outputs, adjustable Landware configuration | 1 024 byte |
| 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; 12 days min. at 40 °C |
| Deviation per day, max. | ±60 s per month |
| Digital inputs | |
| Number of digital inputs | 14 |
| 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; 14 inputs at 55 °C horizontal or 45 °C vertical |
| Input voltage | |
| • Rated value (DC) | 24 V; DC at 4 mA nominal |
| • for signal "0" | 5 V DC at 1 mA |
| • for signal "1" | 15 V DC at 2.5 mA |
| Input current | |
| • for signal "1", typ. | 4 mA; nominal |
| 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 / |
| F | 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 technological functions | |
| — parameterizable | Single phase: 3 at 100 kHz & 3 at 30 kHz, differential: 3 at 80 kHz & 3 at 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 |
| Short-circuit protection | No; to be provided externally |
| Switching capacity of the outputs | |
| with resistive load, max. | 2 A |
| • on lamp load, max. | 30 W; 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 | |
| Number of relay outputs | 10 |
| Number of operating cycles, max. | mechanically 10 million, at rated load voltage 100 000 |
| Cable length | modification of million, at taled load voltage 100 000 |
| - | 500 m |
| • shielded, max. | 500 m |
| • unshielded, max. | 150 m |
| Analog inputs | |
| Number of analog inputs | 2 |
| Input ranges | |
| 3.7.17 | |
| Voltage Input ranges (rated values), voltages | Yes; 0 to 10V |



| • 0 to +10 V | Yes |
|--|---|
| — Input resistance (0 to 10 V) | ≥100k ohms |
| Cable length | |
| • shielded, max. | 100 m; shielded, twisted pair |
| Analog outputs | |
| Number of analog outputs | 0 |
| Cable length | |
| • shielded, max. | 100 m; shielded, twisted pair |
| Analog value generation for the inputs | |
| 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 |
| 1. Interface | |
| Interface type | PROFINET |
| Isolated | Yes |
| automatic detection of transmission rate | Yes |
| Autonegotiation | Yes |
| Autocrossing | Yes |
| Interface types | |
| • RJ 45 (Ethernet) | Yes |
| Protocols | |
| PROFINET IO Controller | Yes |
| PROFINET IO Device | Yes |
| PROFINET IO Controller | 100 |
| Services | |
| Number of IO devices with prioritized startup, max. | 16 |
| Protocols | 10 |
| Supports protocol for PROFINET IO | Yes |
| | 163 |
| | No |
| PROFIsafe | No Voc. CM 1243 5 required |
| PROFIsafe PROFIBUS | Yes; CM 1243-5 required |
| PROFIsafe PROFIBUS AS-Interface | |
| PROFIsafe PROFIBUS AS-Interface Protocols (Ethernet) | Yes; CM 1243-5 required Yes |
| PROFIsafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP | Yes; CM 1243-5 required |
| PROFIsafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication | Yes; CM 1243-5 required Yes Yes |
| PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP | Yes; CM 1243-5 required Yes Yes Yes |
| PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) | Yes; CM 1243-5 required Yes Yes Yes Yes |
| PROFIsafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP | Yes; CM 1243-5 required Yes Yes Yes |
| PROFIsafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFISafe PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication • supported | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication • supported • supported • supported • work and the supported • work and the supported • supported • supported • supported • supported • supported • as server | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication • supported • as server • as client Test commissioning functions | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication • supported • as server • as client Test commissioning functions | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control • Status/control variable | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control • Status/control variable • Variables | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control • Status/control variable • Variables Forcing | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |
| PROFIBUS AS-Interface Protocols (Ethernet) • TCP/IP Open IE communication • TCP/IP • ISO-on-TCP (RFC1006) • UDP Web server • supported • User-defined websites Further protocols • MODBUS communication functions / header S7 communication • supported • as server • as client Test commissioning functions Status/control • Status/control variable • Variables Forcing • Forcing Diagnostic buffer | Yes; CM 1243-5 required Yes Yes Yes Yes Yes Yes Yes Ye |



| Procuration Yes Controller | Number of configurable Traces | 2; Up to 512 KB of data per trace are possible |
|--|--|--|
| Frequency measurement ves Pric controller positioning Pric controller of atom injusts 4 Number of pales autusts Protential separation Potential separation digital injusts Protential separation Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity on against discharge of static electricity Interference immunity on against conducted static against electronic | | , , , |
| controlled positioning Yes PID controller System of June 1992 PID controller System of June outputs 4 Number of alarm injusts 4 Number of alarm injusts 4 Number of alarm injusts 4 Potential separation digital injusts Potential separation digital separation of state | | Yes |
| Pilo controller | | Yes |
| Number of pulse outputs Potential separation Potential separation digital inputs Sou V DC between 24 V DC and 5 V DC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity to static-between interference Interference immunity on signal cabries acc. to IEC 61000-4-2 Interference immunity on signal cabries acc. to IEC 61000-4-3 Interference immunity against voltage sat or section of the section o | | |
| Number of pulse outputs Potential separation digital inputs Sou V DC between 24 V DC and 5 V DC Indeference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity in pulsip lines acc. to IEC 61000-4 Interference immunity in spayly lines acc. to IEC 61000-4 Interference immunity on signal cables acc. to IEC 61000-4 Interference immunity against hybrid spay in sea acc. to IEC 61000-4 Interference immunity against hybrid spay in sea acc. to IEC 61000-4 Interference immunity against hybrid spayl | | |
| Potential separation Potential separation digital inputs Permissible potential difference between difference introductive potential difference between difference introductive potential difference poten | · | 4 |
| Potential separation digital inputs Promisibility potential difference between different circuits SOV VID between 24 V DC and 5 V DC EMC Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity acts to IEC 61000-42 — Test voltage at air discharge — Test voltage at contact discharge — Interference immunity on supply lines acc. to IEC 61000-4-4 — Interference immunity on supply lines acc. to IEC 61000-4-4 — Interference immunity against voltage surge — Ves Emission of radio interference acc. to EN 55 011 — Limit class A, for use in residential areas — Yes; Group 1 — Limit class A, for use in residential areas — Yes; When appropriate measures are used to ensure compliance with the limits for class B according to EN 50011 Degree and class of protection IPO Quere of protection — Performance level according to ISO 13849-1 — Yes INTERFERENCE STORE STO | <u> </u> | |
| Detection official difference Detection official difference Detection official difference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity on signal cabrage of static electricity Interference immunity on supply lines acc. to IEC 61000- 4-1 Interference immunity on signal cables acc. to IEC 61000- 4-2 Interference immunity on signal cables acc. to IEC 61000- 4-1 Interference immunity against voltage surge Yes Ves Yes Yes Coup 1 Yes Yes Ves Ves Ves Ves Ves Ves | Potential separation digital inputs | |
| Detween different circuits S00 V DC between 24 V DC and 5 V DC | Potential separation digital inputs | Functional isolation (Optocoupler) |
| Detween different circuits S00 V DC between 24 V DC and 5 V DC | Permissible potential difference | |
| Interference immunity against discharge of static electricity Interference immunity against discharge of static electricity Interference immunity to a child scharge — Test voltage at a cindischarge 8 kV — Test voltage at a cindischarge 8 kV Interference immunity on supply lines acc. to IEC 61000- 4-4 Interference immunity on supply lines acc. to IEC 61000- 4-4 Interference immunity on supply lines acc. to IEC 61000- 4-5 Interference immunity against voltage surge Yes Group 1 Yes Group 1 Yes Yes Group 1 Yes Yes Highest affety against against voltage against | | 500 V DC between 24 V DC and 5 V DC |
| ## Interference immunity against discharge of static electricity ace. to IEC 610004-42 — Test voltage at air discharge | EMC | |
| interference immunity against discharge of static electricity ace. to IEC 610004-42 — Test voltage at air discharge 6 kV Interference immunity to abib-orne interference • Interference immunity on supply lines acc. to IEC 61000-44 • Interference immunity on signal cables acc. to IEC 61000-44 • Interference immunity against voltage surge • Interference immunity against sublage surge • Interference immunity against subjective disturbance induced by high-frequency fields • Interference immunity against subjective gradiation acc. to IEC 61000-4-8 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in industrial areas • Limit class B, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas • Pet B, degree of protection • Interference immunity against the protection in Interference immunity against the protection in Interference immunity against the protection in Interference immunity against the protection | Interference immunity against discharge of static electricity | |
| Interference immunity to cable-borne interference Interference immunity on signal cables acc. to IEC 61000- 4-4 Interference immunity on signal cables acc. to IEC 61000- 4-4 Interference immunity on signal cables acc. to IEC 61000- 4-5 Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against voltage surge Interference immunity against tonducted variable disturbance induced by high-frequency fields Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against high-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency radiation acc. to IEC 61000-4 Interference immunity against tigh-frequency fields Yes Inte | Interference immunity against discharge of static | Yes |
| Interference immunity to cable-borne interference Interference immunity on supply lines acc. to IEC 61000-44 Interference immunity against voltage surge Interference immunity against subject frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Yes Yes Yes Yes, Group 1 | — Test voltage at air discharge | 8 kV |
| Interference immunity on supply lines acc. to IEC 61000-4-4 Interference immunity against vottage surge Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 - 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 Pegree and class of protection IP degree of protection IP and the safety class achievable in safety mode Performance level according to ISO 13849-1 SIL as a La IEC 61508 Ambient conditions Free fall Fall height, max 0,3 m; five times, in product package Ambient temperature during operation min. 2-25 °C; = Tmin horizontal installation, min. 2-25 °C wertical installation, min. vertical installation, min. | Test voltage at contact discharge | 6 kV |
| ### Interference immunity on signal cables acc. to IEC 61000-4-4 Interference immunity against voltage surge Interference immunity against sonducted variable disturbance induced by high-frequency fields Interference immunity against high-frequency radiation acc. to IEC 61000-4-5 Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 **Limit class B, for use in industrial areas **Limit class B, for use in industrial areas **Limit class B, for use in residential areas **Limit class B, for use in industrial areas **Limit class B, 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 IP20 Standards, approvals, certificates **Marine approval **Yes **When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 **Pes **Standards, approvals, certificates **Pes **Jes Group 1 **Pes **Jes Group 1 **Pes **Jes Group 1 **Jes | Interference immunity to cable-borne interference | |
| Interference immunity against voltage surge Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against conducted variable disturbance induced by high-frequency fields Emission of radio interference acc. to EN 55 011 Image: Limit class A, for use in industrial areas Image: Limit class B, for use in residential areas Image: Limit class B, for use in residential areas Image: Ves: When appropriate measures are used to ensure compliance with the limits for class B according to EN 55011 Degree and class of protection IP20 Standards, approvals, certificates Marine approval Indicated a protection IP20 Standards, approvals, certificates Marine approval Indicated a protection IP20 Standards, approvals, certificates Marine approval Indicated a protection IP20 Standards, approvals, certificates Marine approval IP20 Standards, approvals, certificates Marine approval IP20 Standards, approvals, certificates IP20 IP20 Standards, approvals, certificates IP20 Standards, approvals, certificates | , ,,, | Yes |
| Interference immunity on supply lines acc. to IEC 61000-4-5 | | Yes |
| Interference immunity against conducted variable disturbance induced by high-frequency fields Interference immunity against high-frequency radiation act. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 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 IP degree of protection IP degree of protection Yes Marine approvals, certificates Marine approvals, certificates Marine approvals achievable in safety mode Performance level according to ISO 13849-1 SIL, acc. to IEC 61508 SIL 3 Ambient conditions Free fall Fall height, max. 0,3 m; five times, in product package Ambient conditions Free fall Ambient condition, min. 2-25 °C; = Tmin Anizontal installation, min. A | Interference immunity against voltage surge | |
| Interference immunity against high-frequency radiation acc. to IEC 6 1000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas Pegree and class of protection IP degree of protection IP degree of protection Pegree and class of protection protect | | Yes |
| acc. to IEC 61000-4-6 Emission of radio interference acc. to EN 55 011 • Limit class A, for use in industrial areas • Limit class B, for use in residential areas • Limit class B, for use in residential areas Pegree and class of protection IP degree of protection IP degree of protection IP20 Standards, approval protection Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Ambient conditions Free fall • Fall height, max. Ambient temperature during operation • min. • max. • horizontal installation, min. • 25 °C; = Tmax • horizontal installation, max. • vertical installation, max. • About temperature during storage/transportation • min. • max. • vertical installation, max. • vertical in | Interference immunity against conducted variable disturbance indu | iced by high-frequency fields |
| Limit class A, for use in industrial areas Limit class B, for use in residential areas Limit class B, for use in residential areas Pegree and class of protection IP degree of protection IP20 Standards, approvals, certificates Marine approval Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Ambient conditions Free fall Pax. O, 3 m; five times, in product package Performance level according to ISO 13849-1 Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Ambient temperature during operation Princ Pax. Sil s | | Yes |
| Limit class B, for use in residential areas Yes; When appropriate measures are used to ensure compliance with the limits for Class B according to EN 55011 Degree and class of protection IP degree of protection IP20 Standards, approvals, certificates Marine approval Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Ambient conditions Free fall Free fall Final PLe SIL acc. to IEC 61508 SIL 3 Ambient temperature during operation IP30 IP40 IP50 IP | Emission of radio interference acc. to EN 55 011 | |
| for Class B according to EN 55011 Degree and class of protection IP degree of protection Standards, approvals, certificates Marine approval Performance level according to ISO 13849-1 SIL ac. to IEC 61508 Ambient conditions Free fall Fall height, max. Ambient temperature during operation max. horizontal installation, min. vertical installation, min. vertical installation, max. Ambient temperature during storage/transportation min. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. orac. orac | Limit class A, for use in industrial areas | Yes; Group 1 |
| IP degree of protection IP20 Standards, approvals, certificates Marine approval Highest safety class achievable in safety mode • Performance level according to ISO 13849-1 • SIL acc. to IEC 61508 Ambient conditions Free fall • Fall height, max. Ambient temperature during operation • min. • max. • horizontal installation, min. • vertical installation | • Limit class B, for use in residential areas | |
| Standards, approvals, certificates Marine approval Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Ambient conditions Free fall Fall height, max. Ambient temperature during operation max. horizontal installation, min. vertical installation, min. vertical installation, min. vertical installation, max. Ambient temperature during storage/transportation vertical installation, max. 45 °C Ambient temperature during storage/transportation min. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. operation, min. 40 °C nmax. Air pressure acc. to IEC 60068-2-13 operation, min. operation, min. operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | Degree and class of protection | |
| Marine approval Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 SIL 3 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package Ambient temperature during operation min. Pal height, max. O.3 m; five times, in product package Ambient temperature during operation min. Pal height, max. S5 °C; = Tmin Norizontal installation, min. Pal horizontal installation, min. Pal horizontal installation, max. Vertical installation, max. Vertical installation, max. Absorber during storage/transportation min. Ado °C Ambient temperature during storage/transportation min. Ado °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation attitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | IP degree of protection | IP20 |
| Highest safety class achievable in safety mode Performance level according to ISO 13849-1 SIL acc. to IEC 61508 Ambient conditions Free fall Final height, max. Ambient tumperature during operation in min. min. min. min. min. min. min. min. | Standards, approvals, certificates | |
| Ple Sil. acc. to IEC 61508 Sil. 3 Ambient conditions Free fall Fall height, max. O.3 m; five times, in product package Ambient temperature during operation ini. max. horizontal installation, min. horizontal installation, min. vertical installation, min. vertical installation, max. horizontal installation, max. horizontal installation, min. vertical installation, max. horizontal installation, min. vertical installation, min. vertical installation, max. horizontal installation, min. processor horiz | Marine approval | Yes |
| SIL 3 Ambient conditions Free fall Fall height, max. 0.3 m; five times, in product package Ambient temperature during operation ini. max. horizontal installation, min. horizontal installation, max. horizontal installation, max. vertical installation, max. vertical installation, max. vertical installation, max. horizontal installation altitude during operation relating to sea level linstallation altitude above sea level, max. horizontal installation altitude above sea level, max. horizontal installation altitude above sea level, max. horizontal installation in product package horizontal installation product pac | Highest safety class achievable in safety mode | |
| Free fall Fall height, max. O.3 m; five times, in product package Ambient temperature during operation min. max. horizontal installation, min. horizontal installation, max. horiz | Performance level according to ISO 13849-1 | PLe |
| Free fall Fall height, max. O.3 m; five times, in product package Ambient temperature during operation min. max. horizontal installation, min. horizontal installation, max. horizontal installation, max. for c vertical installation, min. vertical installation, max. for c min. min. max. for c Ambient temperature during storage/transportation min. max. for c Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | SIL acc. to IEC 61508 | SIL 3 |
| Fall height, max. O.3 m; five times, in product package Ambient temperature during operation min. max. horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, max. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. min. max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | Ambient conditions | |
| Ambient temperature during operation o min. o max. o horizontal installation, min. o horizontal installation, min. o vertical installation, min. o vertical installation, min. o vertical installation, max. o vertical installation, min. o vertical installation, min. o vertical installation of vertical v | Free fall | |
| min. max. horizontal installation, min. -25 °C horizontal installation, max. vertical installation, min. -25 °C vertical installation, max. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. max. max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | 0.3 m; five times, in product package |
| max. horizontal installation, min. -25 °C horizontal installation, max. vertical installation, min. -25 °C vertical installation, min. -25 °C vertical installation, max. 45 °C Ambient temperature during storage/transportation min. 40 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. 1 080 hPa Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | Ambient temperature during operation | |
| horizontal installation, min. horizontal installation, max. vertical installation, min. vertical installation, min. vertical installation, max. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. 40 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | min. | |
| horizontal installation, max. vertical installation, min. vertical installation, max. vertical installation, max. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. -40 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Operation, max. 1 080 hPa Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | |
| vertical installation, min. vertical installation, max. 45 °C Ambient temperature during storage/transportation min. -40 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Timin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | , | |
| vertical installation, max. Ambient temperature during storage/transportation min. -40 °C max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Timin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | |
| Ambient temperature during storage/transportation • min. • max. 70 °C Air pressure acc. to IEC 60068-2-13 • Operation, min. • Operation, max. 1 080 hPa Altitude during operation relating to sea level • Installation altitude above sea level, max. • Ambient air temperature-barometric pressure-altitude 1 consideration of the product of the p | | |
| min. max. 70 °C Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. 1 080 hPa Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | 45 °C |
| max. Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | 40.00 |
| Air pressure acc. to IEC 60068-2-13 Operation, min. Operation, max. 1080 hPa Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | |
| Operation, min. Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude 795 hPa 1 080 hPa 2 000 m Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | 70 °C |
| Operation, max. Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude 1 080 hPa 2 000 m Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | 705 hDa |
| Altitude during operation relating to sea level Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude 2 000 m Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | |
| Installation altitude above sea level, max. Ambient air temperature-barometric pressure-altitude 2 000 m Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | | 1 000 1184 |
| Ambient air temperature-barometric pressure-altitude Tmin Tmax at 1 140 hPa 795 hPa (-1 000 m +2 000 m) | · · · · · · · · · · · · · · · · · · · | 2 000 m |
| | | |
| Relative humidity | Ambient air temperature-barometric pressure-aititude Relative humidity | 111111 1111ax at 1 140 11Fa 795 11Fa (-1 000 111 +2 000 111) |
| With condensation, tested in accordance with IEC 60068- 2-38, max. 100 %; RH incl. condensation/frost (no commissioning under condensation conditions) | With condensation, tested in accordance with IEC 60068- | |



| Vibrations | |
|---|---|
| Vibration Vibration resistance during operation acc. to IEC 60068- | 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail |
| 2-6 | |
| Operation, tested according to IEC 60068-2-6 | Yes |
| Shock testing | V 150.00 B 10.07 L K : 45 44 |
| • tested according to IEC 60068-2-27 | Yes; IEC 68, Part 2-27; half-sine, 15 g, 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 |
| onfiguration / header | |
| configuration / programming / header | |
| Programming language | |
| — LAD | Yes; incl. failsafe |
| — FBD | Yes; incl. failsafe |
| — SCL | Yes |
| programming / cycle time monitoring / header | |
| adjustable | Yes |
| Dimensions | |
| Width | 110 mm |
| | 100 mm |
| Height | 75 mm |
| Depth | 75 111111 |
| Veights | 405 - |
| Weight, approx. | 435 g |

last modified:



