SIEMENS

Data sheet

6ES7211-1BE40-0XB0

SIMATIC S7-1200, CPU 1211C, compact CPU, AC/DC/relay, onboard I/O: 6 DI 24 V DC; 4 DO relay 2A; 2 AI 0-10 V DC, Power supply: AC 85-264 V AC at 47-63 Hz, Program/data memory 50 KB



| General information | |
|--|---------------------------------------|
| Product type designation | CPU 1211C AC/DC/relay |
| Firmware version | V4.2 |
| Engineering with | |
| Programming package | STEP 7 V14 or higher |
| Supply voltage | |
| Rated value (AC) | |
| • 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 range, lower limit | 47 Hz |
| • permissible range, upper limit | 63 Hz |
| Input current | |
| Current consumption (rated value) | 60 mA at 120 V AC; 30 mA at 240 V AC |
| Current consumption, max. | 180 mA at 120 V AC; 90 mA at 240 V AC |
| Inrush current, max. | 20 A; at 264 V |

| l²t | 0.8 A ^{2.} s |
|---|---|
| Output current | |
| for backplane bus (5 V DC), max. | 750 mA; Max. 5 V DC for CM |
| | |
| Encoder supply 24 V encoder supply | |
| • 24 V | 20.4 to 28.8V |
| • 24 V | 20.7 10 20.0 V |
| Power loss | |
| Power loss, typ. | 10 W |
| Memory | |
| Work memory | |
| • integrated | 50 kbyte |
| • expandable | No |
| Load memory | |
| • integrated | 1 Mbyte |
| Plug-in (SIMATIC Memory Card), max. | with SIMATIC memory card |
| Backup | |
| • present | Yes |
| maintenance-free | Yes |
| without battery | Yes |
| CPU processing times | |
| for bit operations, typ. | 0.08 μs; / instruction |
| 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 |
| OB | restriction, the entire working memory can be used |
| • Number, max. | Limited only by RAM for code |
| | |
| Data areas and their retentivity | |
| Retentive data area (incl. timers, counters, flags), | 10 kbyte |
| max. | |
| Flag | 4 khuta: Siza of hit momony address area |
| • Number, max. | 4 kbyte; Size of bit memory address area |
| Address area | |
| Process image | |
| Inputs, adjustable | 1 kbyte |
| Outputs, adjustable | 1 kbyte |
| Hardware configuration | |

Number of modules per system, max.

3 communication modules, 1 signal board

| Time of dou | |
|--|--|
| Time of day Clock | |
| Hardware clock (real-time) | Yes |
| Backup time | 480 h; Typical |
| · | ± 60 s/month at 25 °C |
| Deviation per day, max. | |
| Digital inputs | |
| Number of digital inputs | 6; Integrated |
| of which inputs usable for technological | 6; HSC (High Speed Counting) |
| functions | |
| Source/sink input | Yes |
| Number of simultaneously controllable inputs | |
| all mounting positions | |
| — up to 40 °C, max. | 6 |
| 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 current | |
| ● for signal "1", typ. | 4 mA; nominal |
| Input delay (for rated value of input voltage) | |
| for standard inputs | |
| — parameterizable | 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, differential: 3 @ 80 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 | 4; 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. |
| - i to o , max. | |

| • Number of relay outputs 4 • Number of operating cycles, max. mechanically 10 million, at rated load voitage 100 000 Cable length 500 m • shielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Input ranges Voitage • Voitage (rated values), voitages Yes • Number of analog inputs (to 10 V) Yes • Input resistance (to 10 V) Yes • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog outputs 0 Analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel - • Resolution with overrange (bit including sign), max. 10 bit • Analog value generation for the inputs - Integration and conversion time/resolution per channel - • Resolution with overrange (bit including sign), max. 10 bit • Integration and conversion time/resolution per channel - • Conversion time (per channel) 625 µs Encoder - Connectable encoders - • 2.wire sensor Yes Interface type PROFINET Physia Ethernet | Relay outputs | |
|---|---|--|
| Cable length 500 m • shielded, max. 500 m • unshielded, max. 150 m Analog inputs 2 Number of analog inputs 2 • Voltage Yes • Input ranges (rated values), voltages - • Uo +10 V Yes • Input ranges (rated values), voltages - • Input ranges (rated values), voltages - • Input resistance (0 to 10 V) Yes Cable length - • shielded, max. 100 m; twisted and shielded Analog outputs 0 Number of analog outputs 0 Number of analog outputs 0 • Resolution with overrange (bit including sign), max. 10 bit • Integration and conversion time/resolution per channel - • Conversion time (per channel) 625 µs Encoder - Connectable encoders - • 2 wire sensor Yes 1 Interface - Interface type PROFINET Physics Ethernet Isolatid Yes automatic detection of transmission rate Yes Autocrossing Yes Interface types 1 • Number of ports 1 < | Number of relay outputs | 4 |
| • shielded, max.500 m• unshielded, max.150 mAnalog inputs2Analog inputs of analog inputs (Particle Analog inputs Particle Analog input sample Analog output analog input sample Analog output analog output analog outputsYes• Otic +10 VYesYes• Otic +10 VYesYes• Otic +10 VYesYes• Shielded, max.100 m; twisted and shieldedAnalog outputs0Analog outputs0Analog value generation for the inputs• Number of analog outputs0• Conversion time/resolution per channelYes• Conversion time (per channel)Yes• Conversion time (per channel)Yes• Conversion time (per channel)Yes• LinterfaceYesInterface typePROFINETPhysicsEthernetIsolatedYesAutoorcostingYesAutoorcostingYesAutorcostingYesNumber of ports1• Number of portsNo• Number of ports1• Nu | Number of operating cycles, max. | mechanically 10 million, at rated load voltage 100 000 |
| • unshielded, max. 150 m Analog inputs Analog inputs Input ranges Ves Input ranges (rated values), voltage Ves Input resistance (0 to 10 V) 2100k ohms Cable length shielded, max. 100 m; twisted and shielded Analog outputs O Analog outputs O Analog outputs Integration and conversion time/resolution per channel Resolution with overrange (bit including sign), max. Integration and conversion time/resolution per channel Conversion time (per channel) Conversion time (per channel) Interface Ves automatic detection of transmission rate Ves Autocrossing Ves Autocrossing Ves Number of ports Number of ports Number of ports Number of ports Procome Ves | Cable length | |
| Analog inputs 2 Analog inputs 2 Input ranges (rated values), voltages Yes • Vo trage Yes Input ranges (rated values), voltages 2 • 0 to +10 V Yes • Input resistance (0 to 10 V) 2100k ohms Cable length - • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog value generation for the inputs 0 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 Interface type PROFINET Physics Ethernet Isolated Yes Autonegotiation Yes Autonegotiation Yes Autonegotiation Yes Interface types - • Number | shielded, max. | 500 m |
| Number of analog inputs 2 Input ranges Ves Input ranges (rated values), voltages Ves 0 to +10 V Yes • Input resistance (0 to 10 V) ≥100k ohms Cable length • shielded, max. • shielded, max. 100 m; twisted and shielded Analog outputs 0 Number of analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder Connectable encoders • 2-wire sensor Yes 1. Interface PROFINET Physics Ethernet isolated Yes automatic detection of transmission rate Yes Autorossing Yes Interface type Yes Autorossing Yes Interface types Yes Protocols 1 • Number of ports | unshielded, max. | 150 m |
| Number of analog inputs 2 Input ranges Ves Input ranges (rated values), voltages Ves 0 to +10 V Yes • Input resistance (0 to 10 V) ≥100k ohms Cable length • shielded, max. • shielded, max. 100 m; twisted and shielded Analog outputs 0 Number of analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder Connectable encoders • 2-wire sensor Yes 1. Interface PROFINET Physics Ethernet isolated Yes automatic detection of transmission rate Yes Autorossing Yes Interface type Yes Autorossing Yes Interface types Yes Protocols 1 • Number of ports | | |
| Input ranges Yes Input ranges (rated values), voltages Yes 0 to +10 V Yes 0 to +10 V 2400k ohms Cable length ************************************ | | 2 |
| • Voltage Yes Input ranges (rated values), voltages • 0 to +10 V Yes • 0 to +10 V Yes > 100k ohms Cable length • 2100k ohms • 2100k ohms Cable length • 100 m; twisted and shielded • 200m Analog outputs 0 • 200m • 200m Analog outputs 0 • 200m • 200m • Resolution with overrange (bit including sign), max. • 100 bit • 200m • Integration time, parameterizable Yes • 200m • Conversion time (per channel) • 205 µs • 200m Encoder • 200m Yes Interface PROFINET • 100m Interface type PROFINET • 200m Physics Ethermet 100m isolated Yes • 200m automatic detection of transmission rate Yes Autorogoliation Yes • 200m Autoregoliation Yes • 100m Number of ports 1 • 100m • Number of ports <t< td=""><td>• .</td><td>2</td></t<> | • . | 2 |
| Input ranges (rated values), voltages • 0 to +10 V Yes • Input resistance (0 to 10 V) ≥100k ohms Cable length 100 m; twisted and shielded • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 μs Encoder Ves • Connectable encoders • Yes • Linterface Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autocrossing Yes Interface type Yes Number of ports 1 • integrated switch No Protocols * | | Ves |
| • 0 to +10 V Yes • Input resistance (0 to 10 V) ≥100k ohms Cable length 100 m; twisted and shielded • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 μs Encoder Ves • Interface Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autocrossing Yes Interface type Yes Interface types Yes • Number of ports 1 • Number of ports 1 • integrated switch No • PROFINET IO Controller Yes | | |
| • Input resistance (0 to 10 V) ≥100k ohms Cable length 100 m; twisted and shielded • shielded, max. 100 m; twisted and shielded Analog outputs 0 Analog value generation for the inputs 0 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 Ves • Connectable encoders • • 2-wire sensor Yes Interface type PROFINET Physics Ethernet Isolated Yes Autorcossing Yes Autorcossing Yes Interface type PROFINET Physics Ethernet Isolated Yes Autorcossing Yes Interface types Yes • Number of ports 1 • integrated switch No Protocols Yes | | Vec |
| Analog outputs 100 m; twisted and shielded Analog outputs 0 Analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 μs Encoder Ves Connectable encoders • 2-wire sensor Yes 10 Interface Interface type PROFINET Physics Ethernet Isolated Yes Autoregotiation Yes Autoregotiation Yes Autoregotiation Yes Interface type PROFINET Physics Ethernet Isolated Yes Autoregotiation Yes Autoregotiation Yes Number of ports 1 • integrated switch No Protocols Yes | | |
| • shielded, max. 100 m; twisted and shielded Analog outputs 0 Number of analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel • Resolution with overrange (bit including sign), max. • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder • Connectable encoders • 2-wire sensor Yes 1 Interface PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autorcossing Yes Autoregotiation Yes • Number of ports 1 • Number of ports 1 • Number of ports 1 • PROFINET IO Controller Yes | | |
| Analog outputs 0 Analog value generation for the inputs 0 Integration and conversion time/resolution per channel 0 • Resolution with overrange (bit including sign), max. 10 bit • Integration time, parameterizable Yes • Conversion time (per channel) 625 µs Encoder 625 µs Connectable encoders Yes • 2-wire sensor Yes Interface Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autocrossing Yes Interface types Yes Autocrossing Yes Interface types Yes Protocols 1 • integrated switch No Protocols Yes | | 100 m: twisted and shielded |
| Number of analog outputs 0 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 625 µs Connectable encoders Yes • 2-wire sensor Yes Interface Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autocrossing Yes Interface types Yes • Number of ports 1 • Number of ports 1 • integrated switch No Protocols Yes | • shielded, max. | |
| 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 Encoders • 2-wire sensor Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autocrossing Yes Autocrossing Yes Interface types Yes • Number of ports 1 • Number of ports 1 • integrated switch No Protocols Yes | Analog outputs | |
| 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 625 μs Connectable encoders Yes • 2-wire sensor Yes 1. Interface Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autorogotiation Yes Interface types Yes Number of ports 1 • Number of ports 1 • integrated switch No Protocols Yes | Number of analog outputs | 0 |
| 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 625 μs Connectable encoders Yes • 2-wire sensor Yes 1. Interface Yes Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autorogotiation Yes Interface types Yes Number of ports 1 • Number of ports 1 • integrated switch No Protocols Yes | Analog value generation for the inputs | |
| • Resolution with overrange (bit including sign), max.10 bit• Integration time, parameterizableYes• Conversion time (per channel)625 µs• Connectable encoders•• 2-wire sensorYes• 2-wire sensorYesInterface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutoregotiationYesAutoregotiationYesInterface typesYes• PNUmber of ports1• Number of ports1• Integrated switchNo• PROFINET IO ControllerYes | | |
| max.Yes• Integration time, parameterizableYes625 μsEncoderEncoders• 2-wire sensorYes• 2-wire sensorYesInterface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutocrossingYesInterface typesYes• Number of ports1• Number of ports1• integrated switchNoProtocolsYes• PROFINET IO ControllerYes | - | 10 bit |
| • Conversion time (per channel) 625 μs Encoder 625 μs Connectable encoders • 2-wire sensor • 2-wire sensor Yes Interface PROFINET Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autorossing Yes Interface types 1 • Number of ports 1 • integrated switch No Protocols Yes | | |
| Encoder Connectable encoders • 2-wire sensor 1.Interface Interface type Physics Isolated automatic detection of transmission rate Autonegotiation Autorossing Interface types • Number of ports • integrated switch Protocols • PROFINET IO Controller Yes | Integration time, parameterizable | Yes |
| Connectable encoders Yes • 2-wire sensor Yes 1. Interface PROFINET Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Protocols Yes | Conversion time (per channel) | 625 µs |
| Connectable encoders Yes • 2-wire sensor Yes 1. Interface PROFINET Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Protocols Yes | Freeder | |
| • 2-wire sensor Yes 1. Interface PROFINET Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types Yes • Number of ports 1 • integrated switch No Protocols Yes | | |
| 1. Interface Interface type PROFINET Physics Ethernet Isolated Yes automatic detection of transmission rate Yes Autonegotiation Yes Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Protocols Yes | | Yes |
| Interface typePROFINETPhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface typesYes• Number of ports1• integrated switchNoProtocolsYes• PROFINET IO ControllerYes | | |
| PhysicsEthernetIsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface typesYes• Number of ports1• integrated switchNoProtocolsYes | | |
| IsolatedYesautomatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface typesYes• Number of ports1• integrated switchNoProtocolsYes• PROFINET IO ControllerYes | | |
| automatic detection of transmission rateYesAutonegotiationYesAutocrossingYesInterface typesYes• Number of ports1• integrated switchNoProtocolsYes• PROFINET IO ControllerYes | | |
| Autonegotiation Yes Autocrossing Yes Interface types Yes • Number of ports 1 • integrated switch No Protocols Yes | | |
| Autocrossing Yes Interface types 1 • Number of ports 1 • integrated switch No Protocols Yes | | |
| Interface types • Number of ports 1 • integrated switch No Protocols Yes | - | |
| • Number of ports 1 • integrated switch No • Protocols Yes | | Yes |
| integrated switch No Protocols PROFINET IO Controller Yes | | |
| Protocols PROFINET IO Controller Yes | | |
| PROFINET IO Controller Yes | | No |
| | Protocols | |
| PROFINET IO Device Yes | PROFINET IO Controller | |
| | PROFINET IO Device | Yes |
| SIMATIC communication Yes | SIMATIC communication | Yes |

| Open IE communication | Yes |
|--|--|
| Web server | Yes |
| Media redundancy | No |
| PROFINET IO Controller | |
| Transmission rate, max. | 100 Mbit/s |
| Services | |
| — PG/OP communication | Yes |
| — S7 routing | Yes |
| — Isochronous mode | No |
| — Open IE communication | Yes |
| — IRT | No |
| — MRP | No |
| — MRPD | No |
| — PROFlenergy | No |
| — Prioritized startup | Yes |
| — Number of IO devices with prioritized | 16 |
| startup, max. | |
| Number of connectable IO Devices, max. | 16 |
| — Number of connectable IO Devices for RT, | 16 |
| max. | |
| — of which in line, max. | 16 |
| Activation/deactivation of IO Devices | Yes |
| Number of IO Devices that can be | 8 |
| simultaneously activated/deactivated, max. | |
| — 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 |
| — S7 routing | Yes |
| — Isochronous mode | No |
| — Open IE communication | Yes |
| — IRT | No |
| — MRP | No |
| — MRPD | No |
| — PROFlenergy | Yes |
| — Shared device | Yes |
| — Number of IO Controllers with shared | 2 |
| device, max. | |
| Protocols | |
| Supports protocol for PROFINET IO | Yes |

| PROFIBUS | Yes; CM 1243-5 (master) or CM 1242-5 (slave) required |
|---|--|
| AS-Interface | Yes; CM 1243-2 required |
| Protocols (Ethernet) | · |
| • TCP/IP | Yes |
| • DHCP | No |
| • SNMP | Yes |
| • DCP | Yes |
| • LLDP | Yes |
| Open IE communication | |
| • TCP/IP | Yes |
| — Data length, max. | 8 kbyte |
| — several passive connections per port, supported | Yes |
| 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 | |
| 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 | |
| Number of configurable Traces | 2 |

| Memory size per trace, max. | 512 kbyte |
|--|--|
| Interrupts/diagnostics/status information | |
| Diagnostics indication LED | |
| RUN/STOP LED | Yes |
| • ERROR LED | Yes |
| • MAINT LED | Yes |
| Integrated Functions | |
| Number of counters | 3 |
| Counting frequency (counter) max. | 100 kHz |
| 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 | |
| Potential separation digital inputs | 500V AC for 1 minute |
| between the channels, in groups of | 1 |
| Potential separation digital outputs | |
| Potential separation digital outputs | Relays |
| between the channels | No |
| between the channels, in groups of | 1 |
| EMC | |
| Interference immunity against conducted variable distur | rbance induced by high-frequency fields |
| Interference immunity against high-frequency radiation acc. to IEC 61000-4-6 | Yes |
| Emission of radio interference acc. to EN 55 011 | |
| Limit class A, for use in industrial areas | Yes; Group 1 |
| 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 | |
| Degree of protection acc. to EN 60529 | |
| • IP20 | Yes |
| Standards, approvals, certificates | |
| CE mark | Yes |
| UL approval | Yes |
| cULus | Yes |
| FM approval | Yes |
| RCM (formerly C-TICK) | Yes |

| Marine approval Yes Ambient econditions 0.3 m; five times, in product package Ambient temperature during operation 0.3 m; five times, in product package Ambient temperature during operation 0.0 °C • max. 60 °C • horizontal installation, min. -20 °C • borizontal installation, max. 60 °C • vertical installation, max. 70 °C Ambient temperature during storage/transportation -40 °C • max. 70 °C Ar pressure acc: to IEC 60068-2-13 - • Operation, max. 1080 hPa • Storage/transport, min. 600 hPa • Storage/transport, min. 1080 hPa • Installation altitude, max. 2000 m Relative humidity - • Operation, max. 2000 m • Notation resistance during operation acc: to IEC 60068-2-6 Yes • Operation, tested according to IEC 600 | KC approval | Yes |
|--|--|--|
| Free fall • Fail height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • norizontal installation, min. -20 °C • horizontal installation, max. 60 °C • horizontal installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • max. 50 °C Ambient temperature during storage/transportation -40 °C • min. -40 °C • operation, min. -40 °C • Operation, max. 1080 hPa • Storage/transport, min. 1080 hPa • Installation alitude, min. 1080 hPa • Installation alitude, max. 2000 m • Operation, max. -1000 m • Operation, easted according to IEC 60068-2-6 • Vibration resi | Marine approval | Yes |
| Free fall • Fail height, max. 0.3 m; five times, in product package Ambient temperature during operation -20 °C • min. -20 °C • norizontal installation, min. -20 °C • horizontal installation, max. 60 °C • horizontal installation, max. 50 °C • vertical installation, max. 50 °C Ambient temperature during storage/transportation -20 °C • min. -20 °C • max. 50 °C Ambient temperature during storage/transportation -40 °C • min. -40 °C • operation, min. -40 °C • Operation, max. 1080 hPa • Storage/transport, min. 1080 hPa • Installation alitude, min. 1080 hPa • Installation alitude, max. 2000 m • Operation, max. -1000 m • Operation, easted according to IEC 60068-2-6 • Vibration resi | Ambient conditions | |
| Ambient temperature during operation -20 °C • min. -20 °C • max. 60 °C • horizontal installation, min. -20 °C • briziontal installation, max. 60 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 50 °C • vertical installation, max. 70 °C • min. -40 °C • max. 70 °C Antisent temperature during storage/transportation -40 °C • operation, max. 1080 hPa • Operation, max. 1080 hPa • Storage/transport, max. 1080 hPa • Storage/transport, max. 1080 hPa • Storage/transport, max. 1000 m • Installation altitude, min. -1000 m • Installation altitude, max. 25 (m/s) wall mounting, 1 g (m/s ⁺) DIN rail • Certation, max. 2 g (m/s ⁺) wall mounting, 1 g (m/s ⁺) DIN rail • Certation, tested according to IEC 60068-2-6 Yes • Operation, tested according to IEC 60068-2-27 Yes: IEC 68, Part 2-27 halFsine: strength of the shock 15 g (peak value), dura | | |
| •min20 °C•max.60 °C•horizontal installation, min20 °C•horizontal installation, max.60 °C•vertical installation, max.60 °C•vertical installation, max.60 °C•vertical installation, max.50 °CAmbient temperature during storage/transportation-20 °C•min40 °C•min40 °C•min70 °C•min40 °C•min70 °C•min70 °C•min70 °C•Operation, min.1080 hPa•Operation, max.1080 hPa•Storage/transport, max.1080 hPa•Storage/transport, max.1080 hPa•Storage/transport, max.2 000 mRelative during operation relating to sea level•Installation altitude, max.2 000 mRelative humidity•Operation, max.2 000 mRelative humidity•Operation, max.2 g (m/s*) wall mounting, 1 g (m/s*) DIN rail•Operation, tested according to IEC 60068-2-6Yes•Operation, tested according to IEC 60068-2-6Yes•Operation, tested according to IEC 60068-2-6Yes•Operation, tested according to IEC 60068-2-7Yes•Noration relations502 < 0.5 pm; H2S: < 0.1 pm; RH < 60% condensation-free | ● Fall height, max. | 0.3 m; five times, in product package |
| max.60 °C• horizontal installation, min20 °C• horizontal installation, max.60 °C• vertical installation, max20 °C• vertical installation, max20 °C• vertical installation, max20 °C• vertical installation, max20 °C• min40 °C• max40 °C• max10 °C• max10 °C• operation, min40 °C• operation, max.1080 hPa• Operation, max.1080 hPa• Storage/transport, max.1080 hPa• Storage/transport, max.0 1000 m• Storage/transport, max.2000 m• Installation altitude, max.2000 m• Natallation altitude, max.2000 m• Poperation, max.1000 m• Installation altitude, max.2000 m• Natallation altitude, max.2 g(m/s ⁴) wall mounting, 1 g(m/s ⁴) DIN rail• Operation, max.2 g(m/s ⁴) wall mounting, 1 g(m/s ⁴) DIN rail• Operation, tested according to IEC 60068-2-7Yes• Notation resistance during operation acc. to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-7Yes, IEC 68, Part 2-27 half-sine: strength of the shock 15 g (part alue), duration 11 ms• Distallation altitude, min.50: < 0.5 pm; H2S: < 0.1 pm; RH < 60% condensation-free | Ambient temperature during operation | |
| Induct tend-20 °Ci horizontal installation, min.60 °Ci vertical installation, max.50 °CAmber50 °CAmber70 °CAmine70 °Ci max.70 °COperation, min.70 °Coperation, min.1080 NPaoperation, max.1080 NPaoperation, max.600 NPaoperation, max.600 NPaoperation, max.600 NPaoperation, max.600 NPaoperation, max.600 NPaoperation, max.900 NPaoperation, max.2000 mAttitude during operation relating to sea levelInstallation altitude, min.1000 moperation, max.2000 mRelative humidityoperation, max.2000 mRelative humidityoperation, max.2000 mRelation altitude, min.95 %; no condensationoperation, max.2000 mRelative humidityoperation, tested according to IEC 60068-2-6Yesoperation, tested according to IEC 60068-2-6Yes; IEC 68, Parl 2-27 half-sine: strength of the shock 15 g (pask 'aulu) duration 11 msPollutan concentrationsYes; IEC 68, Parl 2-27 half-sine: strength of the shock 15 g (pask 'aulu) duration 11 msPollutan concentrationsYes; IEC 68, Parl 2-27 half-sine: strength of the shock 15 g (pask 'aulu) duration 11 msPollutan concentrationsYes; IEC 68, Parl 2-27 half-sine: strength of the shock 15 g (pask 'aulu) duration 11 msPollutan concentrationsYes; IEC 68, | • min. | -20 °C |
| Induction of the second seco | • max. | 60 °C |
| National Natio | horizontal installation, min. | -20 °C |
| •vertical installation, max. 50 °C Ambient temperature during storage/transportation - • min. -40 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 - • Operation, min. 795 hPa • Operation, max. 1080 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa • Storage/transport, max. 1080 hPa • Storage/transport, max. 2000 m • Installation altitude, min. 1000 m • Installation altitude, max. 2000 m • Poleration, max. 95 %; no condensation • Operation, max. 2 g (m/s*) wall mounting, 1 g (m/s*) DIN rail • Stocabes-2-6 - • Operation, tested according to IEC 60068-2-6 Yes • Operation, tested according to IEC 60068-2-27 Yes • Stock testing - • Stock testing - • Storage/transport - • Storage/transport - • Storage/transport Storage/transport </td <td> horizontal installation, max. </td> <td>60 °C</td> | horizontal installation, max. | 60 °C |
| Ambient temperature during storage/transportation emin. emin. emin. emax. 70 °C Air pressure acc. to IEC 60068-2-13 eOperation, min. Operation, min. Operation, max. 1080 hPa Storage/transport, min. 1080 hPa Storage/transport, max. 2000 m Storage/transport relating to sea level Storage/transport, max. 2000 m Storage/transport, max. Storage/transport, storage/transport | vertical installation, min. | -20 °C |
| • min. -40 °C • max. 70 °C Air pressure acc. to IEC 60068-2-13 - • Operation, min. 795 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa • Altitude during operation relating to sea level - • Installation altitude, min. -1000 m • Installation altitude, max. 2000 m • Operation, max. 95 %; no condensation • Operation, max. 95 %; no condensation • Vibration resistance during operation acc. to IEC 60068-2-6 2 g (m/s ³) wall mounting, 1 g (m/s ³) DIN rail • Vibration resistance during operation acc. to IEC 60068-2-6 2 g (m/s ³) wall mounting, 1 g (m/s ³) DIN rail • Operation, tested according to IEC 60068-2-6 Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations So2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free value), duration 11 ms Pollutant concentrations So2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free value), duration 11 ms Programming language - - - IAD Yes | vertical installation, max. | 50 °C |
| mm70 °CAir pressure acc. to IEC 60068-2-13795 hPa• Operation, min.795 hPa• Operation, max.1080 hPa• Storage/transport, min.660 hPa• Storage/transport, max.1080 hPa• Installation altitude, min.1000 m• Installation altitude, max.2000 m• Installation altitude, max.95 %; no condensation• Operation, resistance during operation resistance95 %; no condensation• Vibration resistance during operation acc. to IEC 60068-2-6 • Operation, tested according to IEC 60068-2-6 • Solutant concentrationsYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPolutant concentrationsSol: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation free value), duration 11 msProgramming languageImen- In ADYes- In ADYes- In ADYes- FBDYes- FBDYes | Ambient temperature during storage/transportation | |
| Autom Mathematical and any and any and any | • min. | -40 °C |
| • Operation, min. 795 hPa • Operation, max. 1080 hPa • Storage/transport, min. 660 hPa • Storage/transport, max. 1080 hPa Altitude during operation relating to sea level 1000 m • Installation altitude, min. 1000 m • Installation altitude, max. 2000 m Relative humidity 95 %; no condensation • Operation, max. 95 %; no condensation Vibration resistance during operation acc. to IEC 60068-2-6 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes • Operation, 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 Pollutant concentrations Volcation 11 ms Programming So2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | • max. | 70 °C |
| Operation, max.1 080 hPa• Operation, max.660 hPa• Storage/transport, max.1 080 hPaAltitude during operation relating to sea level1 080 nPa• Installation altitude, min.1 000 m• Installation altitude, max.2 000 mRelative humidity95 %; no condensation• Operation, max.95 %; no condensationVibration resistance during operation acc. to IEC 60068-2-62 g (m/s ³) wall mounting, 1 g (m/s ³) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s ³) wall mounting, 1 g (m/s ³) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Shock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsS02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | Air pressure acc. to IEC 60068-2-13 | |
| Sportacin, maxStorage/transport, max.660 hPa• Storage/transport, max.1080 hPaAltitude during operation relating to sea level• Installation altitude, min1 000 m• Installation altitude, max.2 000 mRelative humidity95 %; no condensation• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Shock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• Pollutant concentrations\$02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | • Operation, min. | 795 hPa |
| ConsignmentAltitude• Storage/transport, max.1 080 hPaAltitude during operation relating to sea level-1 000 m• Installation altitude, min1 000 m• Installation altitude, max.2 000 mRelative humidity95 %; no condensation• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• tested according to IEC 60068-2-7Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsso2: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | • Operation, max. | 1 080 hPa |
| Altitude during operation relating to sea level Installation altitude, min. 1000 m Installation altitude, max. 2000 m Relative humidity Operation, max. 95 %; no condensation Vibrations 95 %; no condensation Vibration resistance during operation acc. to IEC 60068-2-6 Operation, tested according to IEC 60068-2-6 Yes Operation, tested according to IEC 60068-2-6 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 S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Programming Image: Solution is in the image | • Storage/transport, min. | 660 hPa |
| • Installation altitude, min1 000 m• Installation altitude, max.2 000 mRelative humidity95 %; no condensation• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-67Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrations502: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | Storage/transport, max. | 1 080 hPa |
| Installation altitude, max.2 000 mRelative humidity95 %; no condensation• Operation, max.95 %; no condensationVibrations2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsS02 × 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | Altitude during operation relating to sea level | |
| Relative humidity 95 %; no condensation • Operation, max. 95 %; no condensation Vibrations 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail • Vibration resistance during operation acc. to IEC 60068-2-6 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail • Operation, tested according to IEC 60068-2-6 Yes Shock testing Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | Installation altitude, min. | -1 000 m |
| • Operation, max.95 %; no condensationVibrations• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6Yes• Operation, tested according to IEC 60068-2-6Yes• Shock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• Pollutant concentrationsS02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | Installation altitude, max. | 2 000 m |
| Vibrations• Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6YesShock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsS02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | Relative humidity | |
| • Vibration resistance during operation acc. to IEC 60068-2-62 g (m/s²) wall mounting, 1 g (m/s²) DIN rail• Operation, tested according to IEC 60068-2-6YesShock testingYes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms• tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsS02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | • Operation, max. | 95 %; no condensation |
| IEC 60068-2-6 Yes • Operation, tested according to IEC 60068-2-6 Yes Shock testing 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 | Vibrations | |
| Shock testing Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 ms Pollutant concentrations S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free | | 2 g (m/s²) wall mounting, 1 g (m/s²) DIN rail |
| • tested according to IEC 60068-2-27Yes; IEC 68, Part 2-27 half-sine: strength of the shock 15 g (peak value), duration 11 msPollutant concentrationsS02 at RH < 60% without condensationS02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free• SO2 at RH < 60% without condensationS02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-freeProgramming RHProgrammingYesYesProgramming IanguageYes- LADYesYes- FBDYesYes- SCLYesYes | Operation, tested according to IEC 60068-2-6 | Yes |
| value), duration 11 ms Pollutant concentrations • SO2 at RH < 60% without condensation | Shock testing | |
| SO2 at RH < 60% without condensation S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free Configuration Programming Programming language LAD FBD FBD SCL Yes Yes | • tested according to IEC 60068-2-27 | |
| Configuration Programming Programming language - LAD Yes - FBD Yes - SCL Yes | Pollutant concentrations | |
| Programming Yes | SO2 at RH < 60% without condensation | S02: < 0.5 ppm; H2S: < 0.1 ppm; RH < 60% condensation-free |
| Programming language - LAD Yes - FBD Yes - SCL Yes | Configuration | |
| - LAD Yes - FBD Yes - SCL Yes | Programming | |
| FBD Yes SCL Yes | Programming language | |
| — SCL Yes | — LAD | Yes |
| | — FBD | Yes |
| Know-how protection | — 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 |
| Protection level: Complete protection | Yes |
| Cycle time monitoring | |
| • adjustable | Yes |
| Dimensions | |
| Width | 90 mm |
| Height | 100 mm |
| Depth | 75 mm |
| Weights | |
| Weight, approx. | 420 g |
| last modified: | 10/22/2019 |